MERTON COURSE

VOCATIONAL COUNSELING

and

EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

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INTRODUCTION

The Chief Source of Mental Analysis

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THE ART OF JUDGING PEOPLE

INTRODUCTION
The Chief Source of Mental Analysis

The purposes and uses of this study have been described in the prospectus of the Course in Vocational Counseling and Employee Selection.

Every science and every art must have a broad series of laws and structures underlying its practical uses, its indications and its means of mastery.

This profession of Vocational Counseling and Employment Management is based upon the study of the physical signs and indexes of mental and physical ability. It is intended to discover the differences in the natural ability of different people and the differences in their dispositions, temperaments, vocational abilities and aptitudes.

From General Judgment to Art and Science: We now know that it is possible to so read the signs of weaker, medium, or particularly strong abilities as to give certainty and security in the choice of one's vocation, and by this certainty allow men to break away from the narrow choice made under inexperience or that is circumscribed by an occupation for which they are not mentally or physically adapted.

Few minds can be at ease when struggling through life in a vocation that does not call into play their strongest faculties. Under these conditions there is a sense of not doing one's best that is crowding up in an undertow in one's mentality.

It is only when the mentality is at ease, is proud of its accomplishments, is secure and satisfied by its sense of excellence—it is only under these conditions that one can employ all of his active powers in gaining the best success and maximum results.

Vocational Success of Two Kinds: Vocational success in the matter of salary or financial payment is one part of success
in effort, due to a right choice and a right mental preparation. The potency of the world's progress rests largely in the pleasure of human effort. When one is secure in the natural aptitudes of his vocation, the second part is also a fact and important; it is the fact that then one does with ease and pleasure those efforts which may reach conspicuous perfection, instead of traveling through life in an unequal contest and under enforced ineptness, while possessing some unknown skillfulness.

Not Conceivably Rational: It is not reasonable to think that the mental and physical organism of the human being can or does conceal such important facts as the fairly true revelation of the QUALITY of the individual or the RATIOS of his various abilities or the normal field of his greatest MENTAL ACTIVITY, either in regard to his vocational adaptability or in regard to his normal social happiness. But this revelation, very naturally, had to await the advance of other sciences and arts with which it was associated and which could aid in its solution. The discovery of various general indications began a long time ago and took many forms, but these were not useful as vocational indexes, as is proved by their present failure. Just as man's necessities are becoming more and more complex from year to year, so the necessity for specific determination of specific abilities becomes more and more acute, and the stress of discovery more intense, as the broader science of the age makes discovery possible.

The Past Action Method: What a man has already done, that is, his vocational history, is the general and ordinary means of employment placing, character information and recommendation. We know that, given time and enough opportunity, a man can partially exhibit in his work and actions some of the items of his skill, knowledge or desire, of his purposes as far as he knows them from his past opportunities. But it is doubtful if a man can, himself, ever determine, even generally, the relative or vocational proportion of his faculty abilities to each other. This is proved by the thousands of men who involuntarily leave vocations in which they have thought they were doing well and who then succeed much better in ones for which they did not realize they had natural ability.

The same man cannot have the widely varying conditions or time or the mental or industrial means or self experience necessary for self measurement. He would have to spend fifteen hundred years of experimental work to determine in
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which of the eight hundred major vocations he was best adapted to succeed.

The ease with which he gains particular information is not itself a criterion, because gaining information, and using or expressing it in continuous or intensive effort are two vastly different mental and physical processes. Gaining information precedes its use, just as buying raw materials precedes their manufacture. It is the ability to manufacture the products from raw materials that is the important fact, in mental life as well as in the commodity world.

Generalized Methods of Character Analysis: There are many generalized methods of making character analysis. Their values depend upon the uses to which they are to be put. Among these generalized methods is the older physiognomy, a form of reading the transient expressions of the face and attitude, later described in this lesson. There are various other more recently advocated methods of the mass contours of the head, face and hand, as the proportions of top forehead, tophead and backhead, the middle or lower forehead, sidehead and backhead, the masses of parts of the face, hand, and body, etc., but these are non-specific and not definitive in vocational matters.

General Regions Untrustworthy Vocational or Character Indexes: It is pertinent at this place, and before describing the much more specific method, to take some caution concerning broad and unspecialized indexes of the large brain and facial regions. There is some truth in these general judgments which many people make from whole features or from the transient general expression of a man's face, without knowing the relative ability values of the local regions influenced by particular faculties.

For instance, such judgment assumes that a wide forehead and protruding brows indicate "a deep thinker." But on what subject, or how deep his quality will let him go, is of greater importance. Again, that a Roman nose indicates "a fighter," a square jaw indicates "bull-dog tenacity," a long upper lip shows "great determination," or that a small mouth and arched brows denote "superciliousness." These and other general signs may be true, as massed signs, but they are seldom quantity signs, nor do they often indicate the degree of even their general characteristics. Certainly they are too general for vocational indexes.

Distinctions and Contrasts: In order to analyze mentality and character it is necessary to be much more definite than it
is possible to be with generalities. We must draw distinctions between the various mental causes or states of mind and expression. Every physiologist knows that the mental system and its nerves minutely govern the tissues and organs of the body. Some tissues and organs are under our direct will and mobile control, as the voluntary muscles, others are under involuntary control and support, as the organs of the nutritive system, but all are under CONSTANT INFLUENCE AND CONTROL in the process of growth and vitality. These kinds of control are what we have to deal with in discovering the relative size of the mental abilities, or faculties.

The voluntary control we can read as MOBILE EXPRESSION; it is the smile, the sarcasm, the various gestures of the face and body. Its purpose is to express some of the opinions, feelings and impulses that momentarily pass through our mentality, to reveal by facial gestures what might otherwise take many words to say. It is the passing expression overcoming for the moment the more constant and passive expression of our nature. It is sympathetic with our ideas or our emotions through laws too extensive to treat of here. It is evident that this form of expression cannot be useful for vocational analysis or predictive work.

Conscious Temporary Expression: We can say, then, that the mobile, or transient forms of the face or hand or body, are due to the CONSCIOUS TEMPORARY EXPRESSION of a single or transient intention, emotion, purpose or sentiment; hence these forms of actions have little value in measuring vocational aptitudes or characteristics. These expressions, even when frequently repeated, do not change the constant forms of the features, which go back into their placid expression when the special intention is over, just as the face and body do from the torsion expression of pain or agony.

Hypocritical or Imitative Expression: These forms of expression, whether in the face or body, are CONSCIOUS or desired IMITATION of genuine transient expression; they mimic the expressions noted above.

We see that the temporary expression may be true for the time being, or hypocritical expressions that can be imitative, deceiving or transient at will; that they can change from one kind to the other to suit the personal desires or intentions, and do not give us much information concerning the ability or even the characteristics back of them.

Neither kind has much value, since they may be true but transient, or may be only dubious temporary expression. The
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greater part of the physiognomy of the past consisted in attempts to read these transient or hypocritical forms of expression, except as earlier noted under General Regions. If from time immemorial acute observers could not make more than very general deductions of character and abilities from these general kinds of indications, the prospect of our doing more is small, and we shall not rely upon them. More specific means must and can be called into use.

Failure to see the fundamental distinction between the fact of transient expression, and the more important fact of mass, or quantity, expression, delayed the art of character reading, mental analysis and vocational selection many years.

The next phase in our Mental Analysis Study is to step from the transient expressions and their gestures into revealing phases of constant influence.

**Quantity Expression:** The new means of measurement and analysis of mentality is by the quantity signs, or indexes, of the specific mental faculties from which character and vocations arise. These volume indexes are nature's means of individualizing one person from another, of controlling the proportions of the individual features, and of describing through the laws of growth and repair the characteristics of the individual. Thus one can identify a well known friend from among the nearly two billions of living people.

It is no more natural that the human face should express the transient signs of sarcasm, cunning, astonishment, or agony, than that it should express the volume signs of scrutiny, calculation ability, analytical reason, friendship, or practically a hundred specific abilities.

The Merton Method is the science and art of reading the proportion of the specific mental abilities of an individual, by reading the quantity of mental influence that plays constantly upon local regions of the face, and, much less specifically indicated, upon the contours of the cranium, the hand, and the general regions of the muscular system in the trunk and limbs. Just as the general temperaments can be read, so can the elements of the temperaments, or disposition, be read. These influences of the mental organs, exerted in the face, are in ratios to each other as proportional strong powers, or as quantity forces moulding the face. These controlling energies are local size influences, modulators of the contours of the face and head. The expressions or gestures of ideas or of transient thoughts or emotions are left to transient expression.

We are dwelling upon these facts and distinctions because,
Contrast Analyses of Michelangelo (a) and Alexander von Humboldt (c). Merton Method.
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for a time, it is difficult for some students of the profession to avoid confusing the gestures of the face they have been accustomed to reading, with the signs of character and vocational ability they have not been accustomed to reading, because these regions have not been located or learned.

The contrast with those modes of mental analysis is here illustrated in order that the student may gain an early insight into the specificness and elaboration possible by the Merton Method.

The face (a) of Michelangelo in mid-maturity and of Humboldt (c) in late age, are illustrations of enormous differences in the mental temperament. Michelangelo's, read by almost any of the other methods, would hardly be classed as a highly intellectual disposition. By the Merton system, his intellect stands out pre-eminently. An observation of his mental analysis graphic line (a-circle line) shows us a markedly dominant perception of Form, and the essential Color, supported by powerful imagination, skillfulness, and slightly less invention, with observation, mental-focus and scrutiny. Only at Industry and at Mobility in the Will does the line again touch 80. The preponderant Form and Color make the sculptor and painter inevitable, the sum total depending upon the organic quality.

The face (c) of Humboldt rises gradually from Form to the dominant Reason, essential Construction, supporting Inspiration, Language, and Memory. Only again at Industry does his graphic mental analysis line (c-triangle line) rise above 80. Here we have another powerful mental temperament, though the Aspirations and the Will are higher and more evenly carried than in the face of Michelangelo.

This is the dominance of the great scientist, essentially a naturalist and natural philosopher. The preponderance of the upper forehead has thrown into low relief the lower regions of the brows and face. Were the top forehead smaller, shorter, sloping back from above the brow regions, we would find the brow regions powerful, the whole end of the nose changed, the upper lip would thin down, and other changes in detail take place.

The second of the three faces (b) would range clearly almost throughout its analysis above 70, balancing closely along 80, and almost evenly through the temperaments.

Note that in the face of Michelangelo, quantity perception falls to just above 70, that calculation falls to 50, that separation perception falls to 45. Note that mental-focus is the
dominant mode of expression of Attention, and imagination that of Construction. No other method of analyzing mental abilities, either express or potential, can make these distinctions, which are prime factors in mental analysis and in the world of vocational accomplishment. These distinctions are shown throughout the whole line.

The Transient Expressions are shown when the face is in motion, when it is making gestures. The Mental Analysis and the Vocational Ability Signs are most easily read when the face is quiescent and calm. The "hills and valleys" of the face tell the story. It is their function and purpose to tell the story of their powers. The fact that these rise above or fall below the average of size of the blended parts of the features is soon clearly seen by the student of the art. The fact that nearly every student remarks, in essence, "I never really saw a face before," shows the difference between general observation and specific reading. But without knowing where to look for the volumes of particular abilities, it would make little difference how much or how closely one studied the face. Knowing where to look for particular indications of faculty powers (as one would look at the geology of states, counties, towns and villages by the physical geography), at once reveals the quantity facts of characteristics, the peculiarities of the mental abilities and aptitudes, and the solution to the combinations of strong faculties that make vocational, social and personal success.

Faculty or Characteristic: Every normal person has all of the faculties possessed by any one. We find that every one sees forms or colors, but the real vocational question is, how well? Every normal person has caution and aggression in some degree; the important question is, what is the proportion of caution to the rest of his faculties? It is utterly useless in vocational work or mental analysis to say, you have caution, you have economy, you are frugal, you can reason, etc., etc., because every one has these faculties to some extent. The vital matter is exactly the matter of proportion and quantity, the fact of variation that is a criterion of the kind of vocational aptitude and power as truly as it is the measure of natural ability. The high quality man may do some vocations wrong for himself better than a low quality man can do the right vocation, but he cannot do it with ease or satisfaction to himself, and often cannot carry on a low quality vocation even in a low quality manner.

Another fact regarding the so-called characteristics is that
they are often an extreme or demerit incident to a particular condition in the life of the individual, or growing out of a combination of conditions, and they disappear when the conditions change, and are not constant mental dispositions or organic faculties.

Specific Abilities the Criterion: Summed up in a paragraph, mental analysis and vocational counsel are parts of this art, are based on the same sciences, and are intended for the analyst to determine the definite kinds and amount of natural and cultivated ability a man has or lacks in the pursuit of his occupation, in all of his social relations and in his executive life. The range of this art and its science elements runs intensively through the Professions, Arts and Sciences, though Businesses and Commercial Enterprises, through the Trades, the Skilled Vocations, and even is valuable in the common labors of mankind. The mental analyst and the counselor is dealing with the mentality of man, out of which these vast occupations grow. The counselor can urge the raising of one power and the lowering or controlling of another; can suggest measures of culture and action required for greater success, can determine the high-line of individual accomplishment and compensation.

Second Phase in Mental Analysis Study: The second step in mental analysis study is to outline the general regions of mental ability influences. These influences blend with each other, but for convenience we give them definite lines, as topographers do the "watersheds," "valley lines," and geological formations of their maps.

General Measurements: In translating the mental influence on the face and body, we need to give a moment's attention to the mass size of the features of the face and their general distances from the external ear opening. In this manner we get a general view of the forward length of the forehead, the vertical length of the nose and the oblique length of the chin. These give a general topography of the face which sometimes aids in rating the specific regions.

The artist Page discovered that an angle of 30 degrees, arising in the auditory meatus, measured the length of the great majority of noses. He also found that this angle measured the nasal angle of nearly all of the mammalian kingdom, that the nose slopes backward as the mentality recedes from high to low forms, and recedes from the Intellect toward the Will or Volitions.

Dr. Arthur Merton discovered and published in 1884 the
FIG. 2—Essentials, copyright, in other forms in 1884, et seq.
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fact that this angle of 30 degrees measures almost as clearly the medium human forehead and medium chin, and that three angles of 30 degrees each span the tophead, three the backhead and three the body regions.

The nasal angle, and the line of the plane of the face (a line passing upward through the base of the nose and cutting the nasal angle), are the most important lines in our study. But we shall depend upon observation rather than upon measured lines in the work of analysis.

The brain retreats as the forehead retreats along the upper line of the nasal angle, and the Intellect, as compared with the Will, lessens in relative proportion. The more oblique the facial line, the more "pugnacious" is the mandible, and the greater the ratio of the Will to the Intellect; the more vertical the facial line, the more predominant is the Intellect.

**General Relations:** As the head widens at the ears, the region of the Sensations grows long and consequently larger, and the body and face are constitutionally heavier than when the head is narrow. The upper line of the nasal angle runs just below the region of Perceptive Sense Culture. As the line of the brows grows long, the regions of the Perceptions and the Retentions grow longer; in such faces the facial line usually cuts off a piece of the brows but none of the upper forehead. When the upper mid-crest of the brows is full, the end of the nose droops toward the lower line of the nasal angle—indicative of a tendency toward scrutinizing attention.

The upper line of the forehead angle runs in the direction of the region of Reflective Culture. As the head lengthens along this line, the end of the nose is modified, and the nervous system increases in relative power.

As the tophead rises along the tophead line—the region of the Aspirations—the facial region above the corners of the mouth fills out. As the upper backhead—the region of Executive power—enlarges, the anatomical angle of the mandible increases in size. As the middle backhead—the region of Defense—enlarges, the opposite nasal angle, in a general way, is extended.

This is an outline of the natural fact that the proportions of the head and face are the constant representatives of all of the mental and physical abilities and faculties, and do not change without being changed by the plenary faculties that control them. The head and face, being representative of the mental powers, carry the indexes of size and potency of those mental powers in the facial and bodily structures in all of their con-
stant and habitual actions and expressions. They only de­
gate transient expressions to particular mobile parts as tran­
sient moods.

Hence, all changes of a constitutional order, whether mental
or physical, must be made in an orderly way, asserting a plastic
and quantity power over the body to compel it to express the
forces controlling it. The head and face sustain their constant
relations in mentality and in the body, both in constant pro­
portions; and, without ever endangering or abandoning the
particular or peculiar activities of their functional spheres, the
mentality still controls the transient expressions of the face,
the hand and the body.

**Scheme of Measurements:** A secondary part of the scheme
of measurements is by observation of the cranium and the size
and outward length of its local regions.

Some faculties located in
the brow regions can be
measured by the length of
nerve fibres from the brain
centers. But these centers can
only be located by an outer
mark of some kind. The cen­
ters of the brain hold a con­
stant relation to the external
ear opening, and this can be
used as the distance key to the
projection of the head for­
ward or backward or upward.

To judge the size of F
(Fig. 3) at the front end of
the triangle, we imagine the
length of the line a from the
ear opening to the inner por­
tion of the brows. When this
line is long, we can rate it
100; it indicates a long, or
large, faculty region. We
can get the same result with
an outside square, as the
angle d-g-F, the reverse of
the imaginary angle b-e-F. The line e gives the direction of
fibre power and force.

When the distance as compared with the rest of the face is
about an average of the facial regions, it is rated at 80%; when
it is quite short, that is, small as noted at the inner angle, we can rate it as 60%. At 100% it may be the Dominant; at 90% it may be an assistant or aid to the dominant.

Moving slightly farther around the forehead, we see the arrow C, the direction of the fibres of the next faculty region. Beyond this, at N, it is better to judge the size by the diameter from one temple region to the other, since it is the width of this region that gives the measure of mental power.

This is the plan of judging all of the radiating directions of the cranial regions. All except the Memory and Language faculties are facial, and it is only necessary to consider the cranial regions as incident to their relative potential power.

This figure gives another view of measurement to F, from the auditory opening A, measuring the length of the forebrow regions. It is seen, from the fact of the frontal sinus, that this region is purely facial, as are the signs or sizes described by it. The double layer of the cranium in the brows does not allow the brain to approach the surface layer of the cranium. One-sixteenth of the mental signs used in this work are cranial; the other fifteen-sixteenths are facial, including those of the brow region of the face. This fact is clearly illustrated in the near following pages.

The Sources of Information: The senses are our sources of information concerning the world around us, and the effects of the things in the world with which we have to deal. Through these senses we receive all of our unelaborated facts, relations and items of our future knowledge.

It is important that we realize the capability in these directions of those we are analyzing and the capability of their gaining and using these mental impressions, sensations or ideas.
In the illustration, the regions outlined include these faculty “territories.” Without the faculties controlling the regions of the Perceptions, as sight, the individual would be blind, he could not see the forms or distances or colors or the numbers of things. These abilities are often spoken of as Perceptions, arising from the sense of sight. We shall later describe how to read these signs in particular, and to measure, by our sight, the proportions of these faculty abilities to other abilities.

Without the faculties controlling the regions of Sensations, the individual would not have the senses of impression or touch, nor those of feeling or hunger appetite, taste or smell. Hence these are included in the mental territories of the senses.

In special studies of the ability regions of the face—properly the face and not the skull—we shall show how each of these senses has its own task that no other sense can perform, but that some of these can carry on parts of the work of other senses. This is illustrated by the fact that we can see the number of objects, and can also feel the number of objects, and can, independently of these, hear about the number of objects that others can see or count. But no one can see flavors or taste colors, or hear forms. Hence, some regions directly aid each other, while the abilities beyond the senses must rely upon some of the senses (as when one reasons or imagines), for their items of facts, etc.

The sense region marked L is the region of Language, sounds, and music, that come to one through the sense of hearing. This and Specific Memory are the only cranial regions we find it necessary to refer to in our mental analysis.

We can clearly call this whole general region the Region of Sense Culture, since the many arts, professions and trades that grow out of these abilities require the particular culture
of some one or more of the senses, and often combine with other faculties.

A number of studies will be given to these specific abilities.

**Regions of Opinions and Judgment:** In this illustration we have outlined the general region of the reasoning, constructing and aspiring faculties. Out of these faculties grow the great sciences, constructions, aesthetics, the study of ethics and the social aspirations. The specific abilities can be clearly read in the face, though the "territories" are relatively small and need not be particularized here. When this region and the one described by the preceding illustration are quite predominant in the individual, they are the cause of what is usually called the Mental or Nervous temperament, because then the Intellect is the strongest of the three general systems. These give predominance to the brain and its nervous system throughout the body.

**Regions of Executive Power and Motive Impulses:** The regions of the Will are the sources of Executive Power, of industrial enterprise, and commercial disposition, and are the immediate stimulants to Personal Defense and Physical Mobility.

This region influences the bridge of the nose, the cheek bones and muscles and the jaw (mandible) bone. It is the chief source of industrial and motive vital dynamics.

This region is not directive. It does not plan or construct or formulate ideas or methods. Instead of this, the Will stimulates, urges, demands action, and has the characteristic of executive conserving and propelling power, in various forms and degrees in its various faculties. Some parts are or become dominantly active in early childhood, others in youth and early maturity. The Will can be stimulated by active social or intellectual desires or intentions. It is directed by the faculties
of the intellect, even when itself the dominant region, because it cannot carry on formulating processes itself, because it cannot carry on the functions that belong to the rest of the mentality.

The Will (or Volitions) because it has the characteristic of being directed by the Intellect, and that of guiding the muscular action, has a strong tendency toward habits, toward automatic actions or repeated forms of action in its lower regions, and toward persistency in intensity and in action in its higher regions. As dynamic powers, it is natural that the Will faculties should influence the larger and more mobile parts of the face and give rise to the sayings, “He set his jaw and went at it,” “He clinched his teeth,” in preparation for a difficult task, or “He had a bulldog jaw.” Sometimes we hear the antithetic, “He had a weak chin,” or “His face lacked determination.” It is obvious that these indications are very general and lacking in specificness or cultural or vocational value; they may apply alike to the pugilist, the horseshoer or the executive.
Concerning Dominance:
When we see the face of a stranger the first flash is the revelation of the general disposition. This general disposition we usually speak of as the temperament.

In this illustration we see the evident fact of a scholarily mental temperament. Note the long, high forehead, the somewhat deepset eyes and the heavy end of the nose. In contrast with these, note the thin cheeks, the narrow jaw, the placid mouth, and the rather delicate chin.

Would anyone reasonably expect that this face could give its attention and energies to a commercial life, to executive management, or to the control of men?

We may safely answer No to these questions. We may reasonably expect to find the indications of a mastery of one of the sciences or the ability to make discoveries or to carry on prolonged technical investigations. Hence we must exclude from our consideration any form of broad and heavy executive vocation and every species of highly social endeavor.
This example of the temperaments makes it necessary to describe them and to dwell a moment on their cause and influences; it makes this necessary because many people think that a mass judgment, or, on the other hand, a judgment of masses of the face or head or body or of the attitudes and expressions can determine specific characteristics or specific vocational abilities. A study of the temperaments will do much in teaching us what can and cannot be read by these means.

**Classes of Mental and Physical Activity:** In order to carry on the necessities of man's life, his mentality must have a wide variety of activities. These we can group, as nature does, into three primary classes, called in general, temperaments.

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<tr>
<th>DOMINANCE:</th>
<th>Intellectual</th>
<th>Affectional</th>
<th>Industrial</th>
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<tbody>
<tr>
<td>Mental Temperaments</td>
<td>Ideational</td>
<td>Social</td>
<td>Volitional</td>
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<tr>
<td>Bodily Temperaments</td>
<td>Nervous</td>
<td>Nutritive</td>
<td>Motive</td>
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When Alexander Walker, in 1839, called the temperaments Mental, Vital and Motive, instead of the old classification of choleric or bilious or lymphatic or sanguine, he was not aware of the general fact that the term Mental in distinction to Vital and Motive, was of a different order. The Vital and Motive are mental temperaments also. The classes could perhaps, better have been named in their natural orders, or groups, as tabled above.

**Proportions in Temperaments:** It should be understood that what is called temperament is the predominance of influence of one class of mental organs over the other classes as a class, but does not mean that all of the faculties of that class, or temperament, are larger than some of the faculties of other classes. The faculties within the temperament may vary much in size and ability.

**The Harmonic Average:** In order that we may read and analyze character and the proportion of mental abilities out of which all characteristics and vocations grow, it is necessary to have in mind a natural basis from which to make comparisons. This natural basis is a harmonic or evenly developed face. In comparison with such an imaginary face, the features and contours of the face being read will show increased or decreased regions, which are rated above or below the average of the signs in that person's face. The student will soon realize that the faculty regions blend into each other without ab-
rupt edges; blend and rise and fall much as the hills and valleys and plains rise and fall under the surveyor's lines. For this reason, the Harmonic Temperament furnishes a mean, or range, of the near to averages. Thus, if the imaginary face could all be rated as 90, the real face might rise to 100 in some parts and fall to 60 at other points. For this purpose we usually choose for comparison the Harmonic Temperament.

The Harmonic Temperament is the blending of the closest possible average of all the three classes and of the faculties. It is one in which the Mental, Social and Volitional faculties are about equally developed, and there is great evenness and roundness in the character and uniform proportions in the bodily structures. The student will soon be able to realize variations from the harmonic or average proportions, and thus determine, without instrumental measurement, the relative size of the local regions, or by comparing the large with the small regions of the same face can make an estimate of the mental faculty abilities.

In Fig. 11, as in Figs. 9 and 10, the temperaments
are very nearly equal and so blended as to make them Harmonic. None of the classes of mental or physical organs is predominant enough to distinguish one class above another. As a whole it is useful in forming a series of high ranging faculties with but few depressed signs, as noted by the wings of the nose, by the parenthesis of the mouth and the moderate septum of the nose.

The Harmonic Temperament, where all are evenly balanced faculties, makes the selection of a specific vocation much less easily determined than where a few faculties stand out in mental relief.

INTELLECT DOMINANT.

The Mental and Nervous Temperament: Where the intellect is the strongest of the three, it gives the cast of a Mental Temperament. The intellect is sympathetic with the nervous system and it directs the body in all of its activities. But it predisposes to the dominance of the nervous system and to an intellectual life, away from the executive and commercial life work, and from the vital or fleshy body condition.

The Mental Temperament is usually noted by the forehead extending long before the ear openings and somewhat high above the brows; it may be either narrow, medium or wide. It does not follow that a man with this temperament will be intellectual or brilliant or unusual in attainment; he may be only relatively intellectual. There are many long headed dunces, because they have not tried to store much mental material or elaborated many thinking products from the materials they do acquire; there may be a good deal of pith in their mental timber. In mentality the ability criterion is quality, for quality is the “exponent” of the whole. It may
sound like an "Irish bull" to say that there are a great many more men below the average than above it.

We shall intentionally avoid specific indications or more specific descriptions and definitions in this treatment of the temperaments, than the indications of temperaments and general disposition themselves reveal. The limitation of the mass indications is a part of the subject matter of this particular study.

Let us make a formal statement of what the Intellect does in its mass action, both in the mentality and in the body:

**THE INTELLECT IS FORMAL; IT RECEIVES INFORMATION FROM ALL OF THE SENSES AND ORGANIZES THAT INFORMATION INTO THOUGHT, DIRECTIVE KNOWLEDGE AND INTENTIONAL CHOICE; IT RESPONDS TO THE NERVOUS SYSTEM AND CREATES THE MENTAL TEMPERAMENT IN THE MENTALITY AND THE NERVOUS SYSTEM IN THE BODY.**

It is plain that, in the action of the Intellect, alone, nothing is done except to KNOW, to PLAN, and to CHOOSE what one intends to do. There are enjoyments in some forms of intellectual efforts; such effort is natural to this temperament, and for this reason such vocations as the arts and the sciences, the learned professions generally and many light labor trades, are much more readily mastered and carried on by those of mental temperament than by those of any other, or even combination of other temperaments. The chief incentives to doing, to action, are aroused in other parts of the mentality.

This mental dominance illustrates the Mental (intellectual) Temperament. The forehead is long and evenly balanced, the bridge of the nose is average, but the end of the nose is large and well modeled. The brows are calm and full. The long
forehead is the source of the large end of the nose and its well modeled and well cut contours, and also of the full upper lip along the margin.

It is noticeable that the cheeks are thin and the mandible is delicate, especially in the chin and in the angle of the jaw. Fig. 12 is intelligent but non-dynamic and non-executive. The absence of full vitality or a strong muscular system is apparent.

Fig. 13 has a Mental Temperament but with several powerful executive faculties thown in for dynamic measure. The forehead is extremely high, wide and long from the auditory opening. The eyes are fairly deepset, the end of the nose uncommonly long, broad and forward, the alae, or wings, are wide and thick, the septum hangs low.

The negative parts of this face are the long, thin mouth, the thin hollow lower-cheeks, the face too short from the nose downward. Instead of being one-third, the region from the nose down is scarcely three-tenths the length of the face. The face in general is cold, calculating, intensely honest, far-seeing and keen as a Damascus blade, and still it would be both folly and a hardship for any one with these characteristics and faculties to take up a commercial or commercially executive life.

Fig. 14 clearly indicates that the whole organism lacks somewhat in nutritive vitality and in muscular ruggedness, though not severely so. It has an unusual Mental Temperament, one in which the region of Sense reception and culture is extreme, extending far in front of the ears. The heavy brows almost deform the forehead, which seems to step back like foothills, as it rises, the forehead gaining breadth at its sides.
But this face is supported by a narrow though long mandible, giving it muscular endurance, mobility, the power of physical execution. In these respects it verges upon a mixed mental and volitional disposition, with the motive system nearly as strong as is the nervous.

But this face lacks vitality of a nutritive and social kind; the cheeks are hollow and devoid of tension, the regions around the mouth are shallow and carelessly modeled, the adipose and lymphatic regions around the eyes are hollow, careworn, and indicate a lack of digestive tonicity. The bridge of the nose sways in and barely sustains the self supporting elements of the mentality. Only an enormous love for and vision of the Arts and of descriptive literature could keep this mentality intensely at work.

From 1805 to 1855 Humboldt stood out as undoubtedly the greatest mind of that period. In breadth of erudition, in profundity of thought, in massive suggestion, and in ultimate effect upon the industrial and scientific world, few men have equalled Alexander von Humboldt. Visas of the Hindus, Confucius of the Chinese, Aristotle of the Greeks, Julius Caesar of the Romans, Napoleon of the French, Lincoln of the Americans, may compare in their various ways with Humboldt.

In this face of Humboldt the Mental Temperament stands out in great distinction, far different in its regional prominence from the dominance of Michelangelo. The enormous forehead regions of Reflection and Culture can hardly express themselves in the nose and in the upper lip.

The upper forehead is so large and long from the auditory opening that the full brows still seem only moderate in power until one covers the forehead above them.
The nose is fairly long and unusually broad at the end; it completely fills the nasal angle, yet the extreme forehead shortens the length of the nose to one-fourth of the whole, instead of the normal one-third.

Compare this scientific face of Humboldt with the face of Michelangelo, one the master of Reflection, the other the master of Perception; the contrast is great, yet each has a decided mental temperament.

Temperamental liability to various diseases is not by any means constant; nevertheless, there are predispositions resulting from the extremes of temperament, some of which we may note, either as arising from deficient control of local bodily regions or from excessive activity of certain regions.

In general, a person having a strongly predominant Mental Temperament should guard favorably his nutritive and digestive system. This caution is due to the fact that the mental and general nervous activities usually exhaust more than their share of mental energy and bodily vigor.

When this is the case, one or more of the organs of digestion, absorption or of elimination may not be able to carry on its or their proportion of work. Thus the chief liabilities from local deficiency of nerve control are the chronic conditions of anemia, biliousness, liver or intestinal colic, intestinal auto toxemia, constipation, dyspepsia, chronic nervous exhaustion, intestinal fevers and gastric acidity. Some of the over-exhausted nerve troubles are nervelessness, neurasthenic rheumatism, eye-strain, frontal headaches and vertigo.

**AFFECTIONS DOMINANT**

**The Social and Vital Temperament:** The Affections create the degree of Vital Temperament, because their energies are
in sympathy with and partly control the vital organs of nutrition, including digestion, circulation, and the elimination of waste materials.

When the Affections are the strongest of the three classes of mental faculties, they broaden and intensify the feelings, the attractions of the sexes and the emotions of family life.

In the activities of the Affections are formed the desires which are the enormous incentives to knowing and planning, as incentives to the continued life of the body, to the enjoy­ments of the mutual relations of the family, and to the pleasurable relations of society.

They increase the appetites, sensibility to odors and flavors, and the volume of nutritive vitality, heat and fleshiness of the body.

If the predominance extends to the higher regions of the affections, it includes intensity of the religious aspirations and has a sustaining effect upon the heart and circulatory systems, compensating in this way for the extra burden thrown upon these organs by the increase of bodily weight and adipose tissues.

In this powerful face we have an illustration of the Social Temperament, a Vital with a closely following Mental, that is highly gov­erned by a broad and reflective intellect. The lower sidehead is very broad, 6½ inches; the side of the face is full and deep from cheek to cheek, indicating great nutritive absorptive power. The regions around the mouth are full and have un­common tension for a large face.

The end of the nose and the lower regions of the forehead are large, highly modeled and expressive, thus indicating the part played by the intellect as the second in class power and bespeaking an active in-
tellectual life trending away from business or industrial pursuits and toward the exercise of social and scientific professions.

The general trend toward great verbal, memorizing, reflective and political abilities is clearly seen, but these are genial and popular and utilitarian, much unlike the mental and physical non-protective attitudes of earlier described Mental Temperaments.

In this face the negative regions are less marked, but present in the bridge of the nose and in the regions around the chin. The backhead is broad but relatively short. It inclines downward from a moderate crown region to a full neck.

The tophead is high, as shown in the upper lip, and the support to the heart and arterial systems is a powerful one, in combating the requirements of the heavy body and active digestive organs.

We can make a formal statement of the class of faculties from which the Social or Vital Temperament arises, as: THE AFFECTIONS ARE STATIC AND ATTRACTIVE; THEY HOLD THE BODY AND THE FAMILY AND SOCIETY IN ORGANIZED RELATIONS.

The Social Temperament seems to be less subject to chronic diseases than is the Mental, due in part to the constitutional vigor it gives, and in part to the generally more moderate physical activity. But this temperament is undoubtedly at a disadvantage in relation to the acute diseases. The chronic liabilities are enteritis, hepatic cirrhosis, asthma, obesity, and similar disturbances.

THE WILL, OR VOLITIONS, DOMINANT

The Foundation of the Executive and Motive Temperament: In the activities of the Will the individual externalizes his knowledge and his desires. It is the Will, or Volitions, that seek material products and results, that enforce the purposes of the whole personality. It has personal and impersonal impulses, propels individual and mass actions, congregates results as the Intellect congregates information and judgments, thought and ideas.

The dynamic Will, under the direction of the Intellect,
manifests the use of bodily energy, the use of executive social power, and the use of property for the satisfaction of the mental affections and the feelings and needs of the individual. It is evident that the body and the family and society and the state form the joint pivots around which balance the efforts of all of man's capabilities.

From wherever arise the incentives to action, there must be exerted, to gratify them, some modification of outward things. It is the function of the Will to answer these incentives, hence it has the executive powers back of the various forms of executive life, labor, the industries, business, and the muscular powers of bodily action.

All occupations grow out of some specific faculty of the Intellect or of the Affections, and must generally be directly aided and supported by one or more strong intellectual faculties. To be well balanced, in addition to the intellectual faculties there is always required one or more strong, or fairly strong, faculties of the Will.

Thus the balance of power varies with the needs of nearly every distinctive vocation, both in the directive abilities of the Intellect and in the executive abilities of the Will. It is this variation in the vocation and in the mental ability of the individual that makes one vocation more desired than another, that gives more success in one vocation than in any other, that makes a man more congenial to some people than to others.

If broad generalizations could determine personal aptitude in social relations or in vocational choice or success, all that would be needed to determine these facts would be to classify the dozen or so generalizations and their occupations, any one of a class answering as poorly as any other.

The Executive and Motive Temperament: The Executive and Motive Temperament is a result of the predominance of the Will faculties and their effect upon the muscular and bony structures. The Will faculties may properly be called the Volitions, because they are dynamic, or executive, in nature. However, much as we may speak of the powers of the Will, it is not in itself plenary in the thoughts and acts of men; it stimulates, executes, and creates incentives and purposes, but the methods and manner by and in which these shall be gratified or carried out, rest in the Intellect, in its information and knowledge, and often in its sole directive choice.
In this face we see a Motive Temperament, with the Mental and Vital so closely balanced with it, that a decision as to which is most powerful is not readily made.

The head is wide, the body solid and heavy, the modeling clear, keen, and attesting very fine quality.

The wide forehead and end of the nose rate the Intellect intense and close to a dominance; the broad, solid and powerful mandible and the maxillary regions of the upper cheek are evidences of a powerful dynamic and motive range of faculties.

From these general regions it is clearly seen that this face is that of a severely practical executive, so evenly balanced in temperament that a more extended analysis will be necessary to determine the particular vocational trend. This is an apt illustration of the rule that the temperament cannot determine even the general vocational trend, that one must appeal to the faculties and even to their subfaculties, all of which can be determined.

Fig. 18 can be described as of the same temperament. It has the wide head, the high nose, the heavy jaw and cheek. Yet there are differences in the vocational abilities shown by the faces of the two men that make success impossible to both in the same vocation. This forehead is longer than that of the last face, but the face is also longer and the head relatively as wide just above the ears. A compromise of the three temperaments thus holds a balance very nearly as complete as in the former face. In details of local regions the difference is at once noticeable, as seen in the wings and end of the nose, in the angle of the jaw, the parentheses and the contours of the mouth.

The physical response to this mentality is that of a fairly heavy body, round muscles, powerful lungs, heart, and general digestive system.
In Fig. 19 we see a clear Motive Temperament, supported by a powerful intellect. The Vital Temperament is somewhat secondary to the other dominants. The head is long from the ear openings, it is broad through the forehead, the nose and brows are large and heavy. The face from the brow line down, however, is dominant. The nose is fairly high and well banked up on the sides; the parenthesis of the mouth is broad (but not high); the angle and the end of the jaw are large, firm, broad and highly modeled, indicating a powerful executive mentality, protect-
ed at nearly every point by forceful faculties, and supported by the broad, intensive intellect.

In Fig. 20 we see a dominant Motive Temperament, although the Mental and the Vital are almost equal in power. It verges closely upon the Harmonic, which would be the case, were the separate faculties of the different classes more evenly developed.

The powerful brows, the high and large nose, the wide head and full mouth region, the heavy side face and powerful mandible, take this face out of the Harmonic class, even though the tem-
peraments are quite evenly balanced.

It would be difficult for generalizers to classify this mentality even by general classes.

The physical constitution is powerful and enduring; the heart and lungs well governed, with tough tissues; the digestive system ranks next in sustained action, and the organs of elimination third, as classes of organs. Of the sense organs the eyes are powerful, the hearing most likely to be depressed in early old age.

Fig. 21 is long from the brows down and is rather thin, the cheek bones are clear and marked, the Roman nose is long and highly chiseled, the mandible is somewhat narrow, proportionally, and is long in the chin region; the backhead is quite long.

From this face it is easy to read that the bony structures have long processes and that the muscles are flexible, fine lined and mobile. The face indicates an almost pure dynamic Executive Temperament with an accompanying strong motive system.

The Intellect is high in the verbal and music region and in the mimetic art regions, in the perceptions of
beauty and rhythmic motions. It is a face that sees and feels keenly, that realizes the passions of life and severity, the depression of the aspirations and the intrusive gestures of life's tragedies.

**SPECIAL NOTICE CONCERNING QUESTIONS AND ANSWERS**

The answers to the questions throughout this course are intended to perform a double purpose, namely: they are intended for a brief review of the lesson; they are intended to be a key to the counselor's advice to his patron, to afford a concise statement of instruction when giving advice. This use is particularly noted in the matter of definitions, as illustrated by the question, "What are the great divisions of Form perception?" The answer can be turned into the instruction, "You should cultivate the recognition of space and its quantity relations," etc. Many such instances occur throughout these lessons. The counselor must learn how to counsel as well as how to read the signs and vocational aptitudes.

Much of the descriptive parts of these studies concerning mental concepts, products and relations of the faculties, can be used by the vocational counselor and the employment manager as a basis of instruction or advice.

**A RECONSIDERATION of the CHIEF SOURCE OF MENTAL ANALYSIS through QUESTIONS AND ANSWERS**

**Question:** What are the different forms of expression that the face may have?

**Answer:** Three: The quantitative form due to constant mental influences; the transitive form due to conscious temporary expressions of intentions, sentiments, emotions, or impulses; and the hypocritical or mimetic form, due to imitating, consciously or desiredly, a genuine temporary expression.

**Question:** When are these different forms of expression apt to be similar in two persons?

**Answer:** In the first form, when the constant influences are practically in the same proportion; in the second and third forms, when the intentions, sentiments, emotions, or
impulses are similar, as in expressions of sarcasm, scorn, the smile, or astonishment.

**Question:** To what influences are the great varieties of transient forms of the face due?

**Answer:** To the intensive play of consciously directed mental forces, sometimes of a single characteristic quality, and sometimes of stimulated or habitual groups of impulses, as in hate, mimicry or gratitude.

**Question:** Do the constant forces of the same functions play upon the same regions in the faces of every individual of the race?

**Answer:** The necessities of growth, control and expression demand that the same kind of influences shall act upon the same physical regions in every individual.

**Question:** How can the mental regions of influence be determined?

**Answer:** By comparing the ratios of known mental abilities, as found by their thoughts and actions, with the ratios of the size of quantitative forms of physical regions and contours.

**Question:** What direct evidence of local regional control and of specific mental influence can be cited to prove this conclusion?

**Answer:** The same mental ability dominant in the mentalities of a hundred people will dominantly develop the same region in all of their faces.

**Question:** What natural fact has militated against the recognition of the truth of the above answer?

**Answer:** The fact that a dominant mental ability in a low quality man is often far from being equal to the lowest power ability in a high quality man; the accomplishments of the two men in a particular line may be about equal.

**Question:** What other fact against the recognition of specific mental influences does history give?

**Answer:** That lack of opportunity may force great mentalities to work at small problems, accomplish small results and fail to get recognition. The abbot, Mendel, had a small garden, a small pea patch, a small reputation as a gardener and naturalist, and a small mentality—until some one found a small pamphlet long after he was dead.
LESSON TWO

The Regional Influence and Products of Form

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by
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The student should compare the size of each faculty region with the size of the other regions of the face and learn to judge its relative or percentage power. This comparison and study can be made without considering the specific nature or location of the other faculties not yet reached in the course. The study of each region should be continued in connection with the description of the nature of the faculty and of its typical vocations. Comparing the size, or the percentage power, of each faculty region with the size of the other faculty regions of the face is the basis of vocational reading and of mental analysis. Learn to locate
and describe one faculty at a time; frequently review in an orderly way the faculties previously studied, in order to impress on the memory the regions and the vocational products of the faculties. MASTER ONE REGION AT A TIME—its RELATIVE SIZE, its NATURE AND ABILITIES, and its TYPICAL OR CHIEF VOCATIONS.

The soft and flexible parts of the face respond to the bony structures, which furnish them origins and support. All parts are under the same co-ordinating mental influences, and all parts work together to form an organism for the EXPRESSION OF THE CONSTANT MENTAL ACTIVITIES, and, likewise, for the temporary expression of transient desires and impulses.

The senses of sight and hearing are intellectual, and are a part of the Mental temperament. Vocational Analysis properly begins with these senses, since these are the chief sources of information and of its fact reception. For convenience of location, we may say that the faculties of the sense of sight influence the immediate crest from the bottom of the valley between the nose and the forehead across the brow above the eyes, extending about one-fifth of the way up the forehead and around the outer corner of the eye.

**Historical Evidences of Form Ability Location:** In a study of the ascent of the human face during man's historical growth and in the study of Constant and Temporary Mental Influences, we find irrefutable evidences of the frontal location of Form ability: The comparative lengths of the upper nasal angle of different branches of the race, variations being in accordance with the dominance of Object and Motion Form faculty in their mentalities; the markedly protruding brows of men who are highly endowed with Form ability as compared with their other intellectual abilities, as demonstrated in their mechanical or art work; and the full development of this region, as compared with other regions, in the early elements of the race and the tribes of the race whose physical and self protecting needs necessitated intense and frequent scrutiny of objects and motions on their part.

**Specific Location of Form Influence:** The facial region of the faculty of Form, the faculty that sees forms and motions, is in the mid-section of the first, or lowest, tier—the brow tier—of the forehead. It extends from the middle of this part of the forehead around the eyebrow to about the middle of the eyebrow, or to a point over the inside line of the iris of the eye when the eye is looking directly forward.
This region is purely facial. It is somewhat separated from the brain case—cranium—by a frontal sinus, or hollow, and these contours are formed by mental influences playing over them, just as the bones of the nose, cheek and mandible are formed.

In this face the frontal sinus (F) is shown separating the cranial case and brain from the immediate region of facial expression in the brows; it also shows the Antrum of Highmore (A H) in the malar bone, and the hollows beneath on the body of the superior maxilla.

All of these regions of expression are truly facial and their structures and contours, with the contours over them, are expressions of characteristic mental influence. This fact is clearly shown in the equally exacting facial story of the characteristics and intellectual ability ratios of the faces in Fig. 24 of various human and anthropoid grades.

**Great Divisions of Form Activity:** One of the divisions of Form ability is the recognition of space relations, clearly, object-form, the ability to see and remember the forms and the relations of quantities and sizes to each other. This ability to recognize and remember...
accomplishment, besides saving energy, time and supervision. The chief industrial problems of the world are those of saving useless, common effort and turning it into utility work.

Another division, as a part of object-form and a part of motion-form, is the perception of perspective. Perspective is the essential central fact in the recognition of distances. No other ability gives such a clear and definite idea of distance as does Form ability. The sense of touch only gives the idea of distances which are within one’s reach; such limited space relations is of great value in nearly all of the mechanical arts and trades, and in many of the simpler vocations, as when it saves the ditch digger square yards of dirt because his lines are true and no more is thrown out than is necessary, or when the farmer plows a true furrow, or the planer-man in the shop shaves true to the required level. In the use of the micrometer, the spirit level, the leveling machine, in the commoner use of carpenter’s tools, in the thousands of dexterous operations where the “hand and eye” must play true to each other, this ability to see shape and space quantities and relations is a factor of good work and easy accom-
appreciation of distance is of small value for self-protection or in vocational effort. The sense of sound is of relatively little use as a distance meter.

Another division of Form ability is the perception of motions. We read this as motion-form ability, or the recognition of the path taken by objects in motion. The recognition of the movements of objects and of their directions is of much value in nearly all the acts of life, and, vocationally, it is of enormous importance in many industries in two ways: It is a leading factor in rapid and accurate accomplishment, and it safeguards the worker by giving a visual forewarning of danger.

Thus the ball player moves his hand into the imaginary path of the moving ball, the mechanic catches with ease the pitched tool or the moving lever, one readily moves just outside the range of the swinging crane.

In the thousands of cases of automatic machine devices and piece-work apparatus, the observation of exact motions in both time and place is of great value. In many operative vocations motion-form sight is of great vocational value, and has protective values against accident and injury.

Individuality: Individuality is the subfaculty of Form that notices the peculiarities, unlikenesses and contrasts of the forms of objects or of motions, when in general respects the objects or motions are somewhat alike. Thus objects or motions may be alike in shape but differ in size; they may be peculiar to one place or thing but not to another; they may be unusual of their kind. An elaborate definition will be seen in the table of Tentative Analysis of Form Concepts.

Individuality is of much importance in a great many vocations where noticing the variations from the usual, the orderly, the habitual or the expected object or method or action is of value or interest.

Methods of Judging Form Size: The methods of judging the size of the faculty of Form in its comparison with other faculties are comparatively simple to the trained eye. But in these earlier studies we may well give a little effort to the principles of facial measurement, in order to facilitate the observation of differences in the sizes of faculty signs. These methods will be recurred to from time to time in instances where the visible measurements are not as readily made as in general practice. The focus of all length measurements is the ear opening (auditory meatus) as the key to the mental centers of the brain, and the vital centers of facial control.
In this figure we have cut away the larger part of the brain (showing the brain centers) and drawn a triangle of an imaginary internal line of measurement from the ear opening forward to the sign of Form on the left side of the face, just back of the letter F. The longer the triangle b-e-a from the ear opening to the surface back of F, in proportion to other distances, the larger the faculty.

The Nature of Form Ability: Form is the ability by which we see and remember the shape, outline, contour, individuality, and the visible motions of objects or of their parts. An object, or thing, cannot exist without having form as one of its properties; the form of a thing relates to every element of its length, breadth and thickness, to its distances from other things, to its motions, and to its appearance in perspective and in size, and, in a measure, to its roughness, smoothness and density.

It is thus evident that Form is the ability that enables one to recognize places, quantities, masses, and the relationships of places; that it is the chief faculty in dealing with perspective; that it makes us conscious of the moving of objects and of their direction, and thus furnishes the other faculties with vast amounts of information for use in nearly all of the actions of life.

A dominant faculty of Form has not only greater relative capability for large accumulation of information of potential use than has a relatively moderate faculty, but it becomes also the source of keen and enduring interest in work related to its own kind of ability, an interest that spurs on to that kind of vocational success. (For five page extended description of the faculty of Form, see "How to Choose the Right Vocation."* )

* Holmes W. Merton, M.D., Funk & Wagnalls, New York.
General Scheme of Analysis Tables: The tables through this course are believed by us to be by far the most elaborate tables in print upon any subject, and are based upon the plan of specific succession of meanings. The subdivision by three has proved to be, with few exceptions in the universal analysis, the true analytical number.

These tables must necessarily be tentative until greater time and thought can be given to them, or until greater definiteness in knowledge and in the meanings of words is established. This tabulation of the subject matter has seemed to us to be the best method of synoptical treatment, grouping in their most natural and convenient form, in the order of their size in meaning or in the order of their subdivisions in relationships, the fundamental concepts of knowledge or of industries or products.

The student should bear the following facts in mind while studying the tables throughout this course.

The tentative analysis of mental concepts carries the general scheme of the mental faculty as the first term of the table, as Form (ability). The second division is the subfaculty, the relative size of which can also be read in the face. In the table of Form these subfaculty signs are of object-form, motion-form, and individuality, as elsewhere described. When one sees an object's form, he sees the bound, surface and degree of angular or curved contours. Bound includes the idea of outline, inclosure and terminus. Inclosure includes the top, sides and base of the thing known. It is seen that the word "limit" growing out of the ability to recognize object forms, includes forty words in the order of their relationship. The same fact is true of the subfaculties motion-form and individuality.

The counselor may not need to use a large part of the one hundred and twenty words defining the conceptions of Form. Yet often the artist or the general designer, in the practice of his art, will actually experience the use of the facts expressed by possibly every one of the one hundred and twenty words.

Besides the tables of Mental Concepts there are tentative tables of mental products and of industries and of vocational products not always classified as industries, as of the arts, sciences, social life; and other tables showing the Will faculties as purposes or intentions or powers.

The tables are often followed by a column of vocations arising from the particular faculty under consideration and
of which the faculty is either a dominant out of which the vocation arises, or an important aid to the vocation in the order of its statement. Thus in the sculptor, Form is the dominant, closely followed by the subfaculty imagination of Construction, by Inspiration, and then by dexterity.

By adding the word “ability” after the analysis terms, the tables are sufficiently explained. In some of the tables only the dominant is given, but several other faculties are included when necessary in the lists in “How To Choose the Right Vocation.”

**Form Properties and Relations:** One of the main necessities of the vocational counselor is to observe the subject’s ability to see and to gain a knowledge of the greater number of the vocational requirements which are tied up in understanding the visible properties and the relations of THINGS. As an illustration of the mental relations of the vocational abilities, high Construction ability must not be credited to a man, even though his indexes of Construction per se are good, if there are evidences that he is capable of only a low perception of the necessary mental tools—as forms, shapes, and numbers (see analytical tables of Form and Number)— or that he is not capable of gaining a wide knowledge of the vocation’s requirements and their relationships.

It is self evident that the better a vocational counselor himself understands the different vocational requirements and their relationships, the easier and more trustworthy will be his observation of another person’s ability to acquire the necessary knowledge of them.

**Casual and Fundamental Recognition of Properties:** In our common experience we get more or less knowledge of these properties of things without our having formal recognition of them. This lack of formal recognition of these properties is a vocational loss. We use things constantly without any attempt to recognize their relations. We know, without stopping to consider its properties, as position and size, that in order to get from one side of a stone wall to the other side, we must either climb over the wall or tear it out of our way. Its angle, direction, weight, roughness, use, composition and other conditions may leave little impression on our mentality; in the future its facts may be but a hazy recollection of little value.

In any of the arts or trades or sciences in which one may be interested, the trend of the study or work forces upon one the recognition of some of the common properties of forms, such
as space, place, size, shape and parts. But a lack of careful observation and recognition of the inherent properties of the things used in one’s vocation, of their weight, density, color, hardness and other qualities, is often, in the last analysis, the cause of a man’s inefficiency or failure in that vocation. Moreover a broad knowledge of the properties of the things which are employed, directly or indirectly, in any specific vocation enables one more easily and readily to master the requirements of that vocation.

Thus in many of the Form arts and trades the academic mastery of geometry and trigonometry—which are Form studies, though usually spoken of as arithmetical—and of algebra, which is a combination of Form and Number study, is of great value in saving time, errors and worry. Yet few apprentices or journeymen in the Form arts or trades ever devote time to the study of geometry, algebra or trigonometry. Only where absolutely required, do many study these and their relations to design, drawing, ornamentation or esthetics.

The vocational counselor should advise the study of those branches of knowledge that contribute to success in any vocation recommended.

Points of Interest: A part of the organic activity of each faculty is to accumulate different energies that have similarities to one another; for instance, those energies of light which are accumulated by the faculty of Form or of Color have similarities of nature that are distinct from the nature of all other energies. In a general way the climaxes of those similarities that are most attractive to each particular faculty can be distinguished as points of interest. These points of interest, by the fact that they make the deepest impression on the mentality, are great aids to recollection, and, being attractive in their nature, furnish the mentality with a local incentive to accumulate sense impressions for the use of successive faculties in the mental processes.

Because the mental processes are themselves organic, it naturally follows that the organic, or living, forms of nature have the greatest number of sympathetic points of interest for the faculty of Form and for its closely related faculties, Reason and Construction. After organic forms come the inorganic forms of nature which take precedence over conventional and artificial forms in being useful and satisfying to Construction and to Reason in the realm of physics; an added
incentive of commercial utility, however, is generally required to hold these inorganic forms vividly in memory.

A simple illustration shows the radical difference in the attractiveness of the organic and the inorganic forms: No skilfully executed designs made of straight lines and their angles can compare in artistic beauty with even much less elaborate designs of curves produced by a geometric lathe.

Nearly all the higher grades of conventional design have organic lines—the ellipse, parabola, cycloid and catenary involute—interpolated; thus, fylfots and frets, which are used chiefly as symbols of structure, must be blended with trefoils and quatrefoils in order to make them symbols of beauty or to give them attractive interest.

**Intensified Form Ability:** Fig. 30 represents two faces which have the faculty of Form extremely large and highly intensified.

Face a is that of Auguste Rodin, who is generally conceded to be the greatest modern sculptor, while by some art authorities he is called the greatest sculptor since Michelangelo. His right to such recognition rests in three things, as clearly shown in his face: First, in the perfection of his Form ability; second, in his imaginative Construction ability, a product of which is his daring and marvellous originality in creating an intimate background, full of related vigor, for many of his sculptured figures, such as "Life" and "Pygmalion and Galatea"; and, third, in his
absolute fidelity to "character and expression," which, as he says in his own work, "is the essential truth of any natural object." Again he says, "The only thing is to see." (Sight—Form ability), and again, "The unswerving directness of the great artist's observation searches out the hidden meaning of all things."

It would be difficult to find works that were a higher expression of Form-seeing and Form-modeling than Rodin's "The Thinker," "Adam and Eve," and parts of his great work, "The Gates of Hell."

In Rodin's remarkable face with its ponderous forehead, resting upon a powerful forebrow and supporting a nose so great as almost to seem deformed by its intensity of expression, one sees all the requisites of a mentality for the production of a great "black and white art."

**Extreme Retentive Form**: From the high art-Form of face a, Fig 30, we turn to face b on the same chart. This face presents another phase of intense power in the faculty of Form. This dominant Form faculty is drafted away from an art career or a mechanical career by a mass combination of abilities in the Will, as indicated in the cheeks and jaws. It is certain, however, in spite of the aggregate power of the Will faculties, that this Form faculty with its extraordinary retentive capacity is used in a profession of observation. It is the face of a very celebrated secret service man.

Even a casual glance reveals that these brows are loaded down with efforts to see and to retain forms and form resemblances. They have the cast of being full of images to the point of weariness.

There is much of the surgeon's perception in these brow indexes, but, as later lessons will demonstrate, this perception is not supported by the strong faculties that are necessary to attain eminence in that profession.

**High Form Ability**: The higher the degree of a dominant faculty, the more capable it is of wide variation of interest and application; thus, a high degree faculty is fortified, at the very outset, in its effort to gain accumulations of the mental means of work and method in a given vocation. Where small Form ability might find interest only in the general contours of things and in the mass motions of objects, large Form ability would find interest in the perfection of polygons, in the perspective of tetragons, or in the matched perfection of bevel gears, or in the beautiful outlines of thousands of natural and artificial objects.
A high dominant faculty of Form has not only the capacity for large accumulation of form images as materials for future use, but it is also the source of keen and enduring interest in work related to its own exercise—interest that spurs one on to vocational success. In many trades and branches of skilled and common industry large Form is highly essential for accuracy and efficiency. These qualities of workmanship are not confined to the fine arts nor to the technical branches of the sciences.

In face a, Fig. 31, is seen the accented index of a very large object-form ability; the central third of the brows forms a keystone-like fullness and stands almost plumb with the forehead and nose. This is the face of a celebrated sculptor, noted for the idealistic elements of his work, for artistry in contours and expression, and for his non-egotistic attitude toward his work.

Face b has a similar keystone frontal bone, broad, and indicating more specific tendencies in matters of minutiae. This forehead retreats from the brows. It is also very attentive and watchful, in sympathy with the large caution and aggressiveness seen in the face.

In face c, the signs of Form are large, but different in their nature; these are motion-form, the observer's faculty signs, those that prefer to see change and variety, prefer to avoid the slow intensive measuring observation of the sculptor or the delicate lines and graded shadings of the engraver's work. These are important distinctions in
vocational analysis. Many vocations, we shall find, are prohibitive to one or another of the various indications of the faculties that are most interested. The machine operator has not the time to give to the slow modeling of contours, nor can the portrait artist or the plate engraver ever expect to move rapidly over the expressive surfaces of his work.

In face d, there is a combination of the signs read in a and c, of object-form and of motion-form. This is the face of a painter, more commended for his likenesses of fleeting characteristic expressions than for the absolutism of his colors or profundity of his moods.

Form Industries and Arts: From Form ability arise a larger number and a greater variety of industries than from any other faculty. Form is also the mental ability from which spring many of the arts, as sculpture, designing, engraving, graphics, and many furnishing arts. Before verbal description in the realm of ideality can easily become highly representative, the imaginative part of Construction must usually call on Form to give shape and habit of action to the objects about to be described; thus, Form ability aids in making the scene, in visualizing the play of constructive elements, and in making it possible to describe, as a whole, the combination of fragments gathered from various sources.

A number of vocations, as drafting and penmanship, require this one faculty only to be prominent, although other faculties strongly or fairly well developed may be necessary for remunerative success.

We have many eminent historical examples of men having high quality and the faculty of Form large and dominant, who have been great artists, but having small executive faculties they woefully failed to reap more than very common benefits from their work. Others, who lacked Construction and Number, tried architecture and other forms of construction work and utterly failed. Other men, as instanced by Da Vinci, with Form well supported by Number, Construction, Color, and the Executives not only succeeded in the great fine arts, but designed and supervised the execution of great buildings, architectural masterpieces and mechanical construction.

The greater mass of the Form arts are parts of practical trades, mechanics and of the crafts of manufacturing. It is an essential problem of industry that the Form arts should be highly developed in as great a number of artisans and skilled workers as time and the prices of products will warrant.
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**FIG. 33**
It is also true that the more artistic and skilled the artisan, the greater his output. The man who has dominant Form easily outdoes the man who has only a moderate faculty.

Much of the manufactured goods that could be made in an artistic manner and have the attractive qualities of true artistic merit, are but gaudy in artistic quality however good in utility. The remedy is, in part, in the cultivation of taste and artistic perception in the buyer, but much more so in the honest purpose and the cultivation of artistic perception in the makers.

The artist, the manufacturer and the artisan should combine in the creation of the model and in the manufacture of the product. Whenever an artistic result depends upon the skill and object-form perception of the craftsman, only one having that faculty large should be employed.

The vocational counselor should advise men who are not endowed with large object-form to keep out of the crafts or trades or arts in which it is essential. The vocational counselor should advise those who are rightly endowed with this faculty and secondary faculties to study under trained artists, artisans and designers who know by actual working experience and by familiarity with the technical processes of the particular crafts, how and what to teach of the essentials, the esthetics, the quality of materials, and the means of manufacture, and how to stimulate the craftsman's own art and imagination into doing really good work, so as to avoid superficiality and random effort.

The vocational counselor should also advise his client to study the mechanical needs of his vocation. The problems of commercial arts require mass production, require that the
Form

mechanical elaboration of a work of art, or of the artistic part of a work of common utility, shall often be duplicated a great number of times. In these phases there is supposed to be a great difference between the fine arts and those of manufactured products, as illustrated by the differences between sculpture and the artistic qualities of household fixtures.

Form Faculty Relations: Form unites with Number in the perception of the parts of things, in the perception of the utilities of the symbols of quantities, as of the figures of sums and equations, and of the size ratios and attributes of comparison, as well as in the perception of the relations of number places—as in giving to the second left position of a whole number the maximum value of ninety, and to the sixth left position the maximum value of nine hundred thousand.

Form, aside from its own varied fields of action when it is the dominant faculty of the mentality, as a secondary faculty is most intimately useful to Construction, its chord above—Form, Attention, Inspiration, Reason, and, fifth, Construction. It requires no stretch of imagination to see that all forms of construction are transitions of other forms of things or of their acts. These transitions are the foundation of the production of the greater utilities.

The counselor must notice these relations, particularly in those constructive and mechanical sciences and trades where accuracy and sensibility to contours and structures are demanded, or where in transitions from simple forms complex structures are built up or are interrelated, or in those where there is necessary the accumulations of shape, place and operative details.

In a great majority of Construction dominant professions, industries or trades, Form, or Form with Reason-mechanics, Number-mathematics or arithmetic, is an essential or supporting faculty, in varying degrees of sub-dominance. This is easily seen in the requirements of the naval architect, electrical or mechanical engineer, petrographer, manual trainer, management expert, wood turner, steam fitter, cabinet or furniture maker, china or porcelain maker, and in all monumental and statuary vocations that are not directly from Form dominance.

In the general journeyman trades, the great response of Form in furnishing information to Construction is at once realized. The faculty becomes an essential—a first assistant—to the carpenter, cabinet-maker, bench worker, jeweler, journeyman machinist, tool-maker, lathe hand, the printing
pressman, and in the printer mechanical vocations, and the bookbinding trades where Construction and not Language may be the dominants. In the wood-handling vocations, such as sawyers, inspectors, layers-out and mill carpenters, the faculty of Form or of Number becomes the essential to the dominant.

Form-motion and Attention and Caution-vigilance Relations: It will be noticeable that in the Attention vocations Form often becomes the essential, particularly often in the vocations where Caution must depend upon alert perception and the vivid observation of the movements of tools, machinery, the general activity of objects, or the facts of operative skill or skillfulness. These instances are illustrated by the requirements of the chauffeur, ball-player, railroad engineer and brakeman, and, unless dexterity takes the second place to the dominant, in the mentality of many mill operatives and piece-work machine operatives. The lack of these faculty phases is seen in the reports of accident insurance companies. In the case of the glass-blower, stone dresser, and other vocations where the value of the work depends much upon the skillfulness or skill of handling instead of upon technical measurements or machine perfection, the relation of large Form to Attention is equally important.

Form Trades and their Relations to Fine Arts: From the viewpoint of satisfaction and security or of compensation, the boy and the girl of artistic mentality will do far better to study and apprentice themselves in the art trades than in the fine arts. During the next forty years the art trades are destined to offer greater opportunities than the fine arts will, or than will any of the clerical or salespeople positions. Some of the art trades consist of: Chasers, amalgamators, cartographers, fitters, gold-beaters, gold and silver refiners, rollers, gold-smiths, and silversmiths,
moulders, diamond setters, pearl setters, jeweler's bench workers, die sinkers, lacquerers, enamblers, japanners, decora-
tors, etchers, frosters, gold-platers, inspectors, presshands and ring makers.

Some Form Relations to Language: Through the facts and uses of word-signs, spelling, number-symbols, and steno-
graphic hieroglyphs, Form often takes the second place in many non-imaginative vocations growing out of Language.

Specialized Relations of Form: The above are the most notable instances of Form relations as specific aids, but the vocational counselor will need to be alert for special instances in which the absence of sufficient Form may be the dangerous shallow in the vocational channel. Some of these will be noticed under the various faculties; others are where Form acts as an accumulator of information for the other faculty's use; where latent visioning is extremely important; where motions are seen as bases of action, and where minute visual examination must precede judgment.

Some Comparisons of Form Proportions: Fig. 37 has a series of faces in which Form ranges from 3 to 10 in power.

On face a the region of Form is outlined by a heavy line. The size of the territory faculty influence varies in different faces in regard to both the territorial size and the distance from the ear opening. Both of these factors of measurement must be taken into consideration in relation to the brow regions, although generally the latter element—the length of nerve fibre from the brain centres outward—is more important as an indication of mental power. The power of the faculty increases with the length of the nerve fibre.

Compare the region in the profile of face b with that of face a. Note in face b the transient and careless observation indicated by the unintensified, small, short region of Form. This face could never be a fair designer or mechanic or observer; even good penmanship would be difficult.

In face c Form is fairly observing, but it has little of the artistic quality. The brows are high and arched, but they are thin and hollow underneath. The eyes are full, but they are without scrutinizing contours.

Face e has small Form; its line sinks back from the forehead and face line; and, judging its relation to the eyes, Form should not be rated higher than 45, while in face f it rises to a possible 65.

Face d, Sir Isaac Newton, physicist, mathematician and astronomer, has several prominent regions along the profile line;
the forehead is full forward—and possibly wide; the end of the nose is large; the cheek bone is apparently strong; and the mandible is strong, well carved and low set. In this face the Form region is in competition with these strong regions and must be rated near 85 compared with the maximum, or dominant, 100. While the Form of face d is not nearly the dominant faculty, it is the intense observing faculty of the man who is intent on observing phenomena, on retaining important visions, on remembering symbols and signs, and on visioning numbers and characteristics of objects for the purpose of reflective mental operations.

Faces g and h have large motion-form—the kind that is needed by the hunter, the baseball player, and the machine operative. Many railroad signalmen have this kind of Form. The apex of the region is quite high above the level of the eyes; the nose has no plateau between the brows; the brows appear to be scrutinizing rather than calmly studying objects.

Face i is very similar to g and h, but steadier and more focalized and is surrounded by larger faculties than are faces g and h.

Face j has extremely large Form. It is the Form of a celebrated engraver; it is required in the modeler and the designer; it ranks as 100, with no other faculty nearer than 75. This Form is highly dominant, intense, retentive, and absorbed in the conceptions of the beautiful and in working out these visions. The indication of this powerful faculty is that it will cling to its tasks, even though unrequited, through months or years, if necessary.

Some Typical Vocations Where Form is the Dominant Ability.

Photographer: Photography is a practical art and business requiring a high sense of forms, shadows, and lighting, with the perception of expression, of characteristics, and of personality. Very large object-form. Essential Attention; supporting Sociability, imagination.

Engraver: There are many branches of engraving, as jewelry, wood, copper, zinc, steel, figure and letter engraving, copper roller engraving for cloth and wall paper printing, chart and map engraving, crest, coat-of-arms, monogram, stamp and machine-tool stamp engraving, bond and currency plate engraving, and several other special lines. In many of these branches only small tools are used, and a journeyman can easily advance to proprietorship; but this may require in
addition to large Form, fairly large faculties of Economy, Caution and Defense, and in large plants, much executive ability. Very large object-form. Essential imagination; supporting dexterity, skilfulness, Color.

Draftsman: Draftsmen are employed in many offices and shops where technical construction is planned and in many of the larger industrial plants. Draftsmen frequently command salaries equal to the average salaries of the learned professions. Draftsmen should have a thorough knowledge of projection drawing, perspective drawing, geometry, algebra, steel-square work, and pen-and-ink rendering. Special lines require particular specialization, as architectural drawing, mechanics, history or ornamentation, etc. The mental abilities required are large Form, supporting Number, essential Construction, and Attention.

Pattern Maker: Pattern makers are employed in many industries, as suit, cloak and last making, in machine shops, in model making and glass making industries, in cotton, silk, woolen and worsted mills, in furniture, picture-frame and wood-turning industries, and in the manufacture of jewelry, metal fixtures and ornate objects. In some of these vocations the skilfulness reaches the rank of the great professions, sometimes becoming an industry in itself and in others the basis of industries of which pattern making is a part. There are no blind alleys ahead of the industrious pattern maker. Very large object-form. Essential Number; supporting skilfulness, dexterity, and observation.

Aside from the great number of Form-arts that arise from Form, a large number of industries also arise from Form. Many of these industries directly follow the course of the journeyman Form-arts and vocations by carrying them into the field of manufacturing or of business. In this extension the industrious journeyman, by the exercise of business sagacity—supported by after-hours' courses in accountancy, business administration and commercial economics—may advance to proprietorship.

Merchant Tailoring, Cloak and Suit Manufacturing, Millinery, Blacksmithing: These and other color and non-color art industries require Form as the dominant ability, with the support of Construction ability and of the business abilities.

Dealing in Antiques, Art Casts, Sculpture, Statuary, Artificial Marbles and Scagliola: These require the exercise of artistic perception and the judgment of public appreciation, require knowledge of artistic furnishing and of the proble-
mathematical values usually related to the arts. In these industries Form will require the support of the business abilities. In the manufacturing phases of these industries there may be required a special knowledge of chemical and manufacturing processes arising from Reason and Construction.

Among the typical vocations arising from Form in the nature of professions, are those of the botanist, physiologist, plant economist, landscape artist, and penman. Nearly all of the Form professions require a technical education, and nearly all need the association of supporting abilities.
A RECONSIDERATION
of
THE REGIONAL INFLUENCE AND
PRODUCTS OF FORM
through
QUESTIONS AND ANSWERS.

Question: What are some of the superficial evidences of the regional location of the faculty of Form?
Answer: The various peoples of the earth that have been noted for their acute perception of forms or perspective or design have had relatively long forward, or projecting, central-brow regions.

Question: What low orders of mankind require capable Form sense?
Answer: Those whose physiological and vital necessities demand acute sight, as in hunting or in protecting themselves against danger.

Question: What striking indexes has face a, Fig. 30?
Answer: The appearance of great intensity. The inner third of the brows protrudes markedly forward, so that the forehead slopes from it in all directions, indicating a great predominance in the size and in the intensity of the region of Form over the whole mid-forehead.

Question: If the forehead slopes away so decidedly from the faculty of Form's region, what support has that faculty in the face?
Answer: Construction, the chord of Form, ranges at 90; however, it does not dominate Form.

Question: What two indexes are seen in this face that would lead away from the vocation of painting?
Answer: Lack of high Color ability—it is only at 70—and a Number ability at 85, that would demand greater quantitative accuracy than painting really gives.

Question: In face b, Fig. 30, what does the powerful Form faculty indicate, and why does it not indicate an artistic or trade vocation?
Answer: It indicates great observation and retentiveness. The much lower Color and Construction and the high Memory,
Reason, and Reform faculties in conjunction with the dominating Will, would hardly admit of an artistic or a mechanical vocation.

**Question:** What expression fact have we reconsidered in this study?

**Answer:** That the constant mental influence modulates the bones and the soft tissues of the body.

**Question:** Of what classes are the greater number of vocations arising from the faculty of Form?

**Answer:** The arts and the trades.

**Question:** What instruction can the vocational counselor or employment manager give concerning Form when object-form is necessary but not large enough for the vocational requirement?

**Answer:** That the individual should clearly notice the space, or size, of objects, should pay attention to forms and parts with regard to their uses, either in one's vocation or as a matter of general information, should avoid useless generalities but cling to information that can be used in the future. The habit of sketching, drawing, planning, and rearranging objects is one of the means of gaining practical information even when the designing vocations are not chosen or followed.

**Question:** In what ways is the perception of motion-form valuable, vocationally?

**Answer:** In many of the trades it is highly essential for accuracy and efficiency in accomplishment, and also for safeguarding the worker from accidents.

**Question:** What secondary kind of Form perceptions can one receive in the observation of motions?

**Answer:** The change in the relative size of an object.

**Question:** How can this kind of perception of motion be shown not to depend upon clear perspective?

**Answer:** Objects seen in clear spaces, when observed with one eye closed, seem to enlarge as they approach and to diminish as they retreat.

**Question:** What advice can be given when motion-form is not large enough?

**Answer:** Advise that the individual should note carefully the direction in which objects move and the rate of their motion, that he should clearly notice the line of motion of moving things, as instanced in machines, swinging arms,
cranes, moving vehicles, operating tools, and many other instances where there is warning of danger or usefulness in the observation.

Instances of high motion-form are seen in the requirements of the baseball player, the wingshot marksman, the steel riveter, and many other trades and games.

**Question:** When individuality of Form needs to be cultivated, what suggestions can the vocational counselor give?

**Answer:** Advice of assistance to Memory, through noticing the peculiarities of objects, their distinctions in shape and surface quality, as roughness, polish, irregularities, differences from their own class of objects or of motions, their orderliness or positions, and their styles or their system.

**Question:** What is the mental relation between Form and Construction?

**Answer:** Construction is the chord of Form.

**Question:** In what major way is the faculty of Form of assistance to the faculty of Construction?

**Answer:** In furnishing Construction with the mental perception of the forms of the quantitative elements of structure, limit and direction.

**Question:** What fact of great importance has Reason discovered in relation to the forms of things that the perceptive faculties could not recognize?

**Answer:** The recognition that quantity, limit and direction are not attributes but properties of things—properties that cannot be taken away from things.

**Question:** How do these elements of the forms of things present themselves in the function of Reflection?

**Answer:** As quantities and forms which are subject to structural transitions or subject to being made over or modified or changed.

**Question:** What advice can one give concerning the assistance Form is to Number?

**Answer:** Chiefly, that it aids Number to distinguish parts and multiplicity of objects, to identify quantity symbols, and to note successions in numbers or time or place.

**Question:** Does Form assist Language?

**Answer:** Yes, by furnishing graphic sound signs or other symbols or gesture or inflection signs.
Question: When Form is dominant in an individual, what is the chief reason why that individual should follow a vocation arising from the faculty of Form?

Answer: Because his leading mental ability, Form, will accumulate points of interest in the forms of things much more readily and sympathetically than any secondary faculty can accumulate points of interest which are sympathetic with its nature.

Question: Is there any other important reason why such a choice of vocation should be made?

Answer: His variety of interest in a vocation arising from Form would be wider and more potential of results than in any other kind of vocation. Points of interest and variety of interest in one's vocation are fundamental sources of success.
LESSON THREE
The Regional Influence and Products of Color

New York
MERTON INSTITUTE, INC.
1920
General Instruction: In our study of the general regions under the Temperaments, we noted the facts that incoming information is received through the senses of taste, smell, impression (feeling), sight, hearing and intuition. We note that taste, smell and impression are grouped as sensations, that sight is classed as perception, and hearing as a part of specific retentive ability, or of the sense fact abilities. These come under the general topic of Sources of Information.

We shall see, in the future studies, that in determining which of the temperaments is dominant, or the order of their dominance, we can determine in a general way the class of characteristics that are dominant, and the general class of vocations from which a selection can most successfully be made. But the selection will still be extremely general, it will not approach even the division of the Arts from the Sciences, nor the great field of Letters from that of the Trades, nor the cultural professions from those that have the reputation of being distinctly practical and utilitarian. The distinction may separate the purely intellectual pursuits from those that are highly executive, the arts from the administrative pursuits, where the requirements are not blended.

But the chief benefit in understanding the temperaments is in understanding the relations of the individual faculties of each class to those of the other classes, that is, of each temperament to those of the other temperaments. It is in realizing that the Will looks through the eyes of, asks questions of, and makes requests of the Intellect; that the Will gratifies, by intensive practical exertion, the desires of the Affections; and that these in return, as the sources of knowledge and feelings, depend upon the dynamic and consequent execution of the Will.
Every normal human being has every faculty, in some degree, possessed by the race, but just as men individually as members of society compete for the various products of life, just as trees in the forest unconsciously but vitally compete for rain and sunshine and nutrition, so do the mental faculties compete with each other in the struggle for dominance and the expression of their power in the mental legislature of the individual and in the mass display of the local regions of the body entrusted by the organized whole to their particular care and government.

It is to these local regions, as exponents of the powers that govern and stimulate them, that measure their waste and repair, that hold them in readiness and in potential preparation even when not exerted to marked extent—it is to these regions we must pay particular attention, as analysts of mentality and disposition and as readers of vocational aptitude and preferred choice.

It is in the proportions of these particular characteristics or faculties or mental abilities — whichever we may choose to call them—that when grouped in action most perfectly carry on all of the actions that mark the distinctions in vocations, that make one vocation possible to one man, but not to another man, that make it possible for one man to do successfully one vocation but ignominiously fail in another no more difficult occupation; it is in these matters, in part,
we are to find the solutions in definite terms to the reasonable requirements of our profession.

Specific Location of Color Influence: The facial region of the faculty of Color is in the first, or lowest, forehead tier, adjacent to the region of Form toward the side of the face. It is located in the mid-brows, ending at the outer corner of the curve of the brow. It pushes the outer structures of the frontal sinus forward and, generally, downward over the eyeball at the section where the eyebrow acts as a shelter to the pupil and the outer corner of the eye. When the faculty is large, it sometimes causes the outer corner of the brow to bend down and forward just above the region of Number.

Color, like Form, grows large by following out the upper line of the nasal angle. This causes the brow to measure relatively long forward from the auditory meatus; thus the brain fibres radiating from the brain centers (optic thalami) are lengthened. But though long fibres and large territory give the faculty of Color power, the faculty sign is wholly facial.

Judging Size: The rating of a faculty depends upon its proportion to the other faculties of the individual, and this proportion is to be compared with all of the faculties of the face. When it is the largest faculty in the face it should be chosen as the one from which the vocation should arise. When Color is the dominant, the vocation should have color in it as its chief interest.

Taking the ear opening as the basis of judgment, measuring by sight the distance from this opening to the location of Color, one should judge whether it is larger than any other part of the face when these other features are considered.

Difficulties More Apparent than Real: In the early studies the student may have a sense of inability to rate faculties, or to judge their proportions when they are an average or less among the other faculties. This difficulty is chiefly due to inexperience in comparing the sizes of the features and to a lack of study of the various locations of the faculties. The main aim at this stage of study is to learn the locations and blended boundaries of the faculties studied, along with their nature and vocations.

As one after another of the faculty abilities is mastered, each one will become easier and much more interesting; the faces of people one meets will become studies and specimens. Before one is hardly aware of the fact, he will find himself making apt deductions which seemed impossible in the earlier
reading. The main thought to keep in mind is that this is a useful profession, the work is cumulative, and one should not expect too much at first.

**Hues**: The subfaculty **hues** is next outward from the individuality of Form; it is the inner region of Color.

The subfaculty of **hues** is that part of the faculty that specifically and technically recognizes and competently remembers the distinctive quality of colors of objects, the differences in intensity or luminosity or chroma, or where primary colors and the mixtures differ somewhat from the grays of complementary mixtures. This has to do with pure matching and mixing of colors, with the memory and attraction of colors.

People are often found with keen eyesight and sensitiveness in sight, in the sense of color perception, but with a small faculty of Color. Their impression to colors is generally very transient and their interest in painting and colors small; there is apt to be a lack in distinguishing fine differences in hues and tone qualities.

**Representation**: The subfaculty **representation** is the middle region of Color. It is important as the ability to recognize the truth of the representation intended by the artist or colorist.

The colorist arts are in fact the great arts of re-presenting, the great representative arts. They give us through sight those means of exhibition, of recalling, of portraying or depicting and describing objects as they appear to our sight. Black and white, shadow and monochrome give us the ideas of forms, sizes, perspectives, etc. (see Form), but **representation** gives us the facts and esthetic effects due to the agency of Colors. It is all that we can see, but it is the sensibility and memory of the thing presented as an actual likeness, an exhibition of the static or changing image of the object. Nature is shy of monochromes, she dislikes white and black.

**Order, or Harmony**: The subfaculty **order**, in its relation to Color, has the function of recognizing the elements of proportion and beauty, with their structural relations to delicacy and refinement, as the basis of beauty, from which the responsiveness to beauty is created. Disorder even in the arrangements and relations of colors is distressing to one of taste and artistic feeling.

This ability, when large, is sensible to the sequences and luminosities of objects, the elements of grandeur and contoural attractiveness. It has to do with the collocations of
parts—the elegance of place and quantity—as seen in the great masterpieces of painting and its relations to architecture; the disposition of right proportions in the volume and intensity of light, colors and shadow in either large or small objects, where there is an intention to convey information by arrangement of the colors. Greater effects of order are seen in architecture, mural decorations, in the choice of edifice stone; it is called into play by scenery and views of natural magnificence.

The analysis of color concepts shows us how largely the faculty of Color enters into many other vocations than those of the dominant use of color as a vocation. The pigments of color are themselves of value in the field of preservative utility, as well as in that of ornamentation. The preservative medium, whether siccative or carrying, may itself form the body of the coating, the pigment carrying the decorative effect.

The vocational counselor should note that many color vocations among the trades do not require a high imagination or large executive faculties. Nevertheless the painter should have many invigorating and attracting mental faculties surrounding Color as its supports. The interest in the work, the comprehension of its uses, the economy or value of good work are all important matters.

In the analysis there are given a few combinations of the spectrum colors, and these can be extended by the use of the mixtures and white to limits of color distinctions of about five thousand hues, tints and colors. There are relatively few color names, these being expressed by combined names and by reference to natural objects, as sea-green, sap-green, rose, and lemon-yellow.

The counselor will find a large number of vocations where imagination, dexterity, the Form subfaculty object-form and the subfaculties of Attention, Reason and Inspiration follow either as essentials or as supporting abilities; these essentials and supporting abilities often demark the vocations, and the individual's quality has great demarking ability. No one would expect the bridge painter, the house painter and the portrait painter to rate the same in quality. Yet all should have Color dominant. The ability to judge quality and its grade of natural ability, its rating in the scale of accomplishment, will be treated later in the course. In those vocations that are rated as professions, or that require a collegiate or university education, the mental quality is an extremely important matter, which must be treated fully as a part of this course.
The student will find in various sections of these studies some reiterations, intentionally so, in order to associate various parts of the subject and also to make clear and memorable certain relations of importance to the vocational counselor’s work.

Comparisons of Color Faculties: In studying the faces, a comparison of the faculty of Color with the rest of the face is the essential fact. Remember that every face has all of the faculties in some proportion to the others. Your acuteness in these judgments will eventually determine your ability to give vocational advice or to select and manage employees.

Contest for Supremacy: On Fig. 39, face a is that of Michelangelo. Like Rodin’s, this is an enormous face. The protruding brows form a portico; they indicate, not only the predominance of their region over the rest of the face, but also powerful intensity. These brows seem twisted and gnarled and rugged; they demonstrate a lifelong struggle of their large faculties of Form and Color against the misfortune of a small faculty of Number. This continuous struggle was forced upon Michelangelo by the conflicting demands and commands of the various popes who reigned during the period of his long career—a career that began before he was seventeen years old and which was actively maintained until his death at the age of eighty-nine years.

Form started with the mastery in his mentality, and no amount
of pressure by Pope Julius II and the several Medician popes who succeeded him in their demands predominantly for painting instead of for sculpture, could stimulate his Color faculty to the major activity. His rugged and fearless execution in marble with chisel and mallet surpassed even the gigantic themes and the massive visions that flowed from his brain through the medium of his brush—a brush that was too rapid and a mind that was too impatient with the details of color grades and with the minutiae of finished color work for a great color artist. His frescoes were almost monocolor—low relief of long perspective.

Visioning Power: Michelangelo’s subjects were prodigies of vigor, of masterful thought, and of imaginative construction—great frescoes and greater statues and wonderful concepts of edifices, some finished, some half done, some visioned and sketched, left like unfulfilled dreams because of interdiction or because of the disconcerting counter orders under the rise and fall of state and church powers over which his genius had no control.

Departure from Mental Dominance, Failure: His governors tried to force upon him the conception and the mechanical details of great architectural works. He attempted the church front of San Lorenzo, the Library, the Farnese Palace, and St. Peter’s Church. He failed as an architect in these attempts. The exactions of physical properties and qualities, of numbers, and of structure were beyond him and outside his field of ambitious labor. He had not, as had Leonardo da Vinci, the skillfulness and invention of Construction in conjunction with Form, Color and Number. His Construction falls to 60, and his executive and wealth faculties fall below 50.

Influence of Secondary Faculties: The enormous mentality of Michelangelo went through the mazes of destructive orders and untoward conditions that were imposed upon him with an artistic fortitude unsurpassed in history. The line of his mentality is 60 at Integrity, 80 at Industry, and 70 at Liberty. His Sociability, low at 55, and only moderate Amity and Reform, made it impossible for him to work with other ambitious artists. Leonardo da Vinci and others tried to please him but failed; his thought was too rugged and powerful to admit of their co-operation.

The Accurate Painter: Face b is that of Van Dyck. Here we see Color dominant at 100, while Form is a close second at below 95. Number falls to 60, and Construction to 50; these figures plainly indicate that architecture was not the vocation
for Van Dyck. This is the face of the accurate painter—the painter who is in love with colors; it is the face of one who is spurred to the profession of portraiture. There is too much fastidiousness, pride of personality, friendship, and mobile grace in this face for it to care for landscape art, even though the color schemes of landscape, atmosphere and sky might almost intoxicate with their beauty.

**Deficient Idealisms:** This face indicates strong religious emotions, but the emotions which Van Dyck saw and which he imaged in his art creations were the simple affections of the family life. He never reached the passion seen in the great epic idealism of Michelangelo or da Vinci, or in the purely religious emotions of Fra Angelico. He painted with great delicacy and esthetic feeling, but he sought to portray personality and the characteristics of refinement rather than gigantic strength, boldness and heroism.

**Wealth Deterrents:** Although Van Dyck probably received more for his work than any other painter of his day or near period, he died poor. His inability to retain the wealth which he gained is easily read in his mentality line—moderate Defense at 55, low Caution at 40, and still lower Economy at 25.

**Co-equal Dominants:** Face c is that of England’s most original artist, Hogarth. Here Color and Form are practically co-equal abilities in power. Of these two strong and sympathetic faculties, Form had the advantage of earlier opportunity for expression. Hogarth was apprenticed while a youth to a silver-plate engraver. In the exacting form work of metal engraving, he demonstrated unusual aptitude and originality; at twenty-three he set himself up as an independent engraver. His color faculty was, however, too strongly dominant long to be denied expression; soon, all untaught in the technique of painting, this natural artist was producing series of pictorial paintings which he engraved and from which he reaped a handsome income, as prints from these engravings found immediate favor and rapid sales.

Hogarth copied no master, followed no school of painting, and heeded no art conventions. He simply painted incidents of life as he saw them in actuality or in imagination—painted so vividly and with such fidelity to truth that no one could miss the moral lesson of his canvas. “You look at other pictures, but you read Hogarth,” said Charles Lamb.

**Wide Range of Secondary Faculties:** This artist’s Form and Color faculties were well supported by a versatile Atten-
tion at 80; he saw all the circumstances around his subject. Like Shakespeare, he was a master of relations: every detail meant something; every line counted; and every object and every gesture had information and intention. His gift for expression and physiognomy was accounted remarkable by his critics. His large Reason at nearly 80, coupled with Construction at 80, enabled him to take a theme, as "The Rake's Progress," and to imagine, invent and depict eight successive dramatic scenes that might logically follow in the life of a vapid, undisciplined youth surrounded with flatterers and the temptations that beset sudden wealth.

**Faculty Cause for License in Themes:** Hogarth's mentality line is only 50 at Inspiration and lower still, 35, at Dignity. These deficiencies are evidenced in the coarse and hideous objects and sights which he sometimes selected as the medium of his satire. Liberty at 80 offers no restraint to his jovial, daring self-confidence.

**The Tragedy of Misdirection:** The life tragedy that may result from lack of opportunity to express one's dominant ability is graphically told in her autobiography by Jane Grey Swishelm, a woman who was born with a passion for painting. She writes: "What matter who sent me my bread, or whether I had any? What matter for anything, so long as I had a canvas and some paints, with that long perspective of faces and figures crowding up and begging to be painted. The face of every one I knew was there, with every line and varying expression, and in each I seemed to read the inner life in the outer form. Oh, how they plead with me! What graceful lines and gorgeous colors floated around me! * * * * But I had neglected a duty—again and again the fires went out or the bread ran over the pans, while I painted and dreamed. * * * * I put away my brushes. I resolutely crucified my divine gift; and while it hung writhing on the cross, I spent my best years and powers cooking cabbage. Friends have tried to comfort me by the assurance that my lifework has been better done by the pen than it could have been with the brush, but this cannot be."

**Cause of Failure in Color Fine Arts:** Color is the dominant ability from which spring the color fine arts, which are the chief means of artificial representation and objective imagery. This age-old vocation cannot be said to recommend itself as a means to an assured competency. The greatest mental handicap to financial success in this expression of the faculty of Color is found in the very basis of artistic suc-
FIG. 39A

J Reynolds.

B Esteban Murillo.

A. Watteau.

G Bellini.

Salvator Rosa.

P. Boucher.

W Hogarth.

Hans Holbein.

Pietro Perugino.
cess in such expression, namely, in such exclusive devotion to the art as to inhibit other interests and aims—a devotion that dwarfs one's judgment and one's perspective of the relative value of things.

It is a natural fact that men choose to follow this vocation because of the personal satisfaction derived from the exercise of their ability to see and reproduce the "shapes and colors of things." The aphorism, "Art for art's sake," describes their mental bias quite well. There is no more reason for "Art for art's sake" than there is to have science for science's sake, or literature for literature's sake.

The generally conceded improvidence of the "artistic temperament" is due to the fact that the artist's executive faculties are allowed to remain practically dormant, that no persistent or determined effort is made by him to call them into exercise. It is not the hope of financial success, not the vision of the advantageous disposal of his wares that spurs him to accomplishment; instead, his stimulation, or incentive to action, is too often solely found in his own esthetic enjoyment of his creative skilfulness. The artist's disposition is to get satisfaction out of his creations rather than to make money by his efforts. Frequently, the passion for his products is such that he cannot be induced to part with them even in the face of pecuniary needs.

The general inpecuniosity of artists has done much to discredit strictly art callings in the estimation of many practical people. Vocational counselors must not, however, make the mistake of under-estimating the value of those faculties from which the fine arts arise. In a well balanced mentality the exercise of these faculties not only adds enhancement to the whole range of life, but they are also basic elements of greater efficiency and success in many lines of effort. The vocational counselor must lead his clients who tend toward this order of lopsidedness in mental activity to realize that the development of the local mental regions of art to the exclusion of the expression of the business and executive faculties of the dynamic will, while quite natural to the laws of mentality, is an unnecessary mental cause of financial failure, tends toward finicky ineffectiveness in the art works themselves, and toward non-stimulation to great and frequent production.

**Scope of Color Culture:** Large Color ability is far reaching in its effects on one's life. Independent of any utilitarian purpose, commercial, artistic or scientific, the mental perception of color contrasts, complementals, chords, and luminos-
ities is a source of distinct enjoyment; vocationally high Color faculty gives intensified interest and increased skillfulness in the utilitarian color arts and industries. Moreover, the fine arts not only gratify the Color sense in the perceptive faculties, but their effects reach through the whole range of the Intellect faculties. In the function of Reception, these effects are a part of esthetic culture, of the appreciation of beauty, and of the aspirations belonging to a cultured social atmosphere.

A Series of Painters: Face a, Fig. 40, is that of the Italian painter Bartolommeo (1475-1517), distinguished for the elegance and beauty of his early paintings, and for the marvellous richness of his coloring and the massing of his light and shade. Observe the enormous crest of the brows (both Form and Color extreme), carrying up in the still higher tiers of the forehead. The nose is finely formed. But the face is hollow at the sides, the jaw is somewhat weakened and irregular—the Will is shown to be non-executive.

Face b, is the Flemish artist Rembrandt. Color here stands but slightly above other large faculties, yet it is strong enough to carry on its work unrestrained by the others.

In face c, of Rosa Bonheur, Color and imagination are the dominants, with the face wide around the brows and the forehead retreating, but broad.

Face d is that of an American portrait painter, Francis Alexander (1800-1881), successful in the clear and attractive elements of his colors and in the fidelity of his portrait drawing.

Face e is the face of Jean-Baptiste Camille Corot (1796-1875), a landscape painter. His broad head, large parenthesis of the mouth, solid jaw and great independence made him indifferent to the canons of the older painters, but he was poetic in his subjects, brilliant and lively in esthetic sense, comparing as a landscape painter with Hobbema, Claude, Turner, and Constable, but with much greater variety of treatment.

The student of vocational counseling and of employment selection may realize that he is not selecting great artists, painters, nor for that matter in future faculty studies, great scientists or executives. But one thing must be remembered, that the signs and the mental faculties back of them are the same for every degree of accomplishment. The difference is in the quality of the individual. The bridge painter and the house painter need Color dominant just as truly as does the
FIG. 41
portrait painter or the landscape painter. The house or bridge painter is limited only by his quality. The lack of fineness in his texture and of brilliance in his mental capabilities mark him for a lower grade of work.

Lack of opportunity, force of circumstances, and many untoward conditions may keep the high grade man in low grade work; lack of self-knowledge, of self-appreciation, of encouragement, often have the same effect. Later on we shall treat of these problems of quality and naturally fine textures.

The student may need, for descriptive purposes and for a clearer understanding of the vocational possibilities, a broad insight into the various ideas, products and mental concepts of the various faculties. No better method of presenting these has been devised than that of analytical tables, showing by their arrangement the relative value of terms and the relations of the subject.

In the Tentative Analysis of the Concepts, the faculty, subfaculties (hues, representation, order), readable in the face, and the subdivisions of these and their Products are shown.

The vocational counselor and employment manager will readily see that the ability to use these facts is indispensable to many vocations, and can urge their study, experimental development and practical uses, always remembering that the mechanic and the professional man alike must teach themselves the greater part of their working knowledge. Every successful man must string his own wires on the posts of information.

The Products of Color: Since the products of the faculty of Color are the results of the perception of light, the perception of light as an associate of Form, and as reflected from objects, gives the mentality a wide variety of information regarding distance, the relative positions of objects, and the quality, density, and purity of substances. The immediate action of light is to give the mentality the sense of color tones, harmonies, hues, tints, and complementals.

Color's Importance in Many Fields: This faculty is not only the origin of many of the fine arts, but its activities enter into a great number of decorative, esthetic, and strictly practical uses. As Form dominates in many of the elements of structure and place relations, so Color dominates in many of the elements of beauty, in representation, and in determining the quality or condition of things.

It is notable that the capacity of Color to recall and to sustain pleasurable memories makes it a ready and agreeable
accumulator of valuable information; that in many of the technical fields, Color gathers indexes of facts of common value, as the ripening of fruit, the changing seasons' effect upon plant and animal life, and the conditions of vitality; and that Color is often the indicator of important changes, as in chemical reactions, and of other attributes and properties of things ranging from the iridescent hues of the mother-of-pearl mussel shell in the buttons of "my lady's coat" to the lines of the spectrum analysis of gases, minerals, and the composition of the stars.

The Spectrum and its Diffusions of Light: In a circular normal spectrum the complementary colors are nearly opposite each other, or about 180 degrees apart, as illustrated by cobalt blue and pale vermilion or by violet and green; discords are generally about 90 degrees apart, as illustrated by ultramarine and magenta, by dark yellow and light red or by yellow and cerulean blue; and chords are about 150 degrees apart, as illustrated by orange vermilion and cerulean blue or by crimson and yellow.

Some of the most agreeable chords are among the tints, but the spectrum does not reveal grays, nor tints or shades. The tints and shades are mixtures of spectrum colors, as red and white in pink, or as yellow, white and blue in light green, while pure grays are mixtures of spectrum complements, as blue and orange vermilion.

Chart of Color Relations: Each mental faculty and its subfaculties must have close mental relations to several other faculties. These relations are shown in the vocational requirements, and aid in carrying on the vocations of the dominant. Study these relations and their results as part of the work of selecting the right vocation for the client or the right man for the vocation required to be filled.

In "How to Choose the Right Vocation" there is a cross indexed outline of the mental requirements of eighty distinctive Color dominant vocations. The vocational counselor or the employment manager in the Color arts, sciences or industries should study these indexes of the essential and the supporting faculties where these are a distinctive necessity; that text and this will suggest an extension of mental requirements to their extreme of useful relations.

Specific Color Relations to Reflection: To Inspiration, Color furnishes the basis of representation of the greater part of symbolism, as seen in the paintings of figures, of raiment, of insignia of the churches and church dignitaries; it has
signal value in the banners of nations and their official or political definition; it has value in the choice of esthetic elements as in national flower symbols, in the color of gems, jewels and phases of general ornament for intellectual as well as for purely decorative purposes.

In these forms of representation, the color element is not intended largely to gratify the sense of perception, but the esthetic and reflective choice and color faculties. This fact carries with it the powers of high values of appreciation, of culture and of elegance apart from art itself or of the art impressions and sensations, as art phases that reach refinements beyond those of the sense faculties.

In compensation for these benefits to the high range of faculties—of faculties further along in the circuit of ideas—large Inspiration and large Aspirations in the individual have the tendency to enhance the work of the artist in the choice of theme and the loftiness of ideals in every work where the themes of beauty are extended into the realms of culture or ethics or esthetic refinement.

**Color Arts:** Many grades of Color ability are required in the various color arts, as a wide range of vocations is included in these arts, ranging from the simplest forms of bridge painting and machinery painting up to the fine arts. All grades of color vocations have in them some degree of opportunity for the exercise of color skilfulness and sensibility. The man who does not sense and appreciate colors makes a vocational mistake if he takes up bridge painting, not because he may not be able to do it, but because he cannot get the mental satisfaction out of the job that he ought to get from his work; nor can he expect to make progress in the path to better grades of vocations that should be incentives to good work and to better pay.

Among the color arts are many of the fine arts of the highest grade, as historical, portrait, landscape, mural, scenic, genre, and marine painting. The faculty of Color creates in the household and the commercial fields the decorative, fresco, sign, vehicle, and house-painting arts and a wide range of furniture decorative arts.

**Color Technical Values:** The information obtained through the faculty of Color is of inestimable value to the faculties of Reason and Construction. Many substances change their color under various conditions; sometimes a difference in color denotes a difference in quality—the governmental Dutch Standard Sugar test was based upon this distinction. The
color of substances gives information concerning their degree of purity, as the purity of gums, oils, and water; information concerning their density, consistency, and age, as in serums, syrups, and earths; and information concerning the progress of reactions, as shown by litmus tests for acids and by standardized color indications. To these kinds of changes are due many color values in chemistry, physics, pharmacy, and the various forms of spectrum analysis. In a great many technical and precautionary ways Color ability is useful in the work of thermics by giving indications of temperature, texture, and surface conditions.

Another assistant value arises in the mental utility of Color as an elaborative memory factor, as an aid to Reason in the values of retaining masses and qualities of relationship. This is a form of the older idea of association of ideas, really expressed in the association of facts and place and order, or as the memory of sequences and place relations. An idea should be more than a memory of a fact of sense information.

The greater the ability to carry mentally a great many sequences and place relations—sequences of time and order, and place relations of mass, distance, motion-changes—the clearer the processes of reasoning must necessarily become. The recollections of colors are often relatively great in variety and in specificness, thus furnishing both Reason and Construction with items of fact that would otherwise be lost. In many of the sciences, particularly in botany, zoology, geology, and entomology, the faculty of Color equals the faculty of Form in furnishing recollective imagery to the faculty of Reason. In fact, we may say that Color is the great assistant secretary of figure, image, quality, and mass.

**Color Industries:** Many industries grow either directly or indirectly out of color. Some of these, as dyeing, bleaching, cloth printing, paint making, and color extracting, are industries or manufactures, complete in themselves, which are used in other industries and manufactures. In other industries the color arts are a part of the industries themselves, as in some forms of pottery, tile making, tapestries, rugs and furniture making in natural woods. In still another class of industries, Color ability enters as a factor in solely commercial ways, as in the purchase and sale of paintings, the businesses of dealing in paints, wall paper, men's and women's suits, dress goods, artificial flowers, millinery supplies, and draperies and tapestries.

**Divided Responsibility for Success:** The diversified re-
COLOR DOMINANT
(SEE HOW TO CHOOSE THE RIGHT VOCATION.)

DIVISION - COMMERCIAL ENTERPRISES; PROFESSIONS AND ARTS-TRADES AND SKILLED VOCATIONS

ART GALLERY
GÉNIE -
Landscape -
Marine - Scenic -
Imagery - Miniature -
Heraldic -
Portrait -

FINE ARTS
ART PUBLISHING
ART MATERIALS
PAINTING
DECORATIVE PAINTER - Fresco - SGN.- HOUSE- LETTER- COACH- GLASS- PAINTER
PORCELAINS
China- glass-decorator - Pottery - Ground layer - Hand painter -
INTERIOR -
DECORATING
CARPET MFG -
RUG MFG -
MAT MFG -
WALL PAPER- CARPET-RUG - SCARF-LINOLEUM- LEADED GLASS- DESIGNER

DECORATION
ARTIFICIAL FLOWERS -
FLOWER DESIGNER - FLOWER MARKER - FLOWER CUTTER - FLOWER MOULDER - FLOWER WIRER - FLOWER- WORDER

MILLINERY
FEATHERS -
EYEBROWS -
EMBROIDERY -
EMBROIDERY DESIGNER - EMBROIDERER

PRINTING
LITHOGRAPHING -
COLOROTYPER - LITHOGRAPHER - HOLLYDAY CARD DESIGNER -

DYING
COLOR MIXER - YARN-SILK- MADDER- WARP- fast- BLACK- PLUSH- PIECE- PATCH- DYER- DRY- HAND

FINISHING
BLEACHING - LIQUOR- MAN- YARN- BLEACH' R

DYE-STUFF
PAINTS
MINING
KAOLINS

FIG. 44
responsibility and faculty abilities necessary in many of the color industries or where color ability enters as one of the adjunctive branches, puts upon the vocational counselor the equation of the executive, constructive and artistic division of the work. These are seldom found in a single mentality in the full enough development of all of the faculties required in the management, supervision, or the critical judgment section of the industry carried on. Whether or not an individual, under these circumstances, shall attempt to carry on all of these functions, or shall divide them with others, is often a vital point in matter of counsel. In these industries, as in similar industries, especially in small or in medium sized firms, there is generally found a condition of high class production and of very moderate grade executive administration, or the reverse; in such sized firms there is greater need that all branches shall be high class than is the case where a larger production gives the advantage of mass purchase, handling, and sale. The lack of high grade management arising from the too limited output has the disadvantage of tying up under one man a wide vocational variety of effort, some of which cannot be highly specialized.

In the color industries, as in many others, it is, then, important that in the general scheme of organization, the artistic talent shall be found in one segment and the commercial sagacity and administration in another; thus the failure due to the lack of commercial acumen in the individual mentality of the artist, and to the less often found lack of artistic appreciation (but no less often found lack of artistic ability), in the financial elements, is avoided.

Moreover, the work relations of an artist in these industries are apt to be interdependent with other but differing kinds of work; generally this is to the financial advantage of the artist, because the relative value of the individual’s effort can be more justly estimated when it is a recognized part of a desired accomplishment than when it is the isolated effort of an artist working by himself.

Vocational Aspects of Color in Surroundings: Under ordinary conditions of vocational effort, the colors of one’s surroundings are an ever present fact. The very facts that one must see while at work, must work in the light—often intense light—that light is color, and is more constantly playing upon the mentality than are reports from any other sense, are matters of importance in relation to the maximum of accomplishment.
The vocational counselor in firm employment or as advisor will be called upon to consider these elements of color in their effect upon efficiency and comfort in working conditions. We cannot in this brief treatment consider extensively these color relations, and it is advisable that the vocational counselor make a study of color surroundings in industrial conditions. A few suggestions are given here in matters of the mental effect of colors, but it will be found that much depends upon the mass of each color and the importance of lighting, upon the amount of decorative effect desired or advisable, and upon the possible use of mediums or amount and distance of surface to be treated. Architects and decorators have been accustomed to considering very seriously the color problems from the esthetic standpoint, in household and institutional decoration, but have not generally been consulted in the fields of industry.

Different colors differently affect individuals; nevertheless, each class of colors has a distinctive mental effect upon a great majority of people. The cold blues, blacks, dark grays, violets and purples, on any considerable surface, have a decided restrictive, and often a depressing, effect upon a majority of people, particularly when they form the mass color surroundings. The mentally intensive reds and heavy crimsons are of an opposite nature, tiring and over-stimulating to the mentality, though more bearable under executive efforts than under the perceptive or reflective activities.

The temperate blues and yellows among the tints, the viridians, greens (except emerald), cadmions, saffrons and straws among the tertiaries, are the most bearable and unoppressive colors in masses. White is tiring to the brain and to the eyes, while black is not tiring to the brain but is to the eyes, due to the efforts to find focal points of high lights. A distemper gray black is preferable to a reflecting black.

A warm neutral gray—equal luminosities of red and its complementary or of yellow and its complementary (not of blue and its complemenental)—in distemper, or the dark or light greens, or creams, with their chords in smaller masses (angles of 20 degrees) are also generous activities of mass light to the eyes and mentality. The presence of chords (about 150 degrees of the normal spectrum in a circle, or of the spectrum tints of white), is a gratifying relief, as noticeable in the case of the ambers, warm monochromes, light Naples yellows, warm Roman ochres, raw sienna and terre vertes.

In factories the dirt colored browns, blacks and brick reds
are abominable colors, and because “they do not show dirt,” are so much the less commendable. The white dresses of nurses and the white paint walls of sick-rooms are not favorable to convalescence; there ought to be numerous other ways of determining whether or not clothing needs laundering or walls need cleaning than by the unnatural color white.

**Some Comparisons of Color Proportions:** Fig. 45 has a series of faces in which Color ranges from 25 to 100 in power.

On face a the region of Color is outlined by a heavy line. Compare this region with that of Form in Lesson Two. The inner edge of the region of Color blends with the outer edge of the region of Form on a line just vertical to the inner iris of the eye; from this line it extends outward slightly around the corner of the brow, where it blends with its neighbor on that side.

In face a the Color region is large; the brow protrudes, it is full, presenting the appearance of heaviness. This is the brow of the painter who loves colors rather than the ideas they can be made to portray. In this face a the eyes are not remarkably deep set; the Color region of the brain seems to have crowded them forward in order to give itself room.

Face b has Color dominant but its region is not relatively as large as in face a, as is shown by the outline of the upper forehead, the nose and the chin.

In face c the brows are comparatively narrow; the region of Color is only moderately large, that of Form being larger.

In faces d, e, and g the Color regions are small; they are only large enough for common observation and are lacking in the sense of color values.

In faces f and h the brows are contracted, narrow and highly overbalanced by the rest of the mentality. These faces would find difficulty in sensing or in remembering even the more powerful colors, they would tire of any color efforts, and would have to depend upon Form for their perceptive memory of objects or of object relations. It is not possible that faces f and h would be able to do artistic color work or would enjoy color employments.

In face i (Bari negro, upper Nile), the Color and Form regions are short and narrow. The Bari negroes, differing from many aborigines, find great difficulty in remembering either forms or colors.

Face j is an American Indian. The forehead is narrow, the Form region is remarkably developed in proportion to the rest of the forehead. It indicates intense scrutiny of objects
and of distances, but there is a lack of artistic imagination. The Color region retreats rapidly from the Form region. Only heavy brick reds, powerful chrome yellow or purples would ever interest this Color ability.

Compare carefully these last two faces with faces a and b and with face k. The last is that of an aggressive, imaginative painter. The brows are full, broad and fairly high; the nose is long, with heavy deep wings, which, as later studies will set forth, show powerful support to the dominant Color and secondary Form faculties.

Some Typical Vocations Where Color is the Dominant Ability

**Lithographer:** The color litho-artist requires large Color and large Form. These abilities are required to translate color schemes into black and white drawings of the right depth of tones, and to see in imagination the results of blended color superimposition of many color shades before the printing is actually done. The lithographer needs great accuracy in the use of drawing instruments and in the use of wax crayons. In addition to Color and Form the lithographer must have imagination, skilfulness and dexterity.

**Wall-paper Designer:** The wall paper designer requires uncommon familiarity with conventional design, with the harmonics of color and form, and with ancient and modern styles of illustration and "motive" effects. He should thoroughly understand color relations, color dominance, intensity, luminosity, contrast and depression. On account of the constant repetition of the design on the same wall surface, the wall paper designer should have considerable imaginative felicity. Dominant Color. Essential Form; supporting imagination, skilfulness and independence.

**Decorator:** The decorator requires Color ability in proportion to the artistic quality of the work demanded by his patron. The finer branches of decorative work demand considerable ability in the elaboration of color schemes and in broad rendering; this ability is generally the outgrowth of idealistic art study and a knowledge of decorative arts. Dominant Color. Essential Form; supporting imagination, skilfulness and observation.

**Art Salesman:** The art salesman needs a keen sensibility to color values, an experienced interest in the prices and values of the kind of art goods he is selling, and some knowledge of
the technic of art production. Dominant Color. Essential Form; supporting Attention, Language, Amity, Aspirations and aggression.

Dyer: In nearly all color dyeing establishments and in mill dyeing, the dyer requires skilfulness and judgment in keeping the colors true in body and tone and hue by noting with keen color perception the normal amount of dyes taken up by the goods, and in exercising imagination regarding the changing effects due to drying, fulling or other finishing processes. As dyers become experienced they generally find themselves more expert in one form of dyeing than in any other and specialize in a particular branch, as warp, piece, plush, silk, madder, or other forms of dyeing. Dominant Color. Essential Attention; supporting Caution, Mobility and Impression.

Portrait Artist: There are many varieties of color portraiture, but all require, for fine art work, exceptionally artistic perception and ability, with considerable experience. The element of personality in the artist has much to do with his financial success, but the work depends upon a high range of art specifics, care and skillfulness in lighting and in understanding the composition of expression, suggestive backgrounds, and underlays of color in order to get high modeling, skin tints, textures and depth in artistic expression. Dominant Color; essential object-form, imagination, observation, intuition and Sociability.

Art Dealer: The art dealer, in addition to critical art abilities, among them Color, object-form, imagination, observation, intuition and Sociability, requires good salesman's Language, with Integrity, competent aggression, protection Economy, Caution, Industry, Laudation, and the Aspirations. The art dealer, like the jeweler, needs to establish the absolute confidence of his patrons in his integrity, since the buyer of art can seldom be a judge of the actual value of his purchases and must rely upon the opinion and statements of the seller.

House and Sign Painter: The house or the sign painter should have Color as the dominant just as fully as is required in the other color trades or arts. The quality, however, need not be as fine, while Mobility, dexterity and Industry need to be large. The sign painter generally needs to have a large object-form as essential, and in some kinds of work, where colors are of secondary value, object-form may be the dominant.
A
RECONSIDERATION
of
THE REGIONAL INFLUENCE AND
PRODUCTS OF COLOR
through
QUESTIONS AND ANSWERS

Question: Where is the faculty of Color located?
Answer: From the mid-brow to the curve around the outer corner of the eye.

Question: Does increased territory add to the power of the faculty?
Answer: Large Color territory gives relatively larger power to the faculty.

Question: What is the primary function of the faculty of color?
Answer: The perception and the retention of colors—their tones, tints, hues, harmonies, contrasts, intensity, luminosity, and vision mass.

Question: What was Michelangelo's dominant faculty?
Answer: Form was slightly predominant.

Question: How is this proved?
Answer: By his face and the character of his work. His mid-brow region was the largest mental region, while his sculpture and drawing are judged to be superior to his color work.

Question: Why did Michelangelo fail as an architect?
Answer: His Number and analysis were only moderate in proportion to his high power faculties; and while his Construction and Reason were larger than Number, they did not empower him with structural ability. His sociability and wealth faculties were not large enough in proportion to admit of either his management of others or associate labor with others. His work and drawing prove that he could vision the superficies of great structures, but that he disliked to work with the rule and that the detail of great structures worried him.

Question: What faculty was dominant in Van Dyck?
Answer: Color; portraiture in oil was the greatest phase of his art.
Question: Could Van Dyck have succeeded as an architect?

Answer: With Number at 60 and Construction at 50, architecture or any constructive art of a high order would have been hardly possible.

Question: Did these faculty quantities defeat any other form of painting?

Answer: His moderate Construction and its imaginative elements so reduced his grasp of the essentials of structure and limited the scope of his composition that great idealistic works were impossible for him, even after his study of the art of France and Italy.

Question: What mental influence caused Hogarth to give up his initial vocation, metal-engraving, in which he was successful and inventive?

Answer: His Color faculty, which was about equally dominant with his Form faculty, had no exercise in this work; therefore, the engraver's vocation failed to satisfy him. His Color faculty made him ambitious to be a painter.

Question: What faculties led him into the original line of essayist by portraiture?

Answer: Large Reason and large Sociability caused him to specialize in themes relating to the social and political life of his own day, and incited him to express on every part of his canvas his salient, pertinent and dramatic ideas.

Question: What are the general terms used to distinguish the qualities of colors?

Answer: Colors, color tones, complements, harmonies, tints, hues and luminosities.

Question: When for any reason Color needs to be strengthened and made more vocationally valuable, what can the vocational counselor advise?

Answer: He can advise the attentive observation of color tones and their effects upon each other and upon the observer. These effects are results of the contrasts and complementary effects of colors, of the harmonies of colors, their hues and tints, and the amount of intensity light gives them. He can make a study of color mixtures and contrasts, of fine paintings and color effects, of the influence one color has in modifying another, and of their influence on the feelings, emotions or esthetic sentiments. The advice can be carried into the study of the benefits of colors on vocational surroundings, and into the various phases of color values treated of in this lesson.
Question: What advice can be given concerning comple­
mentals?

Answer: To notice that complementals heighten each other 
through contrast, and are more easily distinguished as such 
• than are chords or harmonies.

Question: What advice can be given concerning chords and 
other matters of color relations?

Answer: That the depressing or enhancing effects should be 
noticed, that colors of objects furnish an optical basis in judg­
ment of perspective distances and mass sizes, of the relative 
direction of things from each other; that the faculty of Color 
can accumulate a wide range of information in the sciences and 
arts which is particularly useful to Reason, Construction, and 
Sociability.

Question: In the mastery of what classes of sciences can 
Color be an especially useful support?

Answer: Color ability is useful in nearly every scientific 
field, particularly so in mastering the problems of botany, 
chemistry, natural history, physics, geology, and thermics.

Question: Has Color ability marked value in manufacturing 
industries?

Answer: The protective value of pigments added to the 
protective value of color mediums makes coloring an impor­
tant factor in nearly all the great manufacturing industries. 
In addition to the protective values of applied colors and their 
mediums, attractive ornamentation by the use of colors is im­
portant in enhancing the value of the products manufactured. 
The journeyman color trades arise chiefly from these utilitarian 
and artistic facts.

Question: What mental relation does the faculty of Color 
have to the executive faculties?

Answer: Color is polar to the higher executive faculties; it 
is slightly sympathetic with the co-active faculties, and is un­
sympathetic with the wealth-accumulative faculties. Persons 
having Color as their dominant faculty seldom have financial or 
commercial persistence. The mental response of the faculty of 
the Will aroused by Color is Aversion.

Question: Is Color the dominant faculty required in many 
of the arts?

Answer: Color faculty is the origin of many of the fine 
arts, of many common arts, sometimes called trades, and of a 
number of businesses.
Question: Is Color the dominant faculty required in any of the industries?

Answer: Color is the dominant required in such industries as the manufacture of inks, paints, rugs, and wall paper.

Question: What are the chief artistic values of color?

Answer: Colors are a natural source of enjoyment; through their pleasurable effects they furnish a means for esthetic culture; colors are the chief means of artificial representations because of the mimetic possibilities which they afford.
LESSON FOUR
The Regional Influence and Products of Number
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International Copyright
by
HOLMES W. MERTON
Specific Location of Number Influence: The facial region of influence of the faculty of Number is in the side of the face at the brow and in the temple region about one-third of the way to the ear margin. The lower line is level with the corner of the eye-socket; the upper blending margin is a curve around the forehead from the level of the top of Color and Form.

The size of the faculty is measured by the comparative width of the forehead in this region, the focal points being about three-eighths of an inch back of the curved crest of the brow.

The subfaculties are located as shown on Figs. 46 and 47, as judgment of quantity at Qu., mental arithmetic and calculation at Ca., and separation of objects numerically at Se.

These blend into each other by insensible gradations at their margins, just as the faculties as wholes blend into each other. None the less in this blending the sizes can be judged of each part, can be rated by the diameters from side to side.
the variation noted by the slope of the face and the analysis chart canted to measure the ratios to themselves and to the other faculties. It is always a matter of proportion, of proportion to the dominating larger faculties. When a faculty has the indication of a given amount of ability, it will be competent to accept that degree of training with the same ease the other equal faculties can accept their amounts, but not with the ease with which larger faculties can take their kinds of information.

**Quantity**: Quantity is that subfaculty of Number that judges of masses by groups of their parts, by the known proportion of some of a mass by its multiplied volume as a whole, and by the practice of grouping, in arbitrary form, the various parts of the mass. This ability is of great value in a rapid survey of operations, or of variable quantity units, as illustrated by the forester guessing the lumber content of a forest, or the ranchman estimating the value of a herd.

Quantity is also a mental factor in the problems of geometry and algebra in trying to see clearly the mass or amount of things represented by the shape and direction of lines, or the distances portrayed by them. Since geometry is the branch of mathematics which deduces the properties and quantities of various spaces or variations in these spaces, without paying attention to the objects possessing the spaces, quantity is necessarily interested in geometry and in the algebraical calculations necessary to interpret the quantity properties of the spaces or their objects.

Geometry, and the formal mathematics, algebra, can be carried into extremely complex forms, but may be used in many simple problems, analysis of equations, and reasoning about relations. The simpler forms of these are often spoken of as elementary mathematics, consisting of a combination of
practical arithmetic, elementary geometry, trigonometry and a part of algebra.

The aid of quantity in the practical arts and mechanics is clearly seen in these uses that go toward extending and aiding much longer processes of measuring and arithmetic, as in the problems of the mechanic, artisan and tradesman, the simpler problems of the surveyor and designer, etc., where plain arithmetic would take much longer. Since by geometry and algebra we try to realize clearly the shape and amount of objects or distances, the outlines of things or the motions of things, trigonometry aids in solving distances—as it means to-know-three-measures-of-places—without our going to the places themselves; the three branches are easy methods of calculating perspective.

**Calculation:** This subfaculty is the mental origin of the art of computation, to count, compute, and carry out the common processes of arithmetic; it is the art of reckoning and the theory of numbers as the symbols of units and their quantities. This is the most elementary form of mathematics carried on as addition, subtraction, multiplication and division. These mental processes can be extremely simple, and a necessity for their high power in the mentality is not due to the complexity of their operations but to the tax upon the memory of transient quantities, as where long additions are made or heavy tables carried, or a great number of figures exist in the problem. This condition is a parallel to that of remembering the spelling of a large number of unfamiliar words, or of the transient memory of a vocabulary.

In bookkeeping, accountancy, checking up, in the thousands of operative and Number and calculating problems, changing quantities in high numbers are often carried with great ease
by the calculator who has large calculation; two and three period quantities changing several times a second in the mentality are retained transiently with absolute accuracy, and this mental action is carried on for hours without rest.

Many peculiarities exist in this faculty of Number, as instanced where the memory of numbers is highly transient and still able and rapid, as in mass additions, multiplications, etc., but where these and other quantities cannot easily be long remembered. In the telephone operator’s calculation, some kinds of bookkeeping, cashiering and other transient time vocations where the amounts are not large nor to be remembered, the retention of the numbers seems to be but momentary. Generally in these instances the faculty is a second or third to the dominant.

**Separation:** Separation is the ability to group quantities of objects in such divisions as to form an able judgment of their places and amounts by averages and to distinguish their relative amounts when there is little opportunity to count them in detail; thus it is much like quantity in its action, though it operates as an aid to the sense of touch and perhaps to the faculty of Language in its consciousness of musical harmony and rhythm. Generally the whole faculty of Number is secondary to Language when music is the latter faculty’s dominant mode of expression.

**Sympathetic Responses:** In some mentalities the faculties of Language and Form, one or both, are extremely sympathetic with the faculty of Number, which calls upon them for its symbols. Number, in turn, is closely related in some mentalities to the faculties of Reason and Construction, to each of which it renders invaluable service in furnishing the statement of quantities.
Dependence of Number on Form and Language Symbols:
For some years the writer was puzzled to understand why all the "lightning calculators" of whom he knew visioned their arithmetical problems as clearly, apparently, as if those problems were worked out in actual figures. If such visioning of figures were the universal habit of natural calculators, the logical implication was that the origin of numbers was in the faculty of Form. Evidence opposing such a conclusion was found in the well recognized fact that many artists and designers who have large Form ability are notably deficient in calculation. More opposing evidence was incidentally furnished, first hand, by a Number prodigy, young A. B. of Albany.

When A. B. was twelve or thirteen years old the writer happened to be in the same railway coach with him, but did not know who the lad was—in fact, had not known of his existence. Observing the boy's phenomenal Number ability, the writer questioned him and drew forth the admission that "Numbers were easy for him." Later, a fellow passenger related young B's history, and induced the boy to give some demonstration of his remarkable Number ability. When the boy was asked how he made his marvelously rapid additions of six dollar and cent places, carried into millions, he answered, "I don't know. I hear the figures faster than I can say them. I can't hear all of them, but I know they are there. I hate to write them down." As a matter of fact, long before he could read or write he had made unrealizable calculations. It is evident that this boy did not call on the faculty of Form in his number feats. He did not largely visualize the figures; instead, he relied on the faculty of Language for his symbols.

Simple Mental Formulas: The arithmetical prodigy deals with units that are all alike, with so many ones compounded in simple ways. The mental operations which he carries on are largely those of memory symbols and groupings of exactly similar signs which are without complex relations. Each calculator seems to have his own methods, not using the common methods of arithmetic. The formulas he uses are few; the relationships are few; and the individual unit values are essentially alike—all following the same categories of kind. The stress of mental operation is chiefly that of Number memory. In teaching and the use of arithmetic the greatest factor is that of making clear the processes of the subject, rather than that of prolonged use of example study.

Because the rules of notation, addition, subtraction, multi-
plication and division apply equally to all calculations as methods of determining the variation of all quantities from the quantity unit, one, the activities of the faculty of Number are comparatively simple, and explain why common arithmetic and calculation are readily understood by a large percentage of students, and why young people often master with comparative ease the calculations required in clerking, counting and the simpler office positions.

Some Arithmetical Prodigies: Face a, Fig. 50, is that of George Parker Bidder (1806-1871), an English calculator of surpassing ability. He made marvelous calculations at the age of six or seven years; in years of maturity he was able to master algebra and the higher mathematics. Bidder, and also his father and his brother, who were good arithmeticians, visualized his figures. He could only work out his problems by visioning them as though they were written on a mental blackboard. Unlike the great majority of arithmetical prodigies, Mr. Bidder had large power of analysis and large constructive ability. In early maturity he turned his attention to railroad, dock, and engineering construction of a high order; associated with Robert Stephenson, he became the greatest railroad engineer and engineering authority of the time.

Face b, is that of Karl Gauss, a Hollander. At an early age he showed large arithmetical ability; he could immediately answer any arithmetical problem propounded to him. He was able to acquire a good education, but he disliked the languages. Mr. Gauss, like Mr. Bidder, became an engineer of high constructive ability and of great power of analysis. He always used figures as his number symbols, sound symbols being distasteful to him. This nose is long and wide, the alae somewhat retracted and heavy on their upper side, which indicates that his Constructive faculty was larger than his Reason faculty.

Face c is that of Jaques Inaudi, an Italian sheep herder, born in Piedmont, France. He was early taught the names of the figures; but for many years afterward he could neither read nor write. His forehead was extremely short forward and sloped rapidly back. It was uncommonly wide, and before the ears seemed to swell to an extent that resembled a deformity. There is no record of any calculator who could equal Inaudi. He could easily remember any fifty-two numbers stated to him in rapid succession, and he could multiply any number that he could remember “ten times as fast as the figures could be stated.” He could immediately begin giving
the answer to the double multiplication of the cube of any twelve numbers, requiring the memory of at least 1762 numbers and places; beginning his answer at the larger, or left-hand, quantities, he would answer as fast as the multiplier could be stated to him.

Inaudi could remember only seven or eight letters of the alphabet when they were stated in sequence, and he found great difficulty in learning to spell. But, notwithstanding his inability to remember alphabet sounds or even ordinary words, Inaudi made his calculations by sound symbols; he could not, even with ordinary facility, remember written numbers, symbols, or drawings or designs. His perceptions were of such low power that he was compelled to count even less than twenty sheep in a flock, in order to know that they were all there. He disliked any form of printed or written questions or problems, urging always that any such should be read to him. He could, however, carry on a conversation foreign to his problems while making elaborate additions, subtractions, multiplications, and extractions of roots, often answering irrelevant questions while arithmetical problems were stated to him.

Inaudi was offered every opportunity to become a great mathematician, but after considerable study and coaching he found that number equations beyond the first degree were difficult, while the higher forms of mathematics and calculus were practically impossible; these latter required fair Reason and Construction, in which he was very deficient. The mutual exercise of Reason and Number abilities, or of Form and Number abilities was restrictive and distasteful to him, but his Language and Number abilities could act mutually and separately at the same time.

Faces d and e have large Number, but it is not abnormally predominant as in the faces a, b and c. The mentalities d and e are fairly evenly balanced, as needed in the mentalities of cashiers, bookkeepers and in general business memory and calculations. Face d, however, has the powerful analysis and the essential Construction and supporting Form of the Accountant; with these there are high Executives supporting the accounting faculties, and these furnish the general basis for controllership. Face e is narrower in the forehead at Number and Language, and in the nose at imagination.

Essential Differences: It is necessary to the vocational counselor and to the employment manager that he understand the mental relations and products of the faculty of Number, as
well as that he should be able to rate its proportionate size. One reason for this is that a medium sized faculty may work fairly well for a brief time, and then due to its fatigue, it may become faulty or erratic.

But great errors have arisen in another direction, and this is particularly true in the educational phases of the work. These errors have sprung up in the commonly accepted idea that mathematical ability is a functional or faculty continuation of arithmetical ability, that it is simply a more technical expression of the same faculty abilities, of the same mental character. This assumes that aptitude in the arithmetical ability makes certain a natural aptitude in the domain of higher mathematics. This premise is not true, and we shall consider the differences between these two forms of ability after a brief analysis of the natural facts and mental products of Number.

**Fundamental Concept of Number:** One property of things, or objects, is number. This property of things we express as units or as parts of things. The information given us by the recognition of number and of the numerical relations of things is of great value. The importance of these relations is set out by the fact that a tentative analysis of knowledge implies that there are only fifty-three words in the English language that are as large in concept as is the natural fact of number.

The first concept of number is the fact of parts, or more than one like or unlike parts. From the fact of there being more than one number, thing or object or part, there arises the concept of separation, of ratios, and of analysis. More than one thing in number, except in primary elements of a class, implies unlikeness of parts of the things numbered. In unlikeness arises the idea of diversity and difference. The fact of more than one number is the simplest expression of difference—a difference simpler still than that of form, because the difference of number may relate to like objects as fully as to unlike objects. Like objects may be different in fact but not in form. Diversity is plurality of parts plus unlikeness of parts.

**Contrast in the Way Number and Form Perceive:** Just as the faculty of Form perceives continuity through connected and successive objects in near relations, so the faculty of Number perceives continuity by the succession or repetition of units, one after another, like or unlike, until the sum is reached. Through the knowledge given as information to the mentality by plus, or by again and again, we can carry the idea of continuity in differing things or in differing amounts, until we
Number

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arrive at the idea of ratio, the facts we usually think of as quantity proportion.

The faculty of Number, using the information received concerning parts and the symbols of quantity, institutes the mental processes of addition which must begin with a unit and plus—with one and something more. Addition is in mental fact the primary act of the faculty of Number; the basis of its limitation to the relations of pure number lies in this fact. When the quantity becomes too high or the figures too complex, the mentality may become fatigued by it, may be confused by the amounts of the numbers thought out.

Carrying on the processes of addition gives the mentality the quantitative conception of connexity and of the statement that one plus one is two. When carried out with relation to a succession of similar things, we note them as a mass, a body, or a problem in relations. This conception is the mental associate of the perception of quantity seen by Form; but Form perceives quantity by mass, by surfaces, by actualities of shape and body, while Number perceives quantity by units, independently of size.

Careful weighing of all the factors in these mentality problems brought the following solution: (a) that the mental products of the faculty of Number are first momenta of energy rather than of either symbols of action or objects, and (b) that the faculty of Number must use either mental Form symbols or Language (sound) symbols to express its action: that is, as numbers have no other kind of mental symbols except those arising from Form (figures) and those arising from the faculty of Language (sounds), one or the other of these faculties must be used as adjutants to the faculty of Number.

Beginnings of Analytic and Synthetic Methods: As addition is the massing of numbers by units, so multiplication is an extension of addition by groups, or equal masses. These processes are simple forms of the beginning of synthetic methods, the gathering of substances, or functions, or methods into a judgment.

In a reversed order subtraction is a unit division of added quantities, a unit division of a mass, as one or more taken from a quantity, while division is subtraction by groups, a division by any number that can separate the whole into parts; a multiple severance of a mass. These processes are the simple forms of the beginning of analysis, and have an important bearing upon that ability of the faculty of Reason.

Arithmetical Problems Compared with Equations: Those
FIG. 52

- Reform
- Sociability
- The Aspirations
- Mathematics
- Functions
- Calculus
- Construction
- Mechanics
- Reason
- Algebra
- Inspiration
- Analysis
- Memory
- Relation
- Language
- Auditory Symbols
- Synthesis
- Periodicity-Time
- Succession
- Number
- Ratio
- Parts
- Diversity
- Arithmetic
- Form
- Quantity-Symbols
- Analysis
- Separation
- Color
- Geometry
- Attention
- Connexity
- Continuity
- Sight
- Touch
quantity problems carried on by the faculty of Number, which in themselves can be expressed by the signs of common arithmetic, are simple, as problems, compared with the problems and equations that can be elaborated by Reason. The problems of arithmetic are difficult in the use to which they are to be put, in the kind of quantities, in the memory of amounts and of tables, and in the meaning and position of obtained amounts and products, rather than complex in the nature of their functions and of their processes.

The difficulties, then, that enter into commercial arithmetic are chiefly in the uses of the facts found in commercial tables—in Longitude and Time, in Currency, in Avoirdupois, Troy, and Apothecary's weights, in Surveyor's measures, and in other tables and rates—and in carefully enumerating quantities and in properly filling in the amounts in blank spaces and columns.

**Essential Requirements:** Accurate Number memory and ease in Number memory are the prime mental requirements in many of the lesser commercial vocations. One may say that where the methods of calculation are comparatively simple though the operations are extensive or constant, as in bookkeeping and cashiering, fairly large Number ability is required; it is required from the standpoint of accuracy, of endurance, and of pleasurable satisfaction in one's work.

There are many vocations arising from Number (the various kinds of arithmetic), and in a great many other vocations Number comes into direct play. Business, where estimates of prices, quantities and proportion are required, the trades and arts, where measurements and distances and proportions are required, and the professions, where weights and measures as well as measurement and quantity statements are often extensive, all use Number; everywhere one finds the common application of the faculty of Number in specifications, currency counting, the use of tables of weights and measures, and frequently in the reduction of higher and complex mathematical answers to feet, quarts, pounds, hours, degrees, and other common quantity measures. In many of these vocations, however, it is not necessary that Number shall be large and rapid, but that it shall be fairly certain. The faculty may not be used enough in some of them to give it the sense of fatigue and uncertainty.

**Higher Mathematics Reflective in Nature:** Arithmetical ability is essential to advanced forms of mathematics as a means of statement and interpretation of the answers, but it
is not direct evidence of aptitude in vocations which require mathematics and mechanics. The higher forms of mathematics and mechanics are reflective in their mental activity; they are analytic and synthetic problems and processes. Algebra, geometry, trigonometry, and calculus keep mounting in complexity as problems of relations, ratios, transitions, and negations. These grow more and more complex and reflective as the problems are more involved by conditions.

**Vocational Distinctions:** These mental facts explain why many persons who are extremely apt in the arithmetical use of numbers fail, even when possessing fine quality, in higher mathematics, mechanics, and physics, which arise from analytical reason. Moreover, these facts have immediate bearing on the problems that arise in vocational counseling; they reveal the difference between the counter's ability and the accountant's analytical ability, the difference between the carpenter's arithmetic and the mechanic's functional mathematics, and between the architect's details in numbers and the physicist's equations of quantities, thus making plain the unwisdom of vocational selection based solely upon natural aptness in the arithmetical form of numbers for positions requiring higher mathematics and mechanics.

Careful prolonged observation of the careers of individuals through their youth and mid-maturity will frequently give indisputable evidence which corroborates these mental differences in problems that on first glance seem to be alike.

**Youthful Aptness No Criterion:** Judgments of the apparently dominant abilities based upon early educational aptitudes, as shown in grammar and high school work, are too often mistaken to be of use as criteria. The abilities that appear to be predominant in their youth, say, under sixteen years of age, are not in the case of many individuals those abilities which stay dominant through their maturity. One reason for this is the fact that the early years of one's life are the years of accumulation of impressions and perceptions and of the retention of fact symbols, but are not the years of reflective elaboration or of correlation of information with experiences, felt, seen or understood, or of executive intention manifested in practical ways.

The experiences of the early accumulative faculties (Form, Color, Number, Attention, Language, Memory), would be valuable criteria of the young person's ability in the trades and arts arising from those faculties if those experiences were not so limited, and if there were no other faculties beyond those
DIVISIONS
COMMERCIAL EMPLOYMENTS AND PROFESSIONS AND ARTS
TRADES AND SKILLED VOC.
ACCOUNTANT C.P.A.
- CONSULTING
- SYSTEMIZING
- COST
ACCOUNTANCY INSTRUCTOR
BOOKKEEPER
STATISTICIAN
ENTRY CLERK
PRICE CLERK
BOOKKEEPER

ACCOUNTANCY BUSINESS COLLEGE

ACCOUNTANCY TEACHER
BOOKKEEPER
STATISTICIAN

LIFE INSURANCE

AGENT BROKER
APPRAISER ADJUSTER
ACTUARY ASSISTANT

INVESTIGATOR
CREDIT MAN

CREDIT AGENCY

BOND STOCK PRODUCE
GRAIN BROKER

BROKERAGE

BOND STOCK PRODUCE
GRAIN BROKER

CASHIER TREASURER
RECEIVING CLERK
STOCK FLOOR MANAGER
SALES MANAGER
MERCHANDISE MAN

STORE KEEPING

EXAMINING BILLING
POSTING CLERK
BUNDEL BOY

TRANSPORTATION

TRAFFIC MANAGER AGENT
ROUTE AGENT PAYMASTER
FREIGHT CLERK STOREK'R
STREET CAR DISPATCHER
PURSER

RAILROADING

TRAFFIC MANAGER AGENT
ROUTE AGENT PAYMASTER
FREIGHT CLERK STOREK'R
STREET CAR DISPATCHER
PURSER

TRAFFIC

SHIPMASTER MATES
PETTY OFFICER ENSIGN
WARRANT OFFICER
QUARTERMASTER AGENT
NAVIGATOR

STEAMSHIPING

SURVEYING

SURVEYOR TRANSIT MAN LEVELMAN RODMAN
MARINE SURVEYOR CHAIRMAN
MINE SURVEYOR

MEASUREMENT

WEIGH MASTER SCALE MAKER GAUGE MAKER

WEIGHER LUMBER MEASURER

FIG. 53
accumulative ones or aside from them that could become dominant later in life. The potential powers of higher faculties can often be seen in the relatively larger head signs than those of the same faculties seen in the face. The vocational counselor must ever bear in mind that no faculty, however apt, can be made the criterion of a person's ability in any vocation the prime factors of which are carried by other faculties. This is due to the fact that the dominant faculties, even when not given a chance for action on their own account, are blindly groping for opportunity to express themselves, and are jealous of the activity of their inferiors in power. But this groping of these powerful faculties seldom pushes them far enough to self-determine a specific vocation, or to show that a certain line of work is the line that should be followed.

The vocational counselor must keep in mind the reason why this self determination is difficult under various conditions. We have called attention to the fact that in each of the more distinctive vocations, the essential or supporting faculties vary from those of other vocations growing out of the same dominant. These essential (or second power faculties or subfaculties) or the supporting (second, third, fourth, etc., power faculties or subfaculties) do not make their relations to the dominant known to the individual as essential or supporting to a particular vocation. These facts are matters of reasoning, discovery and natural laws, and do not reveal themselves except under long and exacting investigation by one who fits himself for that task. These facts will appear more and more evident as the student proceeds with this course, and while they do not confuse the gaining or practice of this profession, they do necessitate their observance and the study of the combinations of essentials and supports. Thus if the bookkeeper leads with calculation, then following in diminishing order with object-form, Memory and observation, the statistical clerk leads with calculation and follows in diminishing order with analysis, synthesis, imagination (in some cases), and Memory. The accountant is removed from the faculty of Number vocations by the fact that his dominant must be analysis (synthesis and judgment closely following), essential calculation, with object-form, Attention, Stability and Integrity in this order.

Wherever in the arts, trades, sciences or in the industries there are measurement and arithmetical calculations of a continuous and severe character, the faculty of Number should be the dominant or a fairly close essential or supporting faculty.

In many vocations there is an opportunity for correction
and checking up of the calculations as they go on, and the fact of an occasional error is not serious except as to the imme-
diate time lost.

In other vocations where the additions are extensive and the carried figures are in larger amounts, or where there are fairly complex problems and the totals are not readily checked, as in accountancy, auditing and similar vocations, it may re­quire an extensive review to locate an error. In these voca­tions the Number faculty should be relatively large and abso­lute in its operations. It should be able to work intensively for the total day's work and for continuous days without unusual fatigue.

In all of these cases a faculty less than an average of the required dominants, however high the dominants, is apt to be under duress, and to be liable to error under fatigue. Where Number is the dominant, even in a moderate quality man, it has the advantage of being able to work at its maximum gait longer than the same general ability in a tertiary proportioned faculty in a higher grade mentality.

The relations of this faculty to the greater number of voca­tions can best be studied in the vocational descriptions given in "How to Choose the Right Vocation."

Face a, Fig. 54, was a celebrated Roman general and gov­ernor who kept his quantity amounts in his memory; he had an enormous memory of number data. Compare the marked Number region of this face with the small Number region of face d. Face d is that of a celebrated author and thinker who confessed that "After much effort I am chagrined to admit that I cannot remember the multiplication table with any degree of certainty."

Face b is that of Francois de Kellerman, Duke of Valmy and Marshal of France, celebrated for his memory of the army units of Europe before and during Napoleon's time, and as a general, administrator, revolutionist and peer of France. Note the enormous width of his forehead at the level of the eyes. Compare this face b and that of the mathematician, face c, with the low Number faces g, h, and i.

Faces j, k and l have only moderate Number abilities, hardly up to the averages of their other abilities.

Face e is that of an astronomer who began his vocational life as an artist and painter. His fascination for observing the planets and stars led him to study astronomy. Astronomy was beginning to require a knowledge of higher mathematics and physics; he mastered without difficulty the then required
problems of arithmetic and geometry. But mathematics and physics were quite different and required Reason and Construction rather than his dominant Number and Form, thus he had to give years to reflective training in order to gain their mastery. In this mastery he became celebrated as a philosopher and discoverer rather than as a mathematician.

Compare face e with face f; one cannot imagine face f, however fine the quality, ever becoming an arithmetician, mathematician or a philosopher.

Face a, Fig. 55, is that of a very competent analyst of statistics, where the ratios and proportions of quantities are of great importance, the memory and arrangement of facts an important part of the work, and where fair statement of conditions holds third place. The consideration of economic values and of personality are of minor importance.

Face b has Number as its decided dominant, closely followed by Form, Attention and Caution. Economy and Constructive-Imagination are nearly as full. This is the face of an extremely able bank cashier.

In face c Number is low and Language, Reason, Construction and other faculties very high. These instances are illustrations of the readily seen differences in the size of the faculty. This face would not find either ease or success in a vocation where arithmetical ability was at all necessary.
We see in this face, however, that Language, Reason, and many other faculties rank high; that Form and Color are fairly capable, fit for the ordinary perceptions in life, and have some relative power, though not nearly as strong as in faces a and b.

Fig. 56 is the face of a mathematician who enjoys the vocation of designing complex weaves and the analysis of loom weaving in the production of novel and beautiful fabric effects. The faculty of Number fulls up from the zygomatic arch to the top of the brow in effort to sustain itself against the more powerful analysis and imagination, while object-form is almost equal to the other subfaculties except analysis. These are also an ideal combination for the mathematician.

The long face has great persistence and mobility, though the hollow cheeks indicate liability to digestive and assimilative troubles.

This face, with the exception of the dominant analysis, is often found among competent loom fixers, among men who work in fabrics as designers of the weaves of plain colors and velvets. The almost even development of calculation, imagination, object-form, observation, and the slightly predominant analysis, is a combination of abilities that can turn to a wide range of vocations, and the vocational counselor may need to make allowance for the personal equation.
of choice by the individual, may need to take into careful consideration the various deficient faculties (in this face note Language, Intuition, mental-focus, order, and several of the Executives), some of which may have a demerit effect upon particular vocations.

Fig. 57 is the face of a first-class bookkeeper, in which calculation and separation are dominant, with object-form and individuality almost as large. The broad end of the nose indicates high mental-focus and good observation. The nose is straight and broad at the bridge; this is high enough to give moderate energy, but not enough to carry on an aggressive campaign for increase of salary or active advancement in position.

The end of the nose is flat below and, as we shall later learn, indicates a moderate synthesis and less than moderate analysis. The lower part of the face is some what slender, and lacks intensive Executives.

As a matter of comparison with the bookkeeper's face, note Fig. 58, the face of a very successful certified public accountant. In this face calculation and separation are secondary to the dominant analysis, but are slightly larger than object-form, imagination, observation and fact memory. The Executives in this face are all much higher than in the one preceding, more positive in action and severe in resistance. In later studies these various regions will be taken into consideration. These Executives dislike the routine of bookkeeping, the absence of authority, the lack of opportunity to determine ways and means of accomplishment. The dominating analysis is anxious to exert its power in solving problems which would worry the mentality of Fig. 57.
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CARTRACER
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NAVIGATOR


Number in Its Relation to Engineering:

Number, in pure engineering, finds its principal uses in physics, chemistry, mechanics, dynamics, in its specification of units of quantity, length, surface, volume, weight, time, and energy. Number, in the industrial application of engineering, is ever present in all orders, there representing quantity, descriptive numerals, unit prices, and extensions. In modern scientific methods of record keeping and cost accounting, large Number is an essential supporting faculty.

Numbers, of themselves, have no utility or significance—it is only in their association with specific units that they become valuable. Thus, no statement involving numbers is complete without specifying what unit it represents. It is because of this representation that different measures of units can not be associated in any arithmetical processes. There are certain conditions under which this is done, but the result is always represented by a new unit. This is particularly true in the field of engineering and science, in those problems involving units of space, energy, and time, from which very complex resulting units are evolved.

To simplify the complexity that these problems involve, it is necessary to assign as functions, and to think of them as functions, the interrelationship of certain variable factors that are dependent upon one another, in order to reduce to simpler equations the conditions represented so that they may be solved by the arithmetical processes of addition, subtraction, multiplication, division, et cetera, and then through substitution and assignment of values (dependent upon the special conditions) to certain variables, specific numerical values may be obtained for the unknown variables comprising the functions.

Thus in the ultimate analysis, Number is the vehicle upon which the reasoning processes of engineering mathematics are executed, and only upon which specific results can be obtained. In this field one must be constantly alert to the factors involved in a problem to guard against error through the combination of factors that are unrelated. This is an excellent illustration of the interrelationship of Reason with Number, in which case, Reason predominates but is dependent upon a large supporting Number faculty. In case of error, the result is quite as disastrous upon whichever faculty blame may be placed. Correct reasoning, supported by only small Number, which introduced a simple arithmetical error,
Number gives a result absolutely as wrong as an error resulting from incorrect reasoning. To illustrate, we have two factors which are to be multiplied by each other, one of which is zero, the result is zero, regardless of which factor possesses that value. And similarly, in engineering practice where results alone count, a structure under stress will fail where an arithmetical error has been made in the calculation of the sizes of its component parts.

Number gives the engineer a sensibility to practicality, and keeps him from soaring in the realms of imagination and reason beyond the limits of practical application. It tends to keep his reason and constructive imagination along the lines of thought that deal with practice. To a real engineer, a principle is of no interest unless direct, concrete application can be made of it. In studying higher mathematics, much is lost in the solution of algebraic equations involving many variables, the solving of problems of integral calculus purely illustrative of abstract principles, and the manipulation of the functions of differential equations through not associating these principles with actual mechanical or industrial problems.

There is some question as to how much stress should be placed upon theory. The average engineer does not encounter need for his highly technical knowledge more than five or ten per cent of the time, and through the habits of study acquired in college, it would be possible for him to pick up new, quite as easily as to review, those principles for which he encounters need in his work, but which need is not sufficiently general to warrant study by all students.

The principal branches of engineering and those involving the greatest use of numbers are mechanical, electrical, civil, and mining. It is a misuse of the term "engineering" to apply it to any vocation outside of those arising from a combination of the faculties in the Science and Art groups, neither is it right to apply it to all these.

The most successful engineers, measured by their constructive results, are those who, through their executive faculties, direct their efforts to industrial administration or promotion and use their engineering education simply as a background, or to furnish the atmosphere necessary to their work.

Where Large Number is Required:

Large Number faculty is required where there is a somewhat constant vocational use of the faculty in various forms of
calculation; where the tables in use are extensive or many, where there is necessity for certainty in the calculation with little opportunity for recounting, where the work is clearly distracting to the attention, and where rapidity in calculation is important.

Many people with a comparatively moderate Number ability can calculate slowly and with certainty; sometimes there are found those who can use number quite rapidly for a brief time.

But the vocational counselor should be wary of the disappointment these kinds of mentality may meet when they have to use Number ability all day long, when there is a continuous strain upon the faculty. The faculty is then liable to much earlier fatigue and to mistakes that a larger faculty would not be subject to. To a large faculty, even in an individual of moderate quality, intensive calculation is not ordinarily a tiresome mental work, not as tiring as heavy reasoning or constructive work is to an equally large faculty of Reason or of Construction.

It is a law of the dominant faculty that it can endure much greater effort, for a longer time, with less error, less rest and repair, than any secondary faculty in the same mentality.

Nearly all vocations need Number in some degree, just as these various vocations need some degree of nearly all other faculties, but not as important assistants to the dominants.

It will be less difficult to determine what vocations require Number dominant or high, since it is a sense faculty and its use is seen by the observer. However, it is none the less useful to the vocational counselor and the employment manager to study the facts of Number relations and the analysis of the faculty.

Many of the occupations where Number is a dominant have other closely required faculties.

**Some Typical Vocations Where Number is the Dominant Ability.**

**Price Clerk:** The price clerk must be rapid in calculations, in comparisons and verifications; he should have a good knowledge of office practice, typewriting and stocks. Number dominant, facts, time and system of Memory in that order, observation large, and tendency to routine large enough not to worry over incessant dealing in details.

**Receiving Clerk:** Must be able to take charge of incoming materials and check them against the invoice, exercising judg-
Vocational Counseling

ment as to their quantities, qualities and condition. He sometimes needs to make an original list and statement of condition or quality of all incoming materials, to be afterward checked up when the invoice is received. This vocation departs somewhat from what may be called routine. It requires dominant Number, scrutiny, Memory, object-form, Caution, Industry and equity.

Stock Clerk: Must know how to receive and check up supplies for the offices and keep a record of materials received and given out to the different departments, and where continuous stock taking accounts are used, must know how to keep such accounts. The order of dominance is Number, Attention, object-form, Memory, Caution, Industry.

Stock Chaser: Must know the vocations of Receiving Clerk and of Bill Clerk, and follow up materials routed to various departments, report their progress to the proper superior, and detect any cause for delay. He should know how to read drawings, have a good sense of processes and of the nature of the work. He should have large Number, Attention, Memory, Reason, Caution and Industry. There is nothing of a routine nature in his vocation.

Statistical Clerk: Must know how to compile, check, tabulate, correct and work out statistical facts and their relations to the industry. This vocation requires fine arithmetical ability (calculation), which probably should be the dominant, but analysis, synthesis, imagination and Memory need to be in good supporting positions.

Bookkeeper or Ledger Clerk: Much detail and routine. The bookkeeper must understand single and double entry bookkeeping, keep a systematic record of the money transactions of the business where employed, in variously organized sets of books or cards, and he may take trial balances and in some not too complex accounts prepare statements of the results. This is a medium quality vocation. It requires calculation dominant, with essential object-form, supported by Memory and observation; in the Will, Industry and Economy should be fairly large.

Typewriter Machine Bookkeeper: Much detail and routine. Requires the same abilities as the regular bookkeeper, but must know how to make loose-leaf accounts on a typewriter adding machine.

Comptometer Operator: Must know how to operate a calculating machine, and requires high calculation, large
object-form and motion-form, large observation and mental-focus, with Industry, Caution and Mobility.

Cashier: The cashier, except in large banks and trust companies and in some of the corporations, receives and receipts for money paid to the firm, disburses money on proper authorization, keeps accounts of money so handled in the first instances, and should have experience in the rapid handling of money and the detection of counterfeit. Generally he should have a knowledge of accountancy, of common business law and banking practice, with a good memory of facts and of faces.

Number is dominant, with observation, scrutiny, Caution, Stability, Economy and Reason in the order given.

In small positions, Number, Attention, Memory and Caution may be all that are required in vocational mastery.

Bill Clerk; Order Clerk: Routine. These clerks are not required to be of high quality, but many young people begin life in simple clerical positions and when of high quality work up to higher positions through having other faculty dominants. The mental requirements are about the same as those of bookkeepers.

Paper Dealer: The paper dealer has a wide variety of the uses of Number, as in the price, sizes, folding, number of sheets that will cut from the ream in the most favorable sizes, margins for waste, and other numerical factors. This Number should be supported by a strong range of commercial faculties and a keen sense of touch.

Timekeeper: The timekeeper must be able to collect and summarize the work time of employees in all departments, keep track of the rates of wages, and compute the amount due each employee. The dominant is calculation, essential Memory, supporting vocabulary, object-form and observation. Where a large number of workers is employed, Caution, Industry and Mobility well rated are valuable aids.

Levelman: Needs large calculation, essential object-form, supporting observation, Construction and Mobility. The levelman with many surveyors does somewhat of the plotting and calculations, and should be able to aid in almost any of the ordinary work of surveying.
A RECONSIDERATION of the
REGIONAL INFLUENCE AND PRODUCTS OF NUMBER
through
QUESTIONS AND ANSWERS

Question: What is the nature of Number?
Answer: Number is a property of things, expressing the fact of units or parts and the relations of multiplicity, or of more than one.

Question: Can one learn numeration and the other parts of arithmetic, spoken of as the science of pure number, without paying attention to the sequences and results arising from the numerical quantities of things?
Answer: One can learn by the use of symbols the processes and the principles of arithmetic, pure number, or even practical arithmetic, without reflecting on or paying attention to the functional relations expressed by the terms diversity, continuity, succession, function, or connexity, or to the problems of higher mathematics or the calculus.

Question: What faculties are in closest working sympathy with Number?
Answer: Form and Language, either of them furnishing symbols and in other ways aiding Number with their association.

Question: What other faculties follow in frequency and in necessity of working with Number?
Answer: Reason, in the higher forms of elaboration of mathematics and of mechanics, where quantity relations are of vast importance; and Construction, where the adjustment of parts depends upon exact measurements for use in mathematical complex calculations of size and stress.

Question: What value to the subject of vocational counseling is the study of faces of phenomenal calculators and arithmetical prodigies?
Answer: The study is of value in definitely and unquestionably establishing the regional location of Number, and
further in defining some things in the nature of Number relations to the other mental faculties and to the vocations growing out of them, thus aiding in delimiting some of the mental organs and defining some of their mental differences, as those of mathematics and arithmetic, and the relation of Language, Number and Form.

**Question:** To what else does this study lead in one’s judgment of vocational abilities?

**Answer:** That when problems are complex in function, law, or relations, one must look for their solution by faculties in the reflective regions of the mentality, faculties capable of carrying on complex equations.

**Question:** What other important factor in vocational counseling do these facts demonstrate?

**Answer:** That understanding numbers and understanding the equation of numbers demand different mental abilities, which are indicated by different facial regions of influence.

**Question:** What is the nature of the advice the vocational counselor should give in relation to the difficulties of the faculty of Number in the operations of practical arithmetic and its use?

**Answer:** He should advise the careful study and memory of the rules, tables, quantities, and places of the answers. The best way to study arithmetic is to practise these parts of arithmetic, and to remember the tables, rules of multiplication, division, addition and subtraction.

**Question:** In what general manner do these difficulties differ from those of mathematical study and use?

**Answer:** In the latter the difficulties lie chiefly in reflective efforts in understanding the means and in stating the formulas in the solutions of functions, processes, equations, transitions, co-ordinates, etc., of higher mathematics.

**Question:** What illustration can you give of the difference in the mental faculties required for arithmetical problems and for those of mathematics?

**Answer:** In mechanical engineering and in accounting the simple processes begin in Number and Form, but the complex problems must be solved by large Reason and large Construction through culture of these faculties in the processes of analysis, synthesis and constructive thinking. This prevents one from predicting the sciences and other vocations growing out of the higher faculties as being determined by even
great arithmetical ability, or the range of the perceptive art faculties.

**Question:** Why may one become able in pure numbers and practical arithmetic and still find great difficulty in succeeding in higher mathematics, mechanics, or accountancy?

**Answer:** The first are carried on by the faculty of Number, which is remarkably able in the retention and in the repetition of similars of quantity; while higher mathematics, mechanics, and accountancy are systems of highly complex analytical and synthetic problems varying greatly in methods of solution, in substitution of symbols, and in the quality or expression of results.

**Question:** What do the terms higher mathematics and the calculus imply in the sciences of mathematics and mechanics?

**Answer:** They are the science of relations, equations, and functions, that specified things or acts have to each other, and are elaborate, reflective processes necessary to calculations of great complexity in questions of power, time, substances, distances, directions and transits.

**Question:** What value has the recognition of these relations?

**Answer:** These relations carry the art of numbers out of the sphere of Number into the sphere of Reason.

**Question:** Beside these differences, are there other prime diversities of a vocational order?

**Answer:** The problems of higher mathematics are generally extensive and involved, having uncommon relations and adverse factors requiring prolonged attention and wide congregations of related facts.

**Question:** What general classifications can be taken as the vocational basis of difference between arithmetical vocations and the mathematical vocations?

**Answer:** Arithmetical abilities are largely required in the trades, in the arts, and in commerce; mathematical abilities are largely required in the sciences, in technical construction and in physics.
MERTON COURSE

VOCATIONAL COUNSELING
and
EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

BY

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Medicine."

LESSON FIVE
The Regional Influence and Products of Attention

New York
MERTON INSTITUTE, INC.
1920
The Regional Influences and Products of Attention

Specific Location of Attention Influences:

The region of influence of the faculty of Attention is a narrow strip located in the crest of the end of the nose; it is about one-third of the length of the nose from the tip to the indenture below the brows. As the mental influence exerted on the facial region increases in relative power, it may urge the end of the nose forward, or it may develop it downward, or it may broaden the end of the crest.

The length forward from the face is estimated from a base line back of the alae of the nose, and the general plane of the face; this is chiefly used in rating observation, or alert attention. If observation is not the largest of the expressions, or subfaculties, of Attention, the other subfaculties must find a way to express their power independently of observation, and we find that this is done by development in other directions to be noted later.
Extreme observation is shown by the nose growing far forward, and it may be thin and sharp ended. The thickness, or breadth of the end of the nose, does not add to the size of observation but to other subfaculties. For this reason the forward length as shown in Fig. 60 is the source of comparison with the rest of the face. The upper lip region just under the nose has its own signs, hence it cannot be made the main basis of judging the forward projection of observation. The base line of the parenthesis of the mouth and wings of the nose are the principal sources of measurement.

Observation:

Outward distance from the base of the nose measures the kind of Attention we can call alert attention, or in more common terms, general attentive observation; hence we note this as the subfaculty region of observation, and give it its own percentage of power. A student of this course, Mr. J. E. Johnson, called this form of Attention “automatic observation,” which describes it as nearly as mechanical terms can.

The Lookout Subfaculty:

In sense - responsiveness observation operates like a signal man; it is on the lookout for danger or for anything that may be of advantage to any of the other faculties. It reports what it receives to the faculty or faculties that are by their nature especially interested in that particular happening, and in so doing it sets up a new or an intensified activity in that faculty or the group of faculties. As signal man, Attention renders indispensable service to many men of many callings, as to the locomotive engineer, the pugilist, and the loom tender.
Large observation compels Form and Color to more activity than would be the case with observation small or medium, and acts to make the individual alert to passing interests and events that are observable; among these interests or facts is the observation of attitudes of others, the peculiarities of their expression, the general relations of incidents to results and the uncommon fragments of information growing out of these.

Observation versus Analysis:

This observation must not be confused with analysis. Many people think they are analysts because they observe what is going on around them in detail, or are able to notice a variety of objects, actions or places in rapid succession. These same people are often thoroughly oblivious of any of the laws at work as causes of the facts they observe, or of the influences at work in bringing about the results observed. Itemizing a variety of facts is not necessarily analysis of fact relations, as superficial reasoners often think. Unless the sign of large observation has as an associate a fairly large sign of analysis it is not apt to pay attention to causes or laws, nor to carry its efforts through a careful series of steps in problems of investigation or of consecutive procedure, which is the function of Reason. People who are simply close observers but call themselves analysts, are easily placed by the fact that they seldom, if ever, make an analytical statement or deduction, and that generalities are constantly evident even in their very claims to being analysts.

The vocational counselor should carefully distinguish between the general observer, the capable memorizer of obvious facts and items, on the one hand, and the reflective analyst and critical thinker on the other. In this connection it is well to compare the mental processes of this study with those under a later study of Reason.

The recommendation to cultivate observation includes the practice of accuracy in demarking relations of actions and objects; of care in dwelling upon the main points of what one wishes to remember with regard to future uses and probable needs; of tracing the occurrences that have bearing upon what one already knows, so that specific Memory is aided in recollection; of reading concise thinkers and gaining conceptions of the objects or themes in which one is interested. Out of the great mass of daily occurrences one is compelled to observe there are apt to be a few that have merit as memory
facts, and these should be emphasized in the mentality, for future use.

When observation and mental-focus are only moderate, scenes of what has been observed are likely to be chosen at random and to be disarranged; the unimportant matters are often mixed with those that clearly have merit, the recollection of incidents and circumstances being so jumbled as to be of little future use to the mentality.

**Mental focus:**

The width of the end of the nose, where M-F is marked, gives the relative size of the subfaculty region of mental-focus, a sign of Attention measured by its breadth. When the nose is thin at this place, this kind of Attention is small or medium, as indicated.

When the end of the nose is short outward and downward, commonly noted as the pudgy nose, or is a mature condition of the often seen child nose, mental-focus is small even though the nose is comparatively broad back of the crest, because the sign forms the side margins of the crest of the end. In the childlike noses the crest is almost invariably quite oval, the breadth actually falling on intuition, not on mental-focus. In some instances, as in the nose of Socrates, the crest is flat and broad, and mental-focus is large, though not the dominant. In Fig. 64, the nose is oval and the fullness is in intuition, back of the crest; the sides of the crest of the end of the nose fall away into a broader region just back of mental-focus.

Mental-focus has, as we shall note later, much of the mental habit of invention and of imagination, under which habit it
brings as great a gathering of related ideas as its laws will admit, in its preparation of mental visions for the use of Construction, Reason and the faculties beyond. The inhibitive powers of mental-focus, acting under the commands or suggestions of other faculties, effect a mental action quite contrary to the usual attitude of the child, the youth, and the general observer. This is one reason why the confined attention of the school-room is fatiguing to the child mentality. It is a voluntary enforced activity that has not yet become "of age," as it were, that must reach further maturity before it easily can exert its own power of confined mental habit and exclude or restrict the flow of impressions coming in from the senses and sense receptive faculties.

Adults with this faculty small or medium also find difficulty in carrying on prolonged consideration. We note this, because when mental-focus is unusually large and coupled with large Reason or with some other high power faculty, it gives the habit of persistently following a given line of effort.

As Attention is so closely related to Memory as one of the retentive faculties, mental-focus greatly aids in recollection and in the establishment of association of segregated ideas. As we have noted under the faculty of Memory, the association of ideas sometimes arises from the two or more ideas being much alike, sometimes from the circumstances under which the ideas are received and sometimes through coincidence, that is, the matter of the ideas happening at the same time.

Attention is just as markedly aroused by the antithesis of ideas, by those conditions where sharp contrasts are present, where there is the fact of extreme unlikelihood, or where there is astonishment, the unexpected, or the undesired.
Scrutiny:

When this activity of Attention is highly dominant, and inclines to the close scrutiny of things, the mental influence drives the sign forward and hooks the end of the nose more or less downward (see Fig. 63). This contour is particularly noticeable where the septum of the nose is relatively short. This relatively extreme development of the subfaculty scrutiny indicates a desire to persist in critical visual examination of objects and often an insatiable curiosity in personal interests. It gives the attentive habit and observation of the careful trader; it is the answer of the buyer to the “caveat emptor” of the seller. (Note the contrast of Figs. 63 and 64.) The action of scrutiny is not necessarily profound; to be profound it must be supported by large Reason or large Construction.

When this expression of Attention is large, it trends the mentality to close objective search, to minute inquiry, to the observation of the structure of fabrics, textures, sensible characteristics, and to examination for imperfections and faults, sometimes as a matter of utility, often from curiosity, sometimes as a means of defense against fraud. Thus scrutiny is often stimulated by some phases of Economy, while observation is often stimulated by the vigilance of Caution.

Judging Attention Signs:

We can thus distinguish the amount of the three general kinds of Attention as: length outward from the face, observation; width of the end of the crest of the nose, mental-focus; length of the nose peak or over-hang, scrutiny.

In Fig. 65 are six noses imposed upon one another, which show progressive degrees of Attention and different kinds of Attention. For convenience these may be arbitrarily
Attention

classified as follows: Childlike Attention, a noses; average Attention (general observation) b nose; alert Attention (keen observation) c nose; scrutinizing Attention, d nose.

When Attention is small, flighty and changeable (noses a and a), the end of the nose is short from the face outward, and has the stubby, childlike contour; such a nose is generally short from the brows downward, and is frequently retrosse.

This kind of Attention, which is also frequently found in adults, is characterized by a tendency to ask questions without attentively waiting to hear the answers, and to make irrelevant remarks. While it is superficially observing, it is easily distracted from any subject or any work, and is generally inconsistent in application unless outward compulsion is used to steady its habits.

This kind of Attention drifts into store clerking, into general kinds of changeable tasks, into jobs that do not require patience or persistence or consecutive detail and application. It operates against the opposite kinds of work; it is contrary to serious study or to elaborate detail. For these reasons, as it is always a minor faculty in the mentality, none of the occupations of Attention should ever be assigned to it.

Suggested Advice:

When Attention is below the medium, whether required as a supporting faculty or not, the vocational counselor should advise the urgent need of keeping alert to the observation of all that is going on around, to avoid distractions, to keep close application to the matters in hand. Any amount of flighty observation will not strengthen the faculty. It requires condensing into scenelike, orderly mental views all of the matters relating to an idea. It must aid in the fact of gathering memory substances for future use, and for the use of other
faculties. Negligence in a reasonable amount of attentive observation is a bad state of mentality, since it depresses the specific memory faculties as well as its own field.

Where there are liabilities to injury or danger from any kind of negligence, observation should be cultivated and stimulated to be on guard, the probabilities of a chance to receive injuries noted, the survey of preparation against accident to oneself or others should be considered, and precautions taken to avoid mechanical or other liabilities.

In social life there are a great many opportunities to exercise observation in favor of good demeanor and graceful expression of interest. These actions are generally classed as good manners, courtesy and elegance of habit.

Small observation or extreme mental-focus often defeat, through lack of momentary action, those courtesies which Amity and Sociability normally call into effect, and thus these faculties are underrated and good will lost, where in fact there is no intention of negligence.

**Intensified Attention Ability:**

Fig. 66 represents three faces which have the faculty of Attention extremely large in two of its subfaculties, namely, observation and mental-focus.

In faces a and b the ends of the nose are strong and well modeled. They indicate the power to sustain close and prolonged outward observation; the mental habit of bringing back for mental inspec-
tion things previously seen, as the (b) locomotive engineer's Attention, which visions the road ahead of him before his train gets to it; and the mental ability to focus the senses on matters for future use, as the hunter and the naturalist frequently do in observing the nature of animals and plants.

This kind of Attention, with the addition of moderate scrutiny (c), is of great value in many of the trades in which close observation is constantly demanded; in watching machinery and in the use of semi-automatic tools; where Attention must be an alert assistant to the faculty of Caution in guarding against accidents; in timing one's efforts with the efforts of others. It is also valuable in many vocations where sight, hearing, and the sense of touch are more or less depended upon to detect errors in work or defects in the quality of materials produced.

**Large Observation:**

In face a, Fig. 67, Attention is slightly dominant but not highly intense. It is observing, superficially alert, and wide-awake to interesting subjects. As Form, Color and Number are only fairly developed, while the face in general has nearly an equal amount of power in its various signs, particularly those of the upper lip, the long jawbone and its chin section, this Attention will not exercise a large amount of prolonged or critical examination.

Faces b and c are intense and powerful combinations of Attention supported by Form, Memory,
Liberty, Language, Construction, and a fair amount of Number. The noses stand out well from these faces, but in face b the region of Attention is not extremely long; several other faculties are quite close to Attention in size.

**Tentative Analysis of Attention:**

Attention is one of the three faculties of the specialized memory group, one of the faculties of the function of Retent-ion, the other two being specific Memory and Language. Attention is mentally situated on one of the direct mental paths of the senses, the currents of energy indirectly from the senses of Feeling, Impression and Appetite, and of the faculties of sight and of hearing, all flowing forward and upward through the region. Attention is thus indirectly under the influence of forces coming from the world around us.

Since this information is in the nature of modified sensations, having passed through the direct sense faculties, Attention can, like the faculties beyond it, temporarily act independently of the senses. It can become so accustomed to ordinary sounds as not to notice them; it can do the same with regard to the other senses. It can keep an interest in several kinds of sense impressions at the same time. The larger it is in proportion to other faculties, the more intensive its activity.

The chief function of Attention is not, however, to act on its own initiative in mental focus either to restrict the impressions coming in from the sense faculties or to inhibit the activities of other faculties. Its prime activity, as noted in various places, is to keep the mentality alert to the events of interest that are happening around one, and to act as an aid in the amassing of information, in the congregation of ideas and facts, and to aid Memory and Language in properly noting incidents for future use or labeling them for easy recollection.

We see by Fig. 68 that it acts in the various phases of discernment, notes the distinctions and differences between similar objects or acts; it is a strong aid to Form in surveying any kind of work or efforts in the arts or trades; it has the tendency to keep up an interest in matters where exploration or other kinds of active investigation of qualities or of objects is a part of the vocation.

In some kinds of effort, where Construction is the dominant, mental-focus aids in picturing the structures and operation of objects in which imagination is necessary, where there
ATTENTION

MENTAL-FOCUS

ATTENTION

MENTAL-VISION

DOMINANT FACULTY OF
ATTENTION (7)
PARTIAL LIST OF
VOCATIONS
WITH ESSENTIAL AND SUPPORTING
FACILITIES (2-3-4-5)

MOTIVE ENG'ER
AIRMAN
SWITCHMAN
GUARD
CHAUFFER
BRAKEMAN
FOREMAN
MOTORMAN
PILOT
TACKLEMAN
BALLPLAYER
LOOMFIXER
JACKTENDER
DELIVERYMAN
SEEDSMAN
HOTEL KEEPER
CIGAR DEALER
SEWER
FLORIST
POULTRYMAN
HORTICULTURIST
FABRIC INSPECTOR
DIE PUNCHER
SPINNER

FIG. 68
Vocational Counseling

is a need of visioning, or the description of any kind of phantasy. Having these various relations, it aids in imitation, in copying, in the carrying out of instructions that are not given in definite measurements.

A few minutes’ study of the plan of the mental organization (Fig. 69) will clearly show us why Attention has these various functions to perform, and the manner in which they are carried on. The plan is that of the Law of the Ellipse, under which the mental centers control the direction and quality of the energy moving around the brain and the relations of the mental organs. The paths of travel of the various energies are chiefly along ellipses; where these cross each other there are accumulative and elaborative changes and directive regions of abilities.

Attention is at the forward end of two great ellipses, the vertical ellipse of Form, Attention, Inspiration and Amity, the horizontal ellipse of Attention, Memory, Language at the fore end, and Caution, Economy and Defense at the back end on each side of the brain.

This place of crossing at Attention gives it particularly acute relations to the seeing and defensive faculties, and other broad relations.

We know that under certain conditions Attention becomes focalized, its actions become focused in such a manner as to inhibit, or to shut out, the faculties directly sensitive to incoming sensations.

It is well here to note the law of the circuit of ideas, in which the energies of the organs of sense, as feeling, touch, taste, smell, impression, the sight of numbers, forms, colors, and the sense of sounds, flow into the mentality, and then move on around the circuit in their elaboration into ideas or into actions.

In this action along the circuit of energy and ideas, when under the intense activity of faculties beyond it, as Reason, Construction and others, the faculty of Attention can be prohibitive to those below it. This inhibition we sometimes note as mental-focus action, as such a combination, or we may say agreement, with other faculties of the Intellect or of the Will as to prevent any outside disturbance to the mental action being carried on. This is usually under the influence of the work of elaborating ideas or of the activities of the executive faculties of the Will. This is the basis of the much vaunted “concentration” methods, useful under the conditions requiring its action.
Thus we see that the three general capabilities of Attention, all of which can be rated by this system, are seemingly contrary in their nature. General observation—mental alertness to what is going on around one—is the most common kind of attentiveness. The second kind of Attention is its action in intense or profound thought, its being engrossed by the actions of other mental faculties, in which it is to a considerable degree oblivious to incoming sensations. It is attempting to shut out any information or sensations that may disturb the mentality in what it is doing. We sometimes call this condition absentmindedness, although it is in fact an effort to shut outside matters out from disturbing the mentality. It is an effort of some faculties of the intellect or of the will to engage the faculty of Attention and some mental association—as a process of reasoning—to the exclusion of response to all ordinary appeals. Likewise, when the executive faculties are intensely engaged in the accomplishment of some outward act, the faculty of Attention may become so centered on that particular act as to be unconscious of other immediate objective things—even of physical pain and injury. The first effect, mental alertness, being keenly observing, on the outlook, a kind of automatic observation, is due to Attention's most common activity: that is, response to information received through the senses, especially sight and the sense of touch.

Avenues of Utility:

It is clearly evident that the scope of Attention's activity is far-reaching; it extends through the watchfulness of the trades and the skilled vocations. This is illustrated by the tackleman, who must have continued watchfulness in the handling of his hoisting apparatus, and in securing his fastenings, so that nothing slips or changes with the changing stresses of his work, and is shown further by the relation of his Attention to his Construction on its operation side, and to Caution-vigilance, which would stimulate him toward avoiding injury to his employees or others.

The great body of foremen need this watchful observation in order to detect the oversights of others, and imperfections that may cause final rejection of the product after much further effort has been put into it.

The spinner must look for imperfect threads or skips of tension. The entomologist must trace the minute expres-
sions of habits of life in the insect world, even though his Reason must be high, his sense of Form acute and retentive, and his impressions of the color of the insect and plant life clear and distinguishing to him. The much joked "bug-ologist" has brought his branch of science to such phases of utility and saving that it ranks high as an economic science, commanding the attention of the technically minded man.

This same faculty ranks high in the accumulative elements of education and the culture of experience; it aids in observing the utilities of practical life, in noticing the relations of various parts of knowledge, in demanding those courtesies that distinguish the actions of the man of culture from the run of ordinary actions, and in the exclusion of extraneous matters and ideas in the course of gaining a wide fund of knowledge.

It is evident that large Attention has an extremely useful place in the organization of plans of action in any line of effort, in the reflective judgment and in the accumulation and the use of executive power.

Various other intensive actions of Attention and its relations will be treated as we proceed.

The student will do well to study the table of tentative analysis of Attention; this gives an exceedingly wide description of the activities carried on in the mentality by this faculty, in many of which activities it is associated with other faculties in carrying on the more generalized trades and operative vocations.

Mental Products and Relations:

The direct blending in the mentality of the upper margin of the region of Form with the lower margin of the region of Attention closely associates the activity of these two faculties.

When observation is large, it stimulates the faculty of Form to close and "attentive perception" of the operative or the habitual actions that one is carrying on or that are taking place around one; and at the same time Attention is particularly alert to any unusual motions that are seen by Form. Many motions of which Form might not take active cognizance of its own accord, a good Attention reports to Caution, Reason and other faculties.

- Attention stimulates the faculties of Form and Color to detect or to notice changes in the observable relations of things,
to note unlikenesses that occur in the gathered impressions of objects that are expected to be similar, as the change of place of set objects, the peculiar growth of trees and plants, white or dappled horses in a procession, the flat piece of coal in a heap of angular coals, the crooked wheel, the change of tone in a machine, and thousands of other incidents which may be reported by any one of the senses.

Other Faculties Need Attention:

A great necessity for the faculty of Attention in the mentality is seen in the fact that this faculty can act upon information received through one of the senses even when that sense seems to be engrossed fully in another field of activity. To illustrate: You are sitting in a crowd, sight and hearing absorbed in what is taking place on a vaudeville stage. Form (sense of sight), however, is dimly conscious, for a second, of the movement of something dark across your chest. Alert Attention gets the information and immediately reports it to Caution. Defense and other faculties are aroused just in time to see a man thrusting in his pocket a black silk handkerchief which concealed his hand as he abstracted your scarf-pin. At the time of the theft you were “oblivious to the world”—that is, to your own environment—save for the signalman, Attention.

Double Importance of Attention:

The vocational counselor should appreciate the great importance of the double and, practically, simultaneous aid to the other parts of the mentality which Attention gives, first, in noting and reporting the unhabitual, and, second, in steadying the other parts to carry on their predetermined tasks. It is obvious how extremely important each of these offices is in carrying on hazardous occupations, where, from unexpected sources, the unlooked for may happen at any time.

In many of the trades and the arts and in some of the sciences, constant care must be exercised in order to avoid accident, as instanced in the hanging of scaffolding, in the placing of erecting gears, and in the arrangement of foot planks. In other cases Attention must guard against various forms of imperfection in the manufacturing of different products—in glass blowing, shoe welting, mule spinning, ball warping, web drawing and fabric weaving.
Some vocations, as railroad engineering, require Attention that is keenly alert to that which is incidental, or variable, or unexpected, or unhabitual. The locomotive engineer should have large Attention as his dominant faculty, which of course should be well supported by Form, by Construction, and by vigilance to know that nothing goes wrong with his train. His vocation is one in which sight and hearing must be alert, and in which vision memory of signals and of track regions, regular schedules, "specials," and numerous other conditions and requirements must be constantly kept in mind.

**Increased Intensity of Mental Operations:**

When the activity of Attention takes the form of mental-focus, it has the ability to confine the mentality to the persistent dwelling upon a particular problem or kind of subject matter. Mental-focus gives the mentality the power of measurably inhibiting the reports of the senses and of restricting the importunities of those faculties not admitted to the conference. During periods of such mental-focus, the mental operations which take place are of increased intensity because those faculties that are working in a particular circuit of ideas are stimulated, while the circuit of sense impressions is, at least partially, cut off.

Excessive mental-focus may at times confine the mental activities to so narrow a limit as to make the mentality quite oblivious to extraneous subjects of thought, feeling or action. In such instances the person is termed "absent-minded." In many vocations where Attention is required as the dominant power of the mentality, it is necessary to have large Caution as a supporting faculty.

**A Source of Supply and a Conservator:**

Large Attention is of great assistance to Reason and to Memory in congregating the essential and the particular mental facts required by Reason, by Construction, and by the social faculties. Through its disposition to put aside many of the non-essentials or non-appropriate elements gathered by the direct sense faculties—faculties that have no choice of what they shall receive,—Attention gives Reason equipoise and support. Attention thus becomes a supply source of vaguely remembered important facts and at the same time a conservator of ideas and effort, just as the synthetic processes
of Reason and the formed-judgment processes of Reason are conserving of energy.

**Attention Aids Solution of Master Problems:**

The most sustained activities of Attention are those in which this faculty combines with intuition, Reason and Construction, in giving reconstructive visions of fact relations of the possible effects of known causes, as demonstrated in the mental operations required in solving the master problems of natural philosophy and of biology, or in the mental-focus and visioning of the scientist, in the visioning of the inventor, in the concentration of the constructive engineer, or in the prolonged mental effort of the organizing executive.

The regional influences of Attention are outlined on faces a and c, Fig. 71.

In faces a and c Attention is dominant. In face c Attention is intense and characterized by mental-focus, by efforts toward visioning all matters of serious interest. In face a the nose is long and sharp and shows acute observation; it does not droop low, as when Attention is of the scrutinizing kind as seen more markedly in faces h, i, and k.

In face b Attention is fairly large, but has the peculiarities of the operative Attention of the machine piece worker. It indicates steadiness of observation rather than intensity of mental application.

In contrast with face b, note the region of influence in the nose of face j. In face j the nose is broader, the broadness extends upward on the nose, indicating more vividness and more intensity, as one would expect to find in the nose of the naturalist or in that of the social investigator.

In face d, Attention is hardly medium; it lacks concentration and intensity. In this face d Form and Color, as seen in the brows, are quite large, giving general observation, quickness of sight and relative artistic perception. But the regions of Attention indicate the absence of clear, prolonged, intense scrutiny, or of mental concentration.

Face e indicates predominant perception of forms, but small Attention to particular series of events; this face would find great difficulty in any kind of operative work, in any work requiring concentration, or in carrying an idea through more than one or two changes of form.

Faces e, f, g, h, and i indicate increasing powers of Attention.
General Salesman:

The salesman selling a specialty or a line of goods demanding expert knowledge may need a particular vocational faculty that is the origin of his expertness. A salesman selling colors and dyes should have a dominant Color, and so of all the exacting lines.

Aside from this special faculty, the great majority of salesmen should have the observation of Attention dominant along with the special faculty, or very closely following it; next vocabulary, often enlarged by a specialized nomenclature; next object-form, and imagination and synthesis as part of commercial vision, with Amity and Sociability enough to give tact and good humor, and confidence and dynamic enthusiasm. These should be supported in the Executives by Industry, and by Defense in moderate degree, not large enough to be over-aggressive.

The salesman, according to these mental faculties, should see everything he ought to see, say what his firm will let him say, imagine everything as resulting from his sale that normal conditions would probably allow, smile at fate or blank orders, at hotel bills and weather prophets, as well as at great success.

The essence of salesmanship is consistent conviction; the second factor is the mastership of the technical and utilitarian elements and facts of the goods, whether ideas, processes or stock; the third is the mastery of the mental attitude and purposes of the buyer.

The mastership of the technical elements consists of knowing and being able to describe those matters that the buyer needs to know in order to form a judgment of the worth of the thing bought; in order to make comparisons with other competitive goods, to readvocate properly their value or use; the salesman himself must be able to determine for the buyer’s mind the piece de resistance of the things sold, so that this may be able to compete with probable improvements in other products of the same kind or in prices before the normal period of its use or resale has passed.

Sales Manager:

Sales management has in it so many phases that it is quite impossible to state in any single formula the mental abilities required and their order, since those that fit a man to manage
under one form of salesmanship or one kind of executive control would jeopardize success under another. In some instances the sales manager directs the whole selling policy of the firm, and in these instances must have highly developed executive faculties, supported by a wide range of intellectual faculties, and an uncommon insight into the general conditions of trade and his own lines. (See Figs. 73 and 74.)

In other firms, the sales manager has control of the selection, training and management of the selling force, but accepts definite instructions on policy, territory, price ranges, expense accounts, advertising, display and favored products from department heads or in conference with the firm, or acts under the direction of special officers.

Figure 74 is a composite line of fifty sales managers. The low places in their graphic analysis lines varied greatly; the high points were remarkably near each other.

Fig. 75 is that of an aviator who early lost his life in an accident. The modeling is high and finely contoured, the face unusually well balanced, except that it is not high in the identical regions an aviator should have as his powerful range of vocational faculties. In this face observation is high, but not dominant, mental focus is small; the imagination and invention of Construction are below medium; motion-form and object-form are about medium; vigilance is only
Attention

a medium of the whole mentality. It was noble folly for this mentality to essay a vocation full of hazard under the moderate endowment of these faculties. Courage, aggression, protection, hardihood, Mobility, the Aspirations and pride are all high. We see in this face a splendid equipment, but not for aviation, or hardly any other mobile mechanical vocation.

Compare this face with the face of Guynemer, Fig. 61. The latter face has high observation and mental-focus in the broad outward extended nose, high imagination and skilfulness in the full arched alae, powerful motion-form and fair object-form in the full rounded brows, high vigilance in the cheek, and Mobility in the chin. Because many of the faculties of the Will are small and executively latent, these volumes of abilities and the high Aspirations were the chief source of his prowess and his ambitions.

Some men are especially attentive to mental matters not arising from sight, but from sounds or touch or verbal statements, dependent upon the nature of their dominant faculties. In these instances the sign of observation is usually above the average of their faculties, but they may not seem particularly responsive to transient actions or to the general phases of Attention. These variations of a moderate sign are readily noticed through their relations to the dominants or large signs, or the small mental regions. As illustrations, large Language very naturally calls attention to words, sounds, illogical rhetoric, and discordant music; large vigilance calls attention to possible dangers that would not be noticed by moderate observation if vigilance were small. But these facts are none of them substitutes for the vocational uses of observation, for those exertions where the specific must be its own agent in a constant and foreseeing way, or where it should be an active power in the observances of friendly conduct, in the accumulation of information, and as a safeguard against danger.
Blaise Pascal

FIG. 75 A

Algernon Sidney

Lafayette
Some Typical Vocations Where Attention is the Dominant Ability

Inspector: Nearly all inspectors require large Attention; it generally inclines toward alert, or observation, Attention, but frequently in these kinds of work, especially where there are technical defects to be guarded against, scrutinizing Attention is necessary. In the latter case the nose is long at the end, as seen in the noses of many pharmacists.

Chauffeur: The chauffeur requires alert Attention, and should have in addition a natural aptitude for quick thinking and for muscular co-ordination. Besides these abilities, the chauffeur should have large vigilance (but not extreme Caution), fair Construction, and large motion-form.

Signalman: The signalman requires large observation, keen sight and hearing, with large Mobility for readiness in case of emergency. Caution should be large enough to urge him to keep on the lookout for all probable dangers.

Florist: The florist who raises his own stock requires large general Attention, but not dominant, in order to guard against loss from many not readily seen causes. Some of these losses are due to insects, fungoids, old aging flowers and plants, neglect of temperature precautions, to careless pruning, to improper storage, and other oversights. Dominant Reason; essential observation; supporting skilfulness, Industry, Color and dexterity.

Machine Pieceworker: Machine pieceworkers require close consistent Attention in order to avoid injury, to manage their work with care and skill, and to gain gradually in speed and ease in operation. Dominant Attention; essential skilfulness; supporting Form and dexterity.

File Clerk: The file clerk files for easy finding and safe keeping all useful letters and papers, and studies methods of finding these when desired; he should have some general office experience and be familiar with this kind of work.

He should have observation dominant, fact and system as essentials, and vocabulary, object-form and calculation supporting.

Messenger: The messenger must be extremely alert, careful, and trustworthy; though he performs minor clerical work, often somewhat routine, yet much may depend upon the
delivery of documents, packages and messages. Dominant observation; large Caution, object-form, Mobility, calculation.

**Airplane Pilot**: Must be thoroughly capable of taking charge of the flying and piloting of standard airplanes; must understand the operation of engines and observation instruments and the mechanical appliances that stand toward safety in flight. Attention dominant; essential Construction; supporting motion-form, object-form, vigilance, Mobility, Stability and Industry; high quality.

**Motorman**: The motorman should have a good knowledge of electrical motors, of electrical conductors, transformers and switches, and of electric train traction. Observation dominant; vigilance essential; Form, Construction, Mobility, and Stability supporting; moderate quality.

**Horticulturist**: The horticulturist must have a technical knowledge of small fruit, flowers, shrubs and tree growing; in general a knowledge of bacteriology, fungicides and fertilizers. The dominant is observation; essential Reason; supporting skillfulness, Industry, Color and dexterity.

**Railroad Engineer**: A critical analysis of the faces of several hundred railroad engineers has proved the fact that engineers require a wide range of faculties quite evenly balanced, through both the Intellect and the Will.

As a running engineman, he must have observation and mental-focus dominant in order invariably to notice all operating signals, and any variation in the tone and singing of his engine; he must have invention and skillfulness large enough to enjoy and understand the machine he controls, its boiler injectors, valve-gearing reversing mechanism, air pumps, and all of the auxiliaries of his engine, but he must not have imagination extreme or he will "see things" ahead of him on the tracks. The engineman must have object-form and motion-form supporting his Attention and Construction; he must have large vigilance as a sense of provisioned danger, but if excessive it will intimidate him. Many very capable firemen are never able to make good enginemen because of over- or underdevelopment of these primary abilities.

**Nurse**: The registered nurse should have a sound mental and physical constitution, a well governed temper and nervous system, a willingness to endure all of the erratic hardships, uncongenial tasks and careful exactions of this very respon-
sible vocation. Any one with a finicky disposition should not attempt it. The course of training is usually quite elaborate and exacting, and has as its foundation a fair education. The professional course usually extends through three years, except for short vacations; considerable time is given to class work and the rest of the time to practical training. **Observation** should be dominant, all of Caution closely following, as essential; **skilfulness**, **Integrity**, **object-form**, Amity and the Aspirations as supporting faculties. The rest element of Caution must not be neglected as an index, since this is apt to be demanded at irregular times, and Mobility is a valuable supporting faculty.

**Cigar Dealer:** The cigar dealer should have large **observation** and essential **Form**, with Industry and Defense enough to keep up active business efforts. Amity and Sociability in good supporting positions are a decided advantage.
A RECONSIDERATION

of

THE REGIONAL INFLUENCES AND PRODUCTS OF ATTENTION

through

QUESTIONS AND ANSWERS

Question: Where is the facial region of Attention located?
Answer: The region of Attention is a narrow strip down the middle of the end of the nose meeting the upper edge of Reason.

Question: What is the most frequent activity of fairly large Attention?
Answer: Wide observation and an alertness to passing events; it is generally most active in the direction of the dominant ability possessed by the individual.

Question: What is the characteristic form and habit of small Attention?
Answer: A short nose, rather small at the end, indicating transient observation and a generally inattentive mentality, disinclined to prolonged or close voluntary application to matters in hand.

Question: What is the contour of large Attention?
Answer: The nose is long outward (observation), or the end fairly broad (mental-focus), or hooked downward (scrutiny).

Question: What is the chief disposition of large Attention?
Answer: A tendency to close observation, to watchfulness, and to the mental accumulation of matters of interest.

Question: What are the characteristics of dominant Attention as manifested in practical life?
Answer: When Attention is large and is the dominant faculty of the mentality, it also has mental-focus and visioning qualities which enable one to exclude extraneous sense impressions and to confine one's mental efforts to acutely intense problems or to exacting operative demands.
Question: In what associate mental activities is Attention most noticeable?

Answer: In the receptivity of information through the senses and as an aid to the recollecting processes of specific Memory.

Question: In what general forms of human effort is the activity of Attention most noticeable?

Answer: In transportation and in the various operative vocations, as in shop and mill practice, and in mining.

Question: Are the activities of Attention broad or narrow in their direct relations with other mental faculties?

Answer: Like the activities of specific Memory, they are quite broad in their relations with other faculties.

Question: Along what path is the faculty of Attention situated?

Answer: The mental region of Attention is just above that of Form; it is situated on one of the mental paths of the senses at the place where this path crosses the Ellipse of Retention, along which are situated Memory, Language, Caution, Economy, and Defense.

Question: What are the two chief characteristics of this faculty?

Answer: Alertness to impressions from all the senses, and, under the command of a group of the other faculties, the ability temporarily to restrict, in greater or less degree, the recognition of sense impressions.

Question: What is its most common mode of activity?

Answer: Directive and cautionary responsiveness to the reports of the senses, most frequently to those of Form (sight) and of Language (sounds and words).

Question: With what faculties is Attention most closely related?

Answer: In its receptive activity it is most closely related to Form, and in its protective activity it is most closely related to Caution and Defense.

Question: What characteristic of the faculty of Attention makes it particularly valuable as an assistant to the faculties of Caution and Reason?

Answer: Its sensitiveness to variations from the usual or the expected action of objects and to variations from the accustomed places or relations of objects.
Question: Is Attention the dominant faculty required in many vocations?

Answer: Yes; but generally it is essential that it have strong supporting faculties that are directly related to the particular requirements of the different occupations.
MERTON COURSE

VOCATIONAL COUNSELING
and
EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

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LESSON SIX
The Regional Influence and Products of Memory

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Specific Location of Memory Influence:
The cranial region of the faculty of specific Memory (all other faculties have their own kinds of memory) is in the forehead above the region of Color; it blends with the outer side of Attention's forehead region and with the inner side of Language's region at the curved boundary of the temple. The region of Memory forms part of the forehead outline in what is called a "three-quarters view" of the face. Its focus is above the pupil of the eye when the eye is looking straight forward.

This forehead region of Memory is, strictly speaking, a cranial region. The forehead and the temple, however, differ in their expressional nature from all other parts of the cranium; the greater mobility of their muscular covering has a modulating effect upon their contours.
No Facial Memory Territory:

So far as discovered, the faculty of Memory has no specific facial region of influence. No region of the face per se has been found that persistently parallels the cranial (forehead) region and demonstration of specific Memory of facts, time and system.

The forehead sizes of the subfaculties, though not as specific and as detailed as any of the other subfaculty indications—with the exception of Language, which is also indicated solely in the cranial region nearby—are, nevertheless, subject to fair judgment and reading.

Subfaculty Regions of Memory:

One subfaculty region of Memory is the specific memory of facts, as acts, places, and recollection of chief changes of scenes and motions seen or heard or felt or otherwise sensed by the other faculties. The location of this region is the forward end of the faculty.

The second subfaculty region is that of system, which is the memory and recognition of the arrangement under which actions take place, the order in which they take place (as distinct from the order in which things stand as seen by the faculty of Color), and their natural succession, as noted in the history of an event, or the happenings of a journey, or the particular manner in which processes succeed each other in a piece of work. This subfaculty is in the middle region of Memory, slightly upward toward the analysis of Reason in the forehead.

The third subfaculty of Memory is the memory of time, having to do with the periods of time used in passing events (independent of the idea of numerical dates) and with the sense of punctuality and the mental idea of the rapidity with
which past actions have taken place. All of these facts are of such importance as memory keys and indexes to other faculties that we shall need to treat them under the tentative analysis of Memory and its relations to other faculties.

Methods of Judging Memory Signs:

The method of judging Memory signs is identical with that of judging Color, the faculty just below it, although the Color signs are purely facial, not cranial, as are those of Memory. The relative distance forward and slightly upward from the ear opening gives the relative power of specific Memory. The "cant" of the forehead in this region indicates somewhat clearly the predominance, if any, of the sub-faculties. When the forehead is long here, even if other regions around are longer, it must be given its due quantity; it must not be rated too low because it is slightly smaller than its surroundings. Each faculty must be rated from its own basis. Remember that it is the amount of the faculty ability that is being read, not its presence or absence in total.

Memory seldom drops as low in its proportion to the highest faculty as may be the case with other faculties, due to the fact that every mental faculty may need to call upon Memory for Memory's specific abilities, and its natural aptitude in recalling the key-facts often required for the recollection of a whole series of ideas or fragments of information. We often find people of great ability who are slow in recollection, but who are capable of extreme detail in this respect when they have time to re-establish the mental paths between the interested regions. Frequently we find individuals with exceptional memories who have but mediocre judgment or mental equipment.
Comprehensive Memory Indexes:

In face a, Fig. 79, is shown a powerful faculty of memory. The head is wide and quite long; the forehead is unusually broad and seems to crowd outward at Memory and Language and to crowd forward at Attention and Reason.

The faculty of Memory is undoubtedly the dominant in this face. Its region is long and broad, in fact, extremely broad, which indicates that all its phases are capable, and that all the paths of a broad memory of facts, time, systems and relations are highly developed.

The relatively large Attention and Language would make this subject an apt disputant and debater—one who is always ready and invariably alert to the main issue. Large Attention and fairly large Number indicate that he has a good sense of relative values where numbers are concerned, and that he could give close application to propositions of quantity.

Transient History Memory:

In face b, Fig. 79, Memory is the dominant, with Form nearly equal in power. This Memory has projection rather than breadth of territory; it is largely a fact Memory; it is much more active in the retention of present and transient matters than it is of matters
that are more of an historical nature—historical to it.

With Form large and Language somewhat restricted, this mentality, in any general problem, would depend much upon Form for the symbolic—not the verbal—retention of statements, upon the paragraphical or the story recollection of word descriptions rather than upon the specific terms, and upon the recorded information it expected to use.

This face has a fine specific Memory of things seen and of apparent actions. It is apt in the phases of personality.

**Sequence Memory:**

Face c, Fig. 79, has an uncommonly large Memory when it is compared with the other faculties, even though the head is high and the face long. The faculty of Memory is here so predominant that great dependence is put upon it. The contour and focal length of its cranial region of influence indicates a fact and association Memory—one that is impressed by the relations of events as sequences and of occurrences in their relation to other occurrences; this is the reliable kind of Memory that does not get its time "wires crossed."

The region of Memory in this face is only fairly broad, but Memory is supported by an intense, rather focalized Attention—note the latter faculty's heavy upper region in the end of the nose. Relatively large Form aids Memory in retaining the symbols of words and numbers. Language holds its own in comparison with the average of the range of abilities above it.

**Basis of Universal Analysis:**

All living things, or we may say that all organized things, have memory. In this sense of the word we can include a universal synthesis as subjects of Memory; the word Universe including all Objects, Life, Property and Motion; these four words including all things in the universe and their acts. This analysis we have now tentatively extended to over six thousand nouns. A number of the segments directly concerning the vocations have been included in this course, though many other tables were omitted because they related to other matters than those intended for this text.
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Nature of Memory:

It is necessary, in this study, to make the distinction between biological memory and specific Memory, although in many ways they are alike; the difference is largely in the manner of expressing their energies. The subject of biological memory in living things is rather a deep study, but as it explains many mental and physical problems it is well worth the attention we may give to it.

Biological Memory:

Every living tissue has the ability to retain certain kinds of impressions—to retain a memory of its own vital habits. When we say "retain certain kinds of impressions," we mean that it has the power to remain in a condition to which its organic substances have been changed. It can act at some future time in harmony with its changed condition. Further, every living tissue has the power of retaining for varying lengths of time energies it has received from without or energies it has gained with new substances in the form of nutritive compounds which that tissue has accumulated, or for which it has traded its own exhausted compounds. Thus tissues may gain substances that have energies, or may gain energies that change their own substances. The nervous tissues and their cells gain new substances from the general currents of nutritive substances, and new energies from the organs of sense or from their own tissues. In all cases the tissues retain a memory of their own vital habits; this we can call biological memory.

This ability to remember and to react their own methods of replacement, growth and vigor is the basis of the laws of vitality in living things. These laws of vital memory include the laws of the nutritive selection of sustenance, of the mental government of tissues and organs, and of the creation and control of motive power and expression. The perpetuation of the processes of life seems to be impossible except for the facts of biological memory.

The Brain and Its Nervous System:

Biological memory (life-process memory) is specialized in a wide range of functions carried on in the brain and its nervous system. Each faculty has its own kind of memory as
well as its own kind of energy operations in changing and in modifying the energies that move through its structures. Every sensation goes into the mentality in the shape of a new energy and must end in being received by some of the mentality's substances or in being changed to some other form of energy. An energy cannot be changed without changing other structures or other energies. It is common experience that the more distinctly we see an object or hear a sound or sense an odor or taste a flavor, the clearer and more lasting our memory of it is. Superimposing impressions seldom adds to their clearness or distinctness. Unnecessary repetitions usually dull the organs of sense and impressions in memory. By modifying the energies of other faculties and by generating its own kind of energy as results of its memory, each faculty influences the other faculties and the products of their operations.

Tentative Analysis of Memory Concepts:

From another point of view it is of great importance that the student and counselor should realize the nature of specific Memory capabilities, from the fact that every other faculty has its own kind of memory in its own specialized way, and its ability to elaborate, work out, and master its own field. For these and other reasons we shall more elaborately consider the nature of this mental process.

The table gives 120 terms relating to the kinds of facts of which Memory is the immediate mental agent. We can say that the world is composed of things, or objects, and the way these objects act. It is Memory's main function to recall some part of the way particular objects have acted. The better this is done, the more completely or fully it can do this for the rest of the faculties, the more aid it is to those faculties in recalling their own parts of the idea or information. Understanding these habits and abilities of Memory will amply repay the student for any reasonable amount of study given to them.

While Memory, as otherwhere stated, is not the faculty out of which a large number of vocations grow, from which vocations directly arise, it is very often the first or a close second or third in power, and its importance in some vocations is very great.
Mental Products and Relations:

The faculty of Memory has particular relations to other faculties in the nature of their specific demands upon it.

Association of Similars:

Where Reason or Construction is intensely active, and in the relations of the Intellect to the Will faculties, the association of similars, either of ideas or of facts, is often called into use. This second law is that of the orderly paths of sense impressions, that they travel along the path of ideas. Prominent facts coming from the world around us, or from some other faculty, are carried through the Memory and on to the reasoning and thinking regions beyond Memory. This law of the association of similars carries energies from faculty to faculty, where related actions are being carried on, and thus each region becomes specific in its own kind of activities, as imagination, kindness, etc.

Thus the culture of Memory is brought about largely by the attentive gathering of the chief facts of a similar kind, clustering them around each other as related ideas, and related to a particular subject in a manner that can make recollection easy and the subject of a part of the aggregation. The better the order and arrangement of the chief facts, the more readily the total substance can be brought to bear upon new or old ideas, upon new or old creations and products.

Under Form and Number the properties of things were treated briefly. From these properties or their peculiarities and distinctions large Memory gathers fragments. By these peculiarities and relations Attention, Memory and Language note where the mental actions are taking place and in recollection...
can connect these, as it were, with imagination or analysis or the other faculties beyond, as additions to their funds already elaborated.

Aggregation and Congregation:

The mimetic or imitating tendencies of ideas which are similar create the law of congregation. It is due to the fact that like structures and the paths of similar energies or sensations are required to gather like things or actions or attributes or properties together. The faculty of Appetite accepts the energies of taste in preference to any other kind of energies; the faculty of Color records the energies of colors more readily than any other kind of energy; likewise, its own kind of energy is the first choice of each of the other faculties.

In some of the faculties this aggregation takes the form of congregation, the clustering of like things and of unlike things under their own group headings. This form of congregation is operative in a marked way in the three faculties of Attention, Memory, and Language. Congregation is the distinguishing characteristic of this faculty group of Retention.

Attention is particularly apt in the congregation of incoming impressions from the senses. Language inclines to the congregation of facts concerning things and actions through the recognition of their association with words as their symbols. The faculty of specific Memory, favorably located at the crossing of the two great ellipses, is widely receptive in its interests and in its neighborly relations to the climaxes and striking parts of facts, of time elements, and of system.

The fibres of the nerves of these faculties may be likened to a spider’s web reaching to different parts of the brain, associating groups of mental nerve cells with each other, and ready to respond to the first call for a message from one region to another. In operation these resemble a living telephone system of centrals, branches, exchanges, and terminals, but instead of electric energies, these energies are mental and are modified by the cells through which they travel.

It is evident that the more perfect the associations and mental relations of the ideas are, the more readily they will be recalled and used.
Servant of Other Faculties:

Since it is the nature of the faculty of Memory to gather the chief elements of interest of fact, of place, of time, and of relation belonging to the activities of the other faculties, this faculty at once becomes the great faculty of circumstantial congregations, of regathering ideas. Its utility to the whole mentality increases in proportion to the nearness and the clearness of the facts it is able to "stand around" any subject matter under consideration.

Retentive Intensity:

The nearness and the clearness of the remembered facts depends largely upon the retentive intensity of the first impression of them, and upon the desire for and the attention to the idea associated with them. The effect of intensity of original interest is to deepen—perhaps we may say to make more lasting—the impression of the fact received by the faculty. Intensity is increased by the mental attractiveness of the subject, and, also, by the mental power or dominance of the faculty which is sympathetic to the idea. It is evident from this natural law of mentality that a dominant faculty will gather its own kinds of mental materials more readily, if they are procurable, than other less powerful faculties will gather their kinds. Thus, other things being equal, the mentality accumulates facts in the direction of its dominant faculty even, at times, at the expense of other faculties which might be much stronger if they were properly stimulated. The vocational counselor should advise against specialization of interest that may result in deficient supporting and essential faculties.

Memory is aided by interdependent coincidence, by incidents that are related in forms, colors, places, quantities, peculiarities, or similarities. The more conscious these relations are, the more permanent the memory of them.

The specific Memory should be high in any occupation where there is uncommon need for the grouping of similar or related facts, or where the information is interdependent, as in the sense of odors, colors, tastes and places; or where the ideas and purposes can readily be consciously related to each other, as when one receives a report of a transaction or the description of a process which must afterward be recalled in the main and specifically. The counselor should instruct the
client in methods of clustering the various ideas and impressions around central facts as Key-facts to be first recalled, so that the relations of affinity existing among ideas shall be gathered around those ideas that are already known.

The relations of these groups of ideas depend somewhat upon the dominant faculties with which Memory is associated and is supporting.

Among these group relations these may be noted as the most readily recognized: The grouping of the impressions or ideas of objects with regard to their forms or places (Form); with regard to their colors, beauty, striking features or points of interest (Color); with regard to their numbers, quantities, or their enumerations and combinations (Number); with regard to their probable activity and effects as seen in their actions (Attention); and with regard to their conditions, relations and properties (Reason).

Aside from this function of Memory in the relations of ideas in different faculty activity, it has the ability to gather by aggregation. This is the act of taking the chief elements of information that are somewhat alike and clustering them with each other and with others already possessed, as expressed by the law of similars. This is illustrated by the fact of dwelling upon the nature and influence of the mental effect of colors in depressions, intensity and sympathetic hue or in changes due to contrast or succession of colors or of their tones; thus black with a red background appears a greenish black; on a deep blue background absolute black appears copper colored black; on a violet background the black has the tonicity of yellowish olive. Here the contrast influence of black as shown by red, blue and violet background is yellowish. In any branch of knowledge the aggregation of facts of a problem, or of an accumulation of definite data, largely falls upon specific Memory, or upon its main assistants, Attention and Language.

Spontaneous Memory vs. Slow Memory:

A man with a medium sized Memory may have a good general memory of knowledge and facts that have accrued in his experience, but he is almost certain to be slow in its recollection and its presentation; he will then require a longer time for its consideration and for action upon his information and general knowledge. It is much better that a man with a medium or small specific Memory avoid a vocation where
much spontaneous recollection and other forms of immediate action are required, or one where the main work is of a transient nature.

People with relatively medium or small Memory signs are seldom vivid in speech or in the portrayal of ideas, seldom quick in argument or in debate unless well prepared directly for the effort, and are moderate in their statements of facts and their arrangements of ideas. This moderation is particularly apt to be true of mental activities where the details concern things or actions that occurred at a somewhat earlier time, or were not then known to be important.

It is not apt to have so much effect of slowness upon actions that are going on in a regular way at the time, because these actions may suggest each other and do not require the same kind of effort in recollection or in regrouping ideas. Routine processes, orderly procedure, connected conclusions and immediate facts are always less liable to be forgotten or not to be at command than are the more transient and varied facts, dates, quantities, statements or other requirements of memory use.

Where specific Memory is noted as a vocational requirement, it will be seen that slow recollection of the matters needed is distinctly a vocational deterrent, a hindrance to success and to the efforts being made in that vocation. A reliable and quickly acting specific Memory is always useful, but in some vocations a necessity. In other vocations a slower memory is less hindering; there is possibly a longer time for consideration, or the circumstances and materials used are, in themselves, a suggestive key. Often these objects are familiar and their appeal is direct to the other faculties interested, so that specific Memory is replaced by the general memory of the faculties.

Men who have great masses of data to remember quite often adopt the rule of making sequential memoranda upon which they depend for the incidental, specific, or more extended items. These, however, can seldom answer well the demands of reasoning and prolonged reflection.

Small Specific Memory:

When specific Memory is comparatively small, much of the past will be a confused jumble of incidents on first recollection, and only by careful effort and rearrangement can it
be brought into organized use again, or made valuable for
new uses.

Occasionally the counselor will find a small specific Memory coupled with fairly large vocabulary, in which case the latter greatly aids by its memory of words of the descriptive facts or evidences that are needed in a particular effort; and where this vocabulary is aided by large calculation, the two are responsive to the need of specific facts or data. This is not an equivalent, but it is an aid.

Some men with high reflective ability make a habit of drawing judgments, of adding to past conclusions any changes new facts or situations demand, and then consciously dismiss the data that seems no longer useful. The counselor must keep these possibilities in mind.

Now and then the counselor will find individuals with large indexes of specific Memory who seem uncommonly slow in the retention or recollection of the memory data that ordinarily fall to that faculty. When, however, time and interest are given to the matters under consideration, the recollection seems extensive, complete and in sequence. The volume index apparently holds true, but without the customary spontaneity or ease in activity one expects from a large faculty index in a good quality individual. We have been unable to discover a satisfactory reason for this mental disposition; to say that its natural reactions are slow, does not explain anything; in some instances other mental operations are rapid and clearly incisive. The main fact is that this occurrence is not common enough to disturb the counselor's judgment, and the final result is the same except where rapid co-ordination of some time past memories is vocationally necessary.

High Transient Memory:

This transient memory disposition arises from the consciousness of a temporary necessity, with indifference to later needs or uses, and under the conditions of neglect in rational association with already known facts or ideas. This disposition is noticed in the instances of individuals who are employed in work requiring the temporary memory of items, facts, time, or procedure, as in dealing with "prices current," foreign exchange, quantity volumes or daily sales, changing price marks, and all other data of temporary use. These transient memory acts are not, in the main, specific Memory actions, or we may say, real specific Memory facts. In these
vocational activities we must recognize the true sources of the mental acts; these sources are not only the specific Memory subfaculties, but the active local memory of every interested faculty.

If the matter of transient memory is one concerning verbal statements with number data and incidental facts, the faculties of Language, Number, Form and Attention may all be interested or involved in the action of remembering and each adds its quota to the retentive ability. The problem is then, one may say, in a "state of solution," and carried directly by its own various faculties. In this case specific Memory has only to keep track of its key-facts that are apt to be needed at some future date, and to which it will give greater heed if in the habit of being called upon for key-facts of a similar kind. It may become negligent when not required to perform its normal function. The other faculties are simply doing their own work as usual in holding their daily mass of information more or less transiently or permanently in accordance with their abilities and the recognized importance of the subject matter.

Since specific Memory is, from its location and function, chiefly interested in future recollection, in real remembering instead of temporarily recalling items that other faculties should have fresh in hand, a distinction must be kept in mind between the facts of long-time recollection and of temporary memory. Many of the phases of specific and general memory are treated in subsequent pages.

A large specific Memory should be rated as a long-time memory rather than as an ephemeral one, as having association and congregation of ideas power rather than that of transient use; the temporary memory being a mixture of the abilities of all of the interested faculties.

The "examination study" of many students partakes of much of this quality of transient and ephemeral memory, the aim being to gain all that can be mastered in a brief time of review without reference to the lasting use or relations of the information, or to its co-ordination with settled knowledge or ideas. The rapid obscurity of the information when the temporary use is past indicates the lack of intensity in the impression and the absence of established relations of the substance, the absence of its being passed on to the elaborative faculties beyond the perceptive and retentive faculties. The process of final term examinations in educational work usually becomes an enforced temporary memory of all of the faculties
involved in the study; the decadence of the information or memorization in general being directly in ratio to the haste and intensity of the effort and inversely to the ratio of consideration, interrelation, and attention to probable uses and purposes, as described under the problems of Retentive Intensity.

Memory and Conscious Usefulness:

Each mental faculty has its own responsiveness to its customs and habits of working, upon which it relies as being normal activity, a kind of doctrine of usefulness of its own. In this manner specific Memory responds in its own kind of mental happiness and significance to the training it is receiving.

The counselor can advise a client that the emphasis of usefulness is one of the keys to a good specific Memory. An employee who requires repetition of instructions, reiteration and emphatic declaration, comes very near being useless as an employee and a hopeless prospect for promotion. Such a lack of Attention and of Memory effort is a stumbling block to the rest of the mentality.

It is not claimed that a remarkable specific Memory is an evidence of high intelligence and profound judgment. Each faculty has its own attainments to which the other faculties can add in proportion to their relations to the subject matter. A reasonable premise is found in the conclusion that any one faculty or series of faculties may exhaust, through extreme effort, a greater share of time or mental energy than belongs to them, and thus restrict other regional mental accomplishments.

Turning the whole mentality into a mnemonic organ—a memorizing machine of data of whatever order—is objectionable if that kind of function is vocationally desired. But the vocations in general imply the necessity for other faculties and their functions, in which specific Memory, on its part and general memory of the various organs are nominal actions accessory to the intellectual and volitional effects desired.

As specific Memory is a good servant of every other faculty, its enforced hyperactivity by the energies of the mentality may be a decided detriment to the vocational or other attainments. On its own part, specific Memory is no more plenary than other faculties and cannot choose to become the dominating ability, unless so by natural predominance or by the enforced influence of the other faculties.
Harry Vane.
Malesherbes.
Moyseau.

Dumouriez.
Philippe Égalité.
G. v Linna.

Paracelsus.

FIG. 82 A.

Ben Johnson.
The Culture of Memory:

General memory and specific Memory obey the same laws of culture; their difference is in the nature of the things remembered or recalled and in the fact that specific Memory has an enormous variety of impressions to recall, while general memory in any local region of the mentality has likenesses or similars of a large number of things more nearly of its own kind to recall or change or modify, according to the function of the region, and must operate with the changes of their energies holding the old and the new state.

The culture of general memory is, from its very nature, synonymous with high grade or high intensity effort of the particular faculty. This activity of the faculty masterfully changes the structures of the part and their energies, hence increases the quality and permanency of the memory. This is the main fact of general memory culture. There are other natural, or vital, facts that are important additions to the cultivation of a high degree of retention and recollection. These laws we can sum up under several headings, all of which the vocational counselor can use as instruction or advice in the proper instances. The law we have just partly described may be called the Law of Intensity.

The Law of Intensity:

The law of intensity comes into play in the culture of Memory in the form of arranging impressions and ideas in their natural order and in the order of their intensity. A matter of small importance, but received under impressive conditions may be intensively received and make a lasting impression. Intensity of impression is often increased through its relations to important knowledge one already possesses, or through the importance of its source, independently of its own importance.

There are other mental reasons for clearness of recollection and differences in ease with which an individual recalls specific matters; one of these reasons is that of the dominant faculty of the individual, especially when that dominant is one of the higher range. When the subject matter is in sympathy with the dominant faculty, say Reason, then matters of a scientific nature, of an analytical or a synthetic nature, matters requiring comparison and judgments, or recognition of what one can call performance, would be the points of Memory interest.
Another variation of this same idea is that of a previous desire for, or incentive to, a line or range of ideas or of information, where there is a keen feeling of liking for the subject. This may arise in a wide range of faculties, or in some form of specialized knowledge.

When the facts to be remembered are dependent upon each other, have a sequence in time and relation, and thus are sympathetic in their impulses, they have the quality of being coincident, or of having similar paths of travel and association memory values.

Sequence of Events or Effects:

The memory of events is enhanced by their conscious association in sequences: that is, by one's consciously recognizing the order of their occurrences and the order of their effects upon each other. Thus, the sequences of the action of a story or the sequences of the statements of a dialogue in an interview or the succession of changes of scene on a journey are more readily retained than are an equal number of fragmentary or disjointed statements or views.

The vocational counselor in suggesting studies or other preparation for those who seek his guidance should endeavor to make the new suggested activity sequentially related to present possessed forms of information and experience.

Aids to Duration of Memory, General and Specific:

The natural wearing away of substances of the mental organ has a slow depressing effect upon the general memory and upon the specific Memory. High nutritive support, including the revival by review of the idea, and its conscious rehearsal, is beneficial to the memory; the recollection of the original impression with a mental review of the circumstances of its reception or elaboration often restores to the memory structures somewhat of the original impression or arrangement of mental substances and energies.

The duration of general memory depends upon the quality of the individual and upon many other conditions, some of which will be treated later, and upon the complexity of the subject under the memory stress. Thus when the subject is involved and its topic unfamiliar, it is more difficult to recall than when of equal amount but direct and partly familiar. The degree of natural interest, interest due to the circumstances in part, or to the fact that it is in nature like the dominant or larger faculties, may influence the memory of those
faculties. The vocational counselor may guide his judgment somewhat by the fact that in recommending a vocation requiring the culture of dominant and essential faculties, their general memory will be higher than ratings can be made for the smaller faculties, or for facts or information that must be gathered by the third range faculties.

Deterrents to Recollection:

Some of the deterrents to recollection may be summed up briefly as organic mineral food depletion, where mineral elements have been percolated from the food in preparation; reduced vitality from such causes as fatigue, narcotics, passion, poisons; inattention, disjointed study, useless reading and other similar causes.

Depressions Due to Senility of Impressions:

The old age of an impression reduces recollection through the wearing away, or disconnections of the list of circumstances under which the memory was made, and by these effects reducing the biological relations and reflective value of the information of the original act. Thus memories of early maturity grow old as facts and are counter-imposed by other memories.

Depressions Due to Senility of Structure:

The depression of memory due to senility of structure in old age affects chiefly the memories of mid-life, because of the greater stress of memory at that time, which prevents the depth of impression possible in youth.

Reduced Memory Due to Ambiguities:

Ambiguity and uncertainty are corruptors of good memory, just as all dubiety is. Their impressions are seldom clear cut or definite; where one is conscious of their character there is an added burden upon general memory. These ambiguities cannot be solved by general or specific Memory, or by the Sensations, hence must call into action, or be cleared up by, the faculties of Reflection, and other faculties.

In the instance of distractions or obscurities, these call into action confused memory relations and bring about waste of mental effort. Distractions that confuse the facts or that reduce the directness of mental operations or the clearness of the congregation of facts are detrimental to recongregation or reasoning or to permanence of memory.
Regional Memory and Activities:

The various forms of specialized memory are regional memories—faculty memories—grouped in regions of organized convenience and functional relations, connected one with another by nerves of communication. Some of the faculties are harmonious and others are indifferent or opposed, but all are compelled by mutual dependence to yield to the individual faculty, or to the aggregation of faculties, that forms temporarily or topically the dominance of power. The power of memory recollection is in proportion to the singleness and intensity of its impression, its breadth of elaboration or congregation, and the absence of its imperfect mental palimpsest.

The specific capabilities of Memory are as clearly defined in their actions as are the capabilities of the other faculties, but they do not often give us as sharp demarcations. This last fact is important to the analyst, since the subject matter of Memory must be considered apart from the capability. If we keep in mind the fact that specific Memory has the function of a general secretary to the mentality, that it "keeps track" of the chief points, the matters of key-facts of recollection, the matter of regaining information that is needed at once, its specific function is readily understood.

The most acute vocational use of Memory is in the class of vocations approaching the title of Secretary to the Firm, the general secretary of engagements and appointments, where it is difficult to depend upon memoranda of all that needs to be remembered and held ready for use at a moment's notice. In fact, this function of secretary very closely parallels the work of specific Memory as an associate to the other mental faculties. In the secre-
Memory

...ertiary face, Fig. 83, the dominance of Memory is noted as 10, 10, and 9. Parts of Language, Form and Attention also range at 9, while some of the specifics of Color, Reason and Stability stand at 8.

The Mental Card Index:

Among these specialized faculties, the faculty of Memory has the particular task of topical or thematic recollection, the task of acting as the Card Index of the mentality. Its office is, literally, to keep track of the prominent facts of interest that come into or that are going on in the mentality, to recollect information possessed by one faculty for the use of another faculty. Memory is able to do this just in proportion to the degree that it was originally impressed by the relations of the chief facts of objects, places, actions, systems, and time as the energies of those facts passed through its own particular region.

Line of Least Resistance:

Memory is able to make information available to other faculties by acting widely under the law of mimetic structures—the law, or fact, that energies travel easiest in structures in which similar energies have traveled. By following out the paths of the original energies with similar or like energies, Memory is able to reawaken dormant regions and to aid other faculties in the correlation of distributed matters that were originally related to each other through the fact of coincidence of impression, or through similarities of use or attributes, or through relations of properties or of modes of activities.

The Mental Hunt for a Word:

To illustrate these rather complicated processes of Memory: Suppose one desired to look up the therapeutics of a certain poisonous plant, but could not recall the plant’s name and could only recall the plant indistinctly by its form and color. The effort of Memory, searching for a clue, arouses the words “Virginia Creeper” in the faculty of Language. The familiar Virginia creeper recalls its associated name, Ampelopsis quinquefolia—the five-leaved—but does not resurrect the name wanted. The idea “five-leaved,” however, is sent to the faculty of Form, and that of the “autumn purple”
of Virginia creeper is sent to the faculty of Color. Gradually, the association of five-leaved to the similar, three-leaved, and of autumn purple to crimson and purple, brings from Form the distinctive, but before unremembered, “poison ivy.” From this latter association, Language suggests the forgotten “poison oak,” and then, again by association, its technical name, Rhus toxicodendron. The faculty of Reason responds to Rhus toxicodendron with a familiar application of sodium sulphate or grindelia or salve of ichthyol, as indicated. Thus Memory, seizing its own familiar chief fact, feels out the other faculties, congregates their dormant information, and brings about the act of recollection.

**Comparisons of Regional Sizes:**

The region of Memory in the forehead, above the region of Color, and between the regions of Attention and of Language, is outlined by the dotted line on face a, Fig. 84.

In face a this large region indicates a profound memory of facts, of time and of relations, and a corresponding power in the association of similars.

In face b the region is not as large in surface nor as long in fibre; it is evident that Memory is only above moderate in size in comparison with the high points of the face. The outline of the temple region indicates a hollowness at the outer margin of the Memory region. This face b finds some difficulty in recollection of facts and is not especially conscious of time or of periodicity.

Face c has a contracted region above the crest of the brows. This indicates that Attention and Memory are relatively smaller than the average of the mentality. The region of Memory is not outlined in this face, but it is shown by its surroundings that Memory must be relatively below the average.

Face d is a peculiar, yet not infrequently seen, cast of face. The head is extremely wide, the brows projecting, the nose short but its bridge powerful; the forehead slopes broadly backward from the powerful Form, Color and Number. In this face d Attention and Memory with the sidehead regions take second rank in power. When endowed with high quality, faces of this general character frequently reach great success in the arts and trades and in the more markedly perceptive professions—as artists, opticians, naturalists—but seldom succeed in the technical sciences.
Face e is frequently seen among counter salesmen who briskly hold down their position, but climb no higher.

Face f has apparently an evenly developed intellect. Memory holds its average along the profile line. The forehead is unusually high and the tophead and sidehead are full.

Some Typical Vocations Where Memory is Essential

Teacher: The vocation of teaching requires Reason as the dominant when the general educational and scientific branches are taught; this should have imagination as its essential, and Language, Memory, and the Aspirations as supporting faculties or subfaculties. When the arts are the subjects taught, the faculty from which the art arises should be the dominant, with the others noted above as supporting.

Geologist: The geologist has more and more broadly taken part in the great industries with the advance of chemistry. He is vocationally interested in the industrial mineral, in the formation of building stone and earths, in the deposits of paint materials, in oil sands and strata, in matters of watersheds, in the fertility of soils, and hundreds of special commercial elements.

In addition to his dominant Reason-analysis, which gives him the chemistry and physics of his science, he needs the essentials Form, imagination, Memory, capable vocabulary, and Attention.

Commercial Investigator: The commercial investigator must be able to make appraisements of property values and of the natural or industrial opportunities for enterprises, as found in the property, the means of power, the employment population, the transportation of products, the hygienic and climatic conditions, and all other matters having a bearing upon the industry or business in which he is interested. He must have large Reason in order to make estimates and comparisons, large Attention and Number. He must also have large equity, and a large Memory of facts, of relations of values and of the various data that relate to his profession. Often such an investigator must carry in memory masses of new facts concerning many different plants.

Employment Manager: In this vocation a dominant Reason must be backed up by high Memory of facts, time and
system, since these are seldom routine and must be ready at hand. The immediate supporting faculties are Language, calculation, the Executives and Sociability.

Appraiser: The appraiser of property and goods, particularly the fire insurance adjuster and appraiser, must have Number dominant in order to carry in memory the great mass of general prices, and the equations of values. This should be aided by a large Memory of facts and supported by Industry, Stability and the subfaculties of Attention. Often a large equity and Caution are important faculties.

Actuary: The actuary should have a dominant Number, giving him complete control of commercial arithmetic, a keen sense of equity in estimating insurance risks and investment values, supported by the essential Memory subfaculties, by a knowledge of business methods and by strong object-form.

Price Marker: The price marker should have dominant Number with essential Memory and observation. Price lists and price tickets vary much from time to time, and require a retentive memory of objects and numbers.

Bookseller: The bookseller requires Language dominant; he should be familiar with many kinds of literature, with the works of authors and the problems of culture and the arts. His Language should be supported by good business ability, by a high fact Memory, by keen observation and by a large Sociability. His business is a notable mixture of commercial enterprise and culture. See “Business,” in “How To Choose the Right Vocation.”

Purchasing Agent: The purchasing agent must know the nature of the products he is to buy and generally the technical problems entering into their use or quality. His dominant in the Intellect is generally Memory, but the Executives should be high, especially utility, firmness, equity, and protection, and also intuition, foresight, and generally the subfaculties of Attention or of Form. Generally these required abilities conform to those of the buyer for a firm. For railroad and other mechanical supplies, it is often necessary that Construction, Reason and Number shall be high, that is, close to the maximum line.

For some other vocations see table of Tentative Analysis of Memory Concepts.
A RECONSIDERATION

of THE REGIONAL INFLUENCE AND PRODUCTS OF MEMORY

through

QUESTIONS AND ANSWERS

Question: Where is the quantitative indication of Memory?

Answer: In the forehead above the faculty of Color, between it and Reason; it blends on the inner side with Attention and on the outer side with Language.

Question: What general differences in kinds of Memory are seen in the three faces on Fig. 79?

Answer: In face a, a broad and recollective Memory, widely associated with the activities of the other faculties; in face b, a transient fact Memory, capable of keeping in hand a great many temporary details and matters of immediate interest; in face c, a fact and sequence Memory which spontaneously goes back to its personal-knowledge problems. This faculty is long and fairly broad, but it is somewhat narrowly supported.

Question: What contours of face a indicate its Memory peculiarities?

Answer: Its own unusual length and breadth and its association with strong Attention, Language, Reason and Number.

Question: What contours of face b indicate its Memory peculiarities?

Answer: Its length, not extreme in itself, as compared with its breadth, and the fact that it is not markedly supported by either focused Attention or by Language.

Question: What contours of face c indicate its Memory peculiarities?

Answer: Its enormous length and its association with excellent focused Attention (see upper end of nose in Attention's region) and with fairly large Form.
Question: How can one describe the fact of Memory?

Answer: As the ability of living structures to receive energies, to retain the changes of structure the energies create, and at a future time to repeat again the same quality of energy. The changes of structure are probably both physical and mental.

Question: Are vital energies, of which memory energies are a part, widely unlike?

Answer: It seems logical, from the nature of their sources and effects, that vital energies vary greatly in their quality and their effects.

Question: From the nature of their effects does it seem logical that the demarcations are sharp between the kinds or qualities of vital energies?

Answer: No; their actions imply a gradual change from the simplest vital energies to the most complex mental energies, with only large enough differences to effect their normal distribution and functional activities. The vital functions and the mental faculties are thus organized in each local region.

Question: If Memory is small or only moderate in size, what advice can be given for its culture?

Answer: The individual should be advised to make a practice of carefully noting, by one definite mental act, the essences of the things to be remembered. This can be done by methods suggested in the text. First, the individual should pay attention to the specific points of interest in the subjects of his vocation, by connecting those important elements with each other as associations of ideas, the review and recollection of scattered pieces of information, mentally gathering one part of a subject after another in groups for future use, drawing conclusions in which everything that can be brought to bear is briefly taken into account.

Question: If a class of ideas or of facts is hard to recall, what advice should be given?

Answer: That the peculiarities of that class should be noted in relation to how they can be used, in relation to the places where they occurred or the times when they happened or when other important actions took place.

The advice should urge mental system, dependence upon specific Memory, the avoidance of indifference at the time of
the occurrence, the sense of usefulness of the idea or impression. Often a single verbal repetition of the thing heard, a moment's attention to the object to be remembered, a later review of a subject expressed in another form, or a suggestive study of a similar set of facts while trying to recall the earlier subject matter, will greatly aid in the recollection.

**Question:** What advice can be given in regard to the relations of Memory association, aggregation, congregation, and antithesis?

**Answer:** That similar ideas, impressions, facts and pieces of information should be associated by their similarities or likeness, as forms, color, size, etc.; that matters that differ from each other, but have the same uses, should be systematically gathered (as aggregations) by the key to their use; that Memory may congregate unlike ideas, or views or facts through these happening at the same time, or in the same place, since these are modes of mental congregation. The fact of memory antithesis or contrast is often as direct and potent in recollection as is that of association.
MERTON COURSE
VOCATIONAL COUNSELING
and
EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

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LESSON EIGHT
The Nervous System and Mental Acts

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by
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MERTON COURSE
in
Vocational Counseling and Employee Selection

THE ART OF JUDGING PEOPLE

LESSON EIGHT
The Nervous System and Mental Acts

Nervous System Is Foundation:

Since beginning our studies in vocational counseling, we have kept in mind the fact that the foundation of the whole profession rests in a knowledge of the action of the Nervous System of Man. While this is a dominating fact, it is also true that a knowledge of the nervous system from an anatomical standpoint will only be of little value to us.

We must understand the nervous system from the mental viewpoint; we must understand how the brain and its nerves and organs of sense gather our information, create our knowledge, our feelings and our purposes. It is necessary that we elaborate further what has already been said in regard to the mental plan and structures.

Supervision and Control of Brain:

In order that the various functions of the mental life and the control of the body shall be carried on, every tissue, process and change in every cell and organ of the body must be under the constant supervision and control of the brain and its mental organs.

Every nerve cell and nerve fibre has its own functions to carry on—of this there can be no doubt.

If this is true of the simplest processes of nutrition, it must be true in a proportionate degree of the most complex processes of mental life.

We shall find that the mental and physical organs of sense, organs of nutrition, organs of motion and organs of expression are relatively large or small, intense or sluggish, just in
proportion to the fineness and complexity of the nerve endowment of those organs or fibres.

Growth and Nerve Influence:

Growth in any particular direction or in any particular organ shows intensified nerve influence in that direction or in that organ.

If we find an organ performing more than one function we shall find each function performed regionally, either by a layer of cells or by regions of cells and fibres gradually blended with regions performing similar functions and associated by mutual government boundaries.

It is certainly illogical to suppose that the mentality, the crowning organism of all creation, violates the natural laws which govern all other organisms and works in an opposite way from all other vital structures—to suppose that the whole brain or mentality is occupied in performing each of its multiplicity of variable acts, instead of these different acts being performed by specific organs and parts. Every evidence so far adduced proves to the contrary. The problems of a complex organization cannot be solved without a study of the structures and laws of that organism. We must, therefore, briefly study and review the growth and the general plan of the nervous system.

Beginning with a low order of nervous system, we shall trace ascending steps in the order of mental development as we trace similar steps in the complexity of the general nervous system of the animals and of man, and then outline as simply as we can some of the mental structures of the human mentality.

Fig. 97 is a chart of the grades of brains of some of the animals and of mankind, illustrating the changes in size and shape in the upward steps of accomplishment.

Degrees of Development:

In the small free-swimming water cells, Ascidia, the nervous system is a ganglion of nerve-cells from which sense fibres run inward, and motor fibres run outward.

The amphioxus, a grade higher—half worm and half fish—has a spinal column but no skull nor cranium; merely a single cord with ganglions along it. Its intelligence is about equal to the simpleness of its nervous system, like other worms of low order.
Insects have a higher form of nervous system—a cranium and cerebral ganglia and bilateral nerve-trunks extending to a bilateral abdominal ganglia. Considering the smallness of their cranial ganglia, the insects, especially the hemenopters—bees, wasps, ants, termites, etc.—have wonderful intelligence and vocational aptitude.

The pisces, or fishes, have three bilateral brain ganglia and a spinal cord almost as large around as their intelligence lobes—if one may presume that they have intelligence.

The ophidia, or serpents, have still larger brain lobes in proportion to their whole body and to the size of their spinal cord. They have more mental ability than have the fishes.

The chelonia, or turtles and tortoises, have still larger brain ganglia than have the serpents and, despite ancient sayings concerning serpent wisdom, probably have more intelligence than the snakes or fishes.

Following the reptilia come the birds.

Following the birds come the mammalia from the monotremes to the primates, from the duck-moles through a rising scale of brains up to man.

The lemurs, or monkeys, of the prosimii, have fairly large, but not much convoluted, brains. They are not mentally equal to the apes among primates.

Among the apes the gorilla and the chimpanzee are the most intelligent. The brain of the gorilla is uncommonly large at the back, wide at the base, and tapers to a short frontal lobe. His disposition is ugly and destructive, his body is large and bulky having heavy shoulders and long arms. Although his brain mass is not nearly as large as an adult human idiot, he is much more intelligent. In fact, a human being with a brain no larger than the normal brain of the gorilla or any of the moderate sized mammalia other than man is invariably idiotic. It is said that a man's brain weighing less than 37 ounces or a woman's brain weighing less than 34 ounces is invariably idiotic.

If we compare the whole range of brains up to man's with the size of man's brain, we find that only the elephant and the whale have as large brains as the average human being. The brains of the elephant and the whale, while very large, are under the burden of governing their large bodies, and are of comparatively low quality, and like those of the other animals do not reach the regions of reasoning and other high processes of the human mentality.
We now reach a series of facts bearing directly upon the truth of the regional location of mental faculties in the brain as well as upon their local regional government of the body.

If we place the brain centers of the brains of the mammalian orders, from low to high, over one another, there is a gradual increase in size and complexity. Particularly is this true when we consider that increase in body mass demands increase in nervous effort for its physical government.

A more striking fact is that as the grade and range of intelligence become greater and more pacific, the anterior, or frontal, lobes increase in relative size and rise higher from their base line and broaden at the sides.

From the mastiff to the gorilla is a considerable step in mentality, albeit, it is not so much in the difference in quality as in the possible quantity of ability of which the carnivora and the early primates are capable; but from the gorilla to the Hottentot is a vastly greater step in mentality, in comparison to the amount of the mentality and to the quality of the mental abilities.

From the Bushman and Hottentot brain to that of the Aryan there is a vast step in the quantity of ability, but there is no appreciable difference in the functional kinds of ability. It is evident that whatever mental kinds of ability are carried on in the fore part of the brain, the Hottentot has much less of those kinds of ability in proportion than has the Aryan, and that the chimpanzee has still less than the Hottentot.

Demarcation Between Man and Other Mammalia:

The relation of mentality to the contour and structure of the brain is most easily studied in the mammalia. Compared with the human brain, the animal mammalian brain is relatively large at the base and back region, tapers to a low narrow frontal region, and has a large cerebellum under the back base of the cerebrum. See the brains of the marmoset, macaque, and gorilla, Fig. 97. The cerebellum is the brain region of locomotive co-ordination.

As the intelligence increases, the frontal regions increase in relative size; the quality and intellectuality of mentality increase from below upward and forward. Malformation and quality of the idiotic brain, not its lack of size, destroy its intelligence; its structure and organization are malformed or incomplete.
In the lowest illustration of Fig. 97 we have drawn outlines of the brains of the mastiff, gorilla, Hottentot and Aryan. It is clearly seen that the brain develops chiefly forward and upward, as intelligence increases, and this is more clearly shown in the figure of the mental focus of human brains.

Some mammalia other than man possess in varying degrees of power all the senses possessed by man. These mammalia may also possess the faculties of Perception, as Form, Color, Number; the faculties of Retention, as Attention, Memory and Language; the faculties of the Defension function of the Will, as Economy, Caution and Defense; those of the function of Impulsion, as Aversion, Destruction and Mobility; the parental faculties; and some traces of Industry, Liberty and Laudation, though these do not often reach any or definite organized relations. The demarcation between the mentality of man and that of the animal kingdom runs horizontally along the top of the lower two-thirds or less of the brain.

The Cranium:

The brain is enclosed in a bony shell; the bones are mitred, or sutured at their edges, and their structure is such as to give them considerable elasticity and to prevent them from being easily broken. The brain is thus protected from ordinary injury, and provision is made in its government and structure for slow processes of change and growth.

The cranial contours are under the control of the mentality and while the processes of change in these contours are comparatively slow, they are such as may be required by the brain, or its mental organs. The cranial surface is not a region of mobile expression, but as an instrument of cerebral protection its internal form must be adjusted to give room for the volume of brain substance of each region and to accommodate the fibral length of the nerves that must obey their laws of structure, and what we may call their radius vector, or spread of territory at the ends of the nerves.
In the cranium of the child and youth the changes in the skull are fairly rapid and progressive or orderly in the direction where growth is necessary. When this growth ceases to be necessary to the brain structures the skull stops growing larger or varying as commanded. If intensive effort later in life demands that other changes take place, the same causes at work in the original growth and formation can bring about later changes in cranial contours, perhaps not with the same rapidity as in youth when the structures are particularly vital, but as fast as the mental conditions require the changes. Careful measurements of the same craniums made over periods of five or ten or twenty years clearly prove that regional changes take place under intense mental action, under a local regional stress for two or more years.

The Convolutions:

In Fig. 99 we have removed some of the bones of one side of the cranium and the membranes and nerves, so that we may clearly see the convolutions of the surface. These are folded against each other, dipping inward sometimes an inch or more, in a way that gives a surface of about 570 square inches. We see in this drawing the convolutions of the left side of the brain; both sides are much alike, hence are called hemispheres.

Inner Surface of a Hemisphere:

In Fig. 100 we have cut away the left half of the brain. This brings to view the inner surface of the half-sphere and the
spinal brain centers, and below a general view of the spinal cord within the spinal column.

In the drawing there is also shown the tracings of the nasal cavity, the mouth, tongue and throat.
General Plan of the Brain:

Fig. 101 of the brain shows many of the bundles of nerve tracts, a larger number of others which are cut away, and the chief mental and physiological centers of the brain (Optic Thalamus and Corpus Striatum). The bundles which constitute the "white matter" of the brain are chiefly insulated nerves. The "gray matter" is seen around the folded margin of the convolutions. These are the surface cell substance, as shown in the following illustrations of a small section in successive degrees of enlargement.

The great ganglionic centers of the brain also have gray cell substances in them as the switches and association centers, and the points of transfer of nerve forces that form ideas and energies of thought, feeling, purpose and control.

In the dissected brain (Fig. 101) some bundles of nerves of the senses, tactile and controlling organs, are shown coming in from the spinal cord through the thalamus, then through the striatum and out to the surface under the forehead. Other bundles arise in the surface, trace inward to the thalamus, then to the striatum and down the spinal cord to the body, or out through the motor nerves of the face and organs of the senses.

The Convolutions and Periphery:

The surface of the brain is made up of a deep layer of nerve cells of several kinds, commonly called the cortical periphery. It is said that in capable mentalities these cells in the surface number from two billions to two and a half billions. Each cell may be able to hold a complete concept or idea; perhaps when the idea is complex it may require a group of cells.

In Fig 102, a is the section of a convolution, somewhat enlarged as a-2, from which fig. b is cut (about \(\frac{1}{8}\) inch square) and enlarged in the next figure.
In Fig. 103 b-c we have magnified the section b about forty diameters, and silver stain reveals the forms of the cells and their processes or fibres. In a cubic eighth of an inch there are probably 60,000 cells. These cells carry on the various processes of our mental life and govern the organs of the body.

It is easy to trace the nerve line processes from cell to cell, to trace bundles of nerves from some brain regions and ganglia to other regions, but extremely difficult to determine, from their structure, what particular function the various nerves carry on.

Nevertheless, living nature is orderly, and is under the necessity of keeping up orderly and efficacious methods, obey-
FIG. 104
ing laws, uniting functions and powers in an orderly way. By studying these necessities and laws, by comparing degrees of power with volumes of organic sizes, by noting variations of effects in relation to quantity of organ and of the structures that are at work, one may discover what the organs themselves will not say of themselves, for it is their work to carry out actions, not otherwise to explain their natures.

The Story of Nerve Cells:

The nerve cells, as we see by the drawing, Fig. 104, are about eight times as wide and deep as the nerve part of their tubes. They are white oval bodies, partly filled with life-containing plasma; near one side of their globes we see a thickened spot, or kernel, and inside of that still a smaller kernel. In the fluid part, the before-life-fluid as it may be translated, there are little granular parts that look like translucent grains of soft sand or sugar. Sometimes there are yellow brown pigment grains, like water color paints. In some of these ordering and knowing cells, there are striped fibres, spaced off like lines. Some of these cells are quite smooth ovals. Some of them have long projections. When the cell has only one projection, it is called unipolar; when it has two projections it is called bipolar; and some having more than two are called many-polar and celia cells.

These projections extend into several branches, filled with the substances of the cell. Some of these branches we see taper to a point; others reach out and touch the branches of other cells. Then one main branch generally runs toward the nerve tube, which coats it and carries its message along the bundle of other nerve tubes, to some distant part.

We know how electricians insulate wires to keep the electric force on the wire. So the nerves are insulated.

The nerves of the spinal cord are the largest in the body. Some are so large that only 1250 would lie side by side within an inch. Some are so small that 20,000 would lie side by side to an inch. But each of these has its sheath. Each can carry its messages without disturbing others.

Resurvey and Extension of Basic Elements:

Having, in our studies, passed by the sensations, that is, the faculties of Appetite, Feeling and Impression, including the senses of taste and hunger, of touch, heat and general feeling, and under Impression the sense of smell and its re-
sponses to odors and organic qualities, we took up the Perceptions of Color, Form and Number. These were followed by the Retentions, as Attention, Specific Memory, and Language, the latter arising from the sense of hearing. These faculties, and the treatment of the temperaments, gave us a foundation for understanding clearly the course and method of mental action in the elaboration of ideas into judgments, desires and actions; for determining the regional locations of the temperaments; and for a scientific survey of the cerebral locations of the faculties.

It will be well briefly to review and to extend some of these phases concerning the chief sources of mental analysis and order of mental accomplishment. The vocational counselor must not hesitate to gain all of the basic element open to his survey.

Tentative Statement of Requirements of All Life:

Let us make a tentative statement of the mental requirements of all life, grouping the primary facts of vitality.

Statement (a): The simplest life requires the preservation of the body and of the race through nutrition and reproduction.

This statement holds good whether we are dealing with fungoids or ameboids or with human beings. Even before the nervous system is defined in the lowest forms of life, there is a sense that avoids poisons, that is vitally selective, that goes beyond chemical metabolisms, that forms compounds and good congregations that conform to the needs of life and break up the moment life's mastery over them is lost. We must then continue our statement of organization as it is extended in the more advanced forms of animal life.
Mental Powers Possessed by Man and the Animals:

**Group I.**

**Intellectual**

- The Perception and Retention of Information received through the senses of Taste, Smell, Touch, Sight, and Hearing.

**Social**

- The Preservation of the Body and the Race through Nutrition—appetite, feeling, and impression—and Reproduction of the Species, etc.

**Volitional**

- The Perpetuation of Nutrition and of the Race by Defense and Mobility through the use of Property and Energy.

But one can only see colors, one can only smell odors, or taste flavors, or hear sounds; each sense has its own particular action that no other sense can carry on. The senses are lower forms of mental action than are the Reflective, Receptive, Aspiring, Rulership and Co-active functions.

The perception of forms, colors and quantity, the retention of sounds, the memory of actions and habits, and the ability to pay close attention are evident abilities of many of the higher animals and some of the lower species of animals. Here, then, is a normal division of mentality extending through all of the higher orders of animal life, but beyond which the animal kingdom does not mentally pass.

One cannot say that the animal kingdom is intellectually limited to the capacity of the seven lower functions and that no intuition or higher reflective mental ability is possible to it; but the reach of mental action of a higher order seems to stop short of any degree of complex reasoning.

When life reaches the grade of the animal kingdom and the degree of development that possesses special organs of sense, we must add to statement (a):

Statement (b): The feeling, tasting, smelling, hearing and seeing information received through the senses is the basis of intelligence.

We say that this is the basis of intelligence because there is much more to intelligence than the reception of sensations from the world around us. These sensations are the raw material or, truly stated, the raw energy transformed by the organs of sense for our use. Thus the animal kingdom, especially the higher orders of mammalia other than man, have the same number and kind of senses that man has. Sometimes some of these are more acute, and sometimes much less acute than the same senses are in man, but never all of them in a single animal more acute than in any single man.

Strange as it may seem, these senses need to act in groups;
they need to be near each other in the mentality and they are in particular ways capable of substituting for or assisting each other. To illustrate with a few instances: Man both sees and feels forms; sees, hears and feels numbers; tastes and smells food; feels, sees and hears motions.

The ability to receive nutrition for the body, and receptivity of the energy reports of the senses, are not sufficient mental actions for any of the forms of life that do not have their food supplied by their media of living: in some degree all must act.

These facts warrant us in assuming a third fundamental necessity:

Statement (c): The perpetuation and nutritive protection of the body and of the race are maintained by Defense and Mobility through their use of property and energy as the basis of Will.

To act in a conscious dynamic direction is Will; it is a volition to do something, it is an effort of a purpose by movement, and it requires control of the organs of mobility.

The next step in nervous and mental development carries the mentality above the range of animal life. These higher faculties carry the range into the upper mentality.

The evidence of this is seen in the changing contours and increased development of the forehead, in the fact that this region does not respond in a motive expression to experimental stimulation, that it varies in contour with dominating variation in intellectual abilities, and in many other effects.

Nowhere are these regions of the brain and this relation to the brain centers found to maintain these quantity values as in man, nor is it possible in the culture of the animals to raise them to the state of reasoning that is equivalent to prediction and other forms of reflective elaboration.

Therefore we are prepared to make a formal statement as Group II.

**Mental Powers Perfectly Possessed by Man Alone:**

<table>
<thead>
<tr>
<th>Intellectual</th>
<th>Social</th>
<th>Volitional</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Elaboration of Information into forms of knowledge, by the high faculties of the intellect.</td>
<td>Qualification of Emotions into forms of Constant Affections, by the high faculties of the Affections.</td>
<td>The Creation of Executive Power and Purpose for the Organization of Social Action, by the high faculties of the Will.</td>
</tr>
</tbody>
</table>

We realize from the above tables that if a human being is
to be mentally more than the animal, he must add mental abilities to his nature that the animal does not possess. This addition must be radical in its nature and results. A fourth fundamental necessity is then apparent, namely:

Statement (d): Information must be elaborated into forms of knowledge and directive choice.

This elaboration can be done by involution of information and by reflection, by organs having wide and selective congregations and transformations of energy. Selection demands choice, and choice demands concurrent facts of memory. It is evident that reasoning, the central factor of reflection, is a complex process; it is the transformation of various kinds of energy into other kinds of energy.

Progress in the ascent of the static life of man requires the development of unitive and persisting emotions, affections and desires, therefore it is essential that man possess:

Statement (e): Functions capable of qualifying the emotions and feelings into energies of constant affection.

Static functions desire but cannot provide the conditions for their full expression; to desire and to plan are not complete mental facts; desiring and planning do not imply effective action. It is evident that in order to complete the formative and static conditions there must be carried on some kind of effort by dynamic action.

The dynamic section of Group II is required in this high range of the mentality just as the dynamic section was required in the low range. Hence the necessity of this section is:

Statement (f): There must be creation of executive power and purpose for the organization of social power and action.

Just as Defension and Impulsion are individualistic and socially monarchistic, so is the higher expression of executive power and purpose unitive and mutual among functions and among individuals.

The animal mentality verges upon these kinds of purposes in some species, but it does so at the impulse of low (not small but low) functions in the order of mentality. Under the stimulation of fear some of the animals show a tendency to executive mutualism and protection, but only in the human mentality do we find predictive mutualism.

We have placed the higher, the last named, of these ranges of necessities, Group II, over the lower, Group I, to see what the joint product will be as expressed in terms of general
action. We shall also consider the bearing of these groups on the subject of human vocations.

**Classes of Mental Action:**

<table>
<thead>
<tr>
<th>Intellectual</th>
<th>Social</th>
<th>Volitional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Intellect is Formal and Receives Information from all of the senses and Organizes that Information into Directive Knowledge and Intentional Choice.</strong></td>
<td><strong>The Affections are Static and Attractive. They hold the Body and the Family and Society in Organized Bodies.</strong></td>
<td><strong>The Will is Dynamic, it Executes the Directions of the Intellect and the Desires of the Affections for the Purposes of Life and Order.</strong></td>
</tr>
</tbody>
</table>

The interpretation of the first section gives us this tentative formula:

Statement (g): *The Intellect is Formal. It receives information from all of the senses and organizes that information into Directive Knowledge and Intentional Choice.*

The individual under this part of the statement has done nothing except know and plan. None the less, however, we see here in this knowing and planning the natural origins of nearly all vocations; in this reception of all of the information of the senses and the organization of information into directive knowledge and intentional choice, we find the fact of the creation of the vocations in order to satisfy the wants arising in other regions of the mentality and the body that mentality governs.

So far in this combination the individual has no particular incentive to know or to plan. (That the intellect per se does not furnish such incentive is a valuable hint in the matter of education as well as in the problems of vocational study and counseling.)

Let us see if we can discover in the second class, the Static, or Social, section, incentives for knowing and planning.

The interpretation of the second section gives us this tentative formula:

Statement (h): *The Affections are Static and Attractive. They Create Desires and hold the Body and the Family and Society in Organized Bodies.*

Here we find enormous incentives to know and to plan; these incentives are, briefly stated, the continued life of the body, the enjoyment of mutual relations of the family, and the pleasurable relations of society. Some have said that the intellect has its own incentives to effort; this may be true of one
generation, but there would not be another generation in the absence of these static functions.

We have already seen that knowledge and affection were not complete mentality, that action and mutual action were necessary.

The interpretation of the third section gives us this tentative formula:

Statement (i): The Will is Dynamic. It executes the Directions of the Intellect and the Desires of the Affections for the Purposes of Life and Order.

Here we have, under the direction of the human intellect, the expressions of executive social power, the use of bodily energy and of property to satisfy the mental affections and desires and the feelings of the body.

It is self-evident that the Body and the Family and Society form the pivot around which balance the efforts of all of the other capabilities.

Conclusion:

These premises lead to the conclusion that the mental and the physical organisms are each threefold, and that they respond to each other in three classes of organs.

Let us briefly repeat these as statements of the temperaments, or dispositions, and we shall discover that the Intellect needs the Executives of the Will. By this statement we can set out the relations of the cerebral mental system, or brain, to the bodily mental, or nervous, system.

An intimate relation exists between the formative intellect and the nervous system, between the static affections and the nutritive system, between the dynamic will and the muscles and bones, or motive system.

We thus see that the intellect, the affections and the will carry on mental life; that the nervous system, the nutritive system and the motive systems carry on bodily life.

If we keep these mental and bodily relations in mind we shall find these facts of great importance both as aids to our memory and as vocational facts. A thousand evidences will accumulate to prove that these are not arbitrary statements.

Summary of Relations:

These relations can be briefly stated as: The intellect receives information through the nerves and organs of sense, and it responds to the nerves and organs of sense. Its dominance creates the mental and nervous temperament.
FIG. 106

1. Pair - Olfactory
2. - Optic
3. - Oculomotorius
4. - Abducens
5. - Trigeminus
6. - Facial
7. - Auditory
8. - Glossopharyngeal
9. - Pneumogastric
10. - Spinal Accessory
11. - Hypoglossal
12. (Semilunar)
The affections are attractive and static. They govern the nutritive system. Their dominance creates the social and the vital temperament.

The will is volitional and dynamic. It governs the motive system. Its dominance creates the executive and the motive temperament.

Concerning the Circuit of Ideas:

If we are to understand how the mentality acts in changing the sensations of the body, that is, the reports the sense organs make to the brain and its mental organs, we must consider for a moment the Circuit of Ideas, or, as it were, the path over which the energies from the sense organs of the eye and ear, of touch, taste and smell travel in becoming elaborated into ideas; then how these ideas are made into emotions and purposes. This description will be extended under each faculty in the illustration of the faculty products and relations.

The Circuit of Mental Acts:

If we trace the mental functions around their circuit, from below upward, commencing with the simplest and following with those that are successively most needed for the next step beyond, we shall find these functions blend toward or into each other in an orderly way, and take their course forward and upward through the forward regions of the brain.

In the order of simplicity and of life requirements we find that the Sensations of touch, taste and smell are the first and lowest of mental acts; this function of Sensation begins to appear in plant life, probably in the processes of nutrition. When the energies of the senses reach the cortical periphery (cortex cerebri), they at once cease to be wholly sensations and become modified mental energies involving the whole or parts of the mentality. The purely sensory path is a peripheral neuron, central neuron (fillet) and centro-cortical.

Next come the Perceptions, the sight-sense of quantities forms, colors and perspective.

Following the Perceptions comes the Retention of prominent sense-facts, the congregation of similar sense-facts in Attention, or in specific Memory, and in the retention of the sense of sounds. Sounds are finally elaborated into words or music. Until this congregation of sense-facts from the organs of Sense, and the recognition of various energy symbols and form symbols, as symbols, takes place in the mentality, it is
hardly possible to reason, because Reason would have no energies of information to elaborate.

We have studied the six faculties up to the line of the intellect where the intellectual capabilities of the animal cease, and beyond which only mankind can go in the elaboration of ideas, in the working out of complex thought, of which Inspiration, Reason and Construction are the next great faculties. In future studies we shall consider thoroughly the faculties that lie beyond the special retentive faculties of our previous studies. In the rest of this study we shall consider, as an outline of those future studies, some of the general facts that will aid in organizing our knowledge of their nature and our reasoning over their mastery.

Reasoning—a product of the function of Reflection—requires, in part, the concurrent realization of non-concurrent facts; the reports of separated things and of actions that did not happen together must be brought together and elaborated. The memory and the congregation of facts are not sufficiently complex actions to be called reasoning. The animal can remember, but it cannot transform (that is, reason) sense energies into varied concepts and into predictions. To reason is to predict and to direct as well as to form judgment. “Tomorrow” has no meaning to the animal.

To rise higher than the animal in the scale of mental ability requires the activity of the function of Reflection.

The next function beyond Reflection is Reception—the process of making acceptable choice; this is the final requirement of intellectual ability.

All of the preceding functions except Sensation belong to the Intellect region of the mentality.

The foregoing mental functions—Sensation, Perception, Retention, Reflection and Reception—are not only the sources of the accumulation and the elaboration of all knowledge, but they are also either the origin or the directors of all of man’s vocations; the intensive execution of vocations, however, may depend upon other functions—functions in the executive realm of mentality.

Following Reception, the next essential of the mentality is the function of Aspiration which belongs to the realm of feeling and desire.

Next, follow the forms of executive power whose activities are necessary in order to get results.

All of the following functions belong to the Will region of the mentality.
Of the various kinds of mental stimulus to executiveness, Ambition is undoubtedly the highest. It has the nearest relations to the region of reflective culture on the formal, or Intellect, side of the mentality and to productive industry on the dynamic, or Will, side.

Following the function of Ambition is the function of Cooperation which embraces Industry, Liberty and Integrity. Industry puts into effect the demands and purposes of Ambition and of the earlier desires; it does this by the application of individual and organized effort to the materials of the world around us.

The function of Defense which immediately follows conserves the surplus products of the other functions and in-
stigates the processes of self-defense and wealth accumulation.

The last function of the circuit, Impulsion, carries the motives of defense into actions of antipathy and physical destruction. Some forms of physical destruction are necessary to all progress.

**Reflection the Basis of Progress:**

Activity in the region of Reflection is the basis of progress in the human race; this region must be in efficient activity if there are to be the normal results of progressive mental activity in the creative world. The activity of the lower regions may enable one to labor, to imitate, to copy and to continue things as they are, but it is only through the activity of the region of Reflection that one can go beyond the accomplishment of to-day and make the new thing of to-morrow. Therefore, in the activity of this region is found the source of progressive science, of discovery, and of the new executiveness.

**Mental Fatigue:**

In this study of the Nervous System it is fitting that we call attention to the problem of mental fatigue. It would be well that the vocational counselor study a standard medical work upon this subject. His practice, whether as a counselor, welfare manager or an employment executive, will have opportunities for giving advice on these matters.

Fatigue may be transient, the result of a day or a week of extreme effort. In this case the remedy is simply normal rest and temporary avocational interests, slacking up for a time to gain the usual volume of vigor. Transient fatigue seldom reduces nutritive or muscular activities, and sometimes is benefitted by a reactive degree of muscular exercise, though this doctrine is often carried to extremes. Exercise that is most beneficial is light, quick and extended over the whole muscular system in various forms of extension and relaxation of the muscles, primarily designed to distribute the circulation and relax tensed muscular regions. Many working attitudes of the body have restrictive influences upon the free circulation of the veins, sometimes of the arteries. A relaxing and stretching as noted above taken several times a day will tend to correct this arrested circulation and in various ways rest...
the nervous system. But while these remedies should be fol-
lowed in the ordinary working course, they are not sufficient
to correct the debilitating effect of constant and severe in-
tellectual effort, nor to offset the effect of prolonged worry,
discontent, overwork, and exhaustion of the entire nervous
system.

Physical fatigue or overwork more quickly indicates itself
by loss of weight than does mental fatigue, and it more rapidly
responds to favorable conditions.

The involuntary expression of mental strain and tiredness
is sometimes seen in the face as transient expression, in the
drawn appearance of the features or strained expression of
the eyes, or in actions resembling lack of self-control, when
otherwise there are not marked physical signs. In these in-
stances there are generally powerful faculties that are not
vocationally under stress, and the fatigue mentally is quite
local, not involving the whole nervous system, but acting
acutely upon the condition of endurance. A change of voca-
tion, especially to the natural vocation, has an immediate ben-
eficial effect. Often people are near the verge of nervous
prostration without realizing that it is due to their effort to
excel in a wrong vocation.

In prolonged effort fatigue may become a habit, or a state
of mental tension that does not make itself insistently ap-
parent to one under its influence except as a condition of las-
situde or weariness. In this condition a person often works
on year in and out without realizing how much he is below
par, or noting the progress of general depreciation and lack
of reserve force. The work seems to get harder, to require
more effort, and the ordinary periods of rest are felt to be
unsatisfactory. Many of the mistakes, accidents, oversights
and conditions of irritability are due wholly to the fact of
unconscious fatigue or to the consciousness of fatigue that
is not rightly attributed to overload, but is attributed to other
conditions in surroundings, or to the idea of uncongenial work.

The above condition directly adversely affects the quality
of nutrition, the recuperation during rest, the easments of
recreation, and the normal enjoyment of one's vocation. In
these instances the physician is seldom consulted as would
ordinarily be the case in acute illness.

The vocational counselor should exert positive direction
in such instances, to the end that a decided decrease in mental
effort should be essayed, that the change should be prolonged
to the stages of reaction to the less intensive work, and to the
The amount of fatigue one feels after severe effort is not a criterion of one's limitation of complete rest, but the condition of mental vigor felt after the night's rest is a better guide, when taken into consideration with the general mental attitude toward the work being done and one's interest in carrying the work on. Where rest seems complete and the work enjoyable, there is little danger of a breakdown from overdoing, even if the hours are long or the efforts intensive.

Where one has the required quality and there is still a lack of interest in the vocation, or a lack of ease in competing with others in it, or there is a feeling of dissatisfaction with the mental results, these are a fair presumption that the methods and faculties used are wrong. The vocational counselor will doubtless find in such cases that these conditions and the state of mental tiredness are due to the wrong vocation and that the individual would become capable, and meet with greater success, in another.

Secondary faculties are at a great disadvantage in acting in the presence of dominant faculties, not because incompetent, but because the dominants are incessantly raising “side issues” to the work, dumbly demanding recognition and unspecified expression, irritably present but unrecognized.

We have many times found that a change of vocation, even to a more difficult though natural one, has turned a man from the verge of nervous prostration to a state of buoyant and enthusiastic ease in accomplishment, has rebuilt frazzled nerves and surcharged the digestive system. Often the report comes back, much like, “You started me in a new vocation; I enjoy it as though it were a working vacation.” It is generally better than a change of climate.

Even in one’s natural vocation, working at one’s best, the labor of extreme effort or under pressure, one may travel toward nervous fatigue. But though the burden may be much heavier the effect is radically less oppressive.

**Mental Surroundings:**

Disagreeable mental surroundings are a frequent cause of mental breakdown. These surroundings may be congenial to one kind of mentality and highly antagonistic to another. Often the trouble is with the individual himself, but that fact does not lessen it any. The counselor or the employment manager will often find it a decided advantage to recommend
a change of position rather than a change of vocation. In some cases a regrouping of employees will restore an equipoise to several of them. Men who have become restless and irritable, men who are overdoing through friendship for others, and frequently men who are dissatisfied with the commonness of thought or character of those around them, are often restored to satisfied intensive activity, simply through regrouping. It does not necessarily follow that personal dislikes are idiosyncrasies, nor that such sources of irritation are not potent in wasting energy, nagging nerves, or upsetting the peaceful pursuit of one's vocational happiness. Sometimes the victim is not aware of the real causes at work, and often the victimizer is not. The vocational counselor and the employment manager should be awake to obscure causes to the same intent that the physician or the expert mechanician is awake to them when troubles arise that are not readily seen. A toothache may be no more irritating than characteristics of a "fellow servant."

**Focused Efforts:**

Prolonged or depressing fatigue may also arise from the constancy of mental action exerted in the same kind of effort, a fact illustrated by the effort to hold the hand at arm's length for twenty or thirty minutes, without the relaxation of the holding muscles. A man with powerful muscular polarities and much endurance may stand the strain of the weight of his extended arm for thirty-five or more minutes, but it will gradually yield against every effort of the will. Often a strong man can hold out his unsupported arm only ten minutes. The stress is due to the lack of changing polarities of the muscle cell. A moment's relaxation, and the arm is ready for another effort. This is equally true as an illustration of mental effort, though less remarkable. Spells of rest at reasonable intervals are aids to either mental or physical endurance and effectiveness in action. The frequent mobilizing of muscle-cells adds to their revigoration, polarization and endurance; the frequent relaxation or cessation of activity of the organs of sense preserves their acuteness; the change of mental intensive effort in a narrow subject increases the endurance of the region engaged, although the much more permanent mental effort is not carried on by repetitive action of the same cell structures as is the case with the structures of the organs of sense or those of the muscles, since these are not
organs of continued memory, but rather of transformers of energy.

The peripheral nerves of the senses are transformers of energy; the rods and cones of the retina transform light into another energy, and so do all of the sense organs transform their own kinds of energy. Their habits of rest and recreation are established by the common requisition of their functions, variable by the intensity and the exigencies of the demands upon them.

**Competing Regions:**

A large mental faculty will more ably support its sense organ than will a smaller faculty; fine quality in the nervous system will more acutely and clearly respond to sense stimulation than will lower quality; cultivated senses will more clearly and readily respond to and retain sense energies than will uncultivated or comparatively inexperienced organs in the same mentality, particularly if the requirement is complex and extensive.

**Depressed Emotions:**

It is a generally recognized fact that when the emotions or feelings are depressed, there is an adverse effect upon vocational effort. This fact is due to two main and several secondary reasons. The main causes of depression are the exhaustion of mental energy, generally accompanied by loss of sleep and rest, which hinder mental rebuilding or invigoration, and the fact that the mental regions of the emotions are largely the governors of the "sympathetic nervous system" or involuntary nerves of the nutritive organs.

The shock of bad news, the depression of sorrow or grief, the crushing of ideals, immediately reflect upon the nutritive powers of the individual, through the mental regions of control and support, and act directly by diminishing the energies that play upon the organs of digestion and of circulation.

The secondary effects of acute emotional shocks are generally in the nature of distracted attention, liability to accident, despondency that inclines to errors in judgment or of interest, and the consequent accumulation of revisions or corrections.

The manager of personnel and the vocational counselor should be alert to these conditions of depressed emotions, and by counsel, encouragement and genuine sympathy or support
or by the exercise of temporary forbearance bring about as full a recuperation of personal and vocational attitude as possible, neutralizing the effects of disconsolation, which in some instances create prolonged depression.

**Anxiety and Fear:**

The restrictions of anxiety and of fear are generally covered up by a false attitude of courage or indifference. These mental states have a much more widely exhaustive effect than is commonly supposed to be the case. The waste efforts arising from them are largely due to over-intensity mentally and to extreme tensions on the muscles in work. The lack of relaxation under these states of mind is comparable to the friction due to lack of oil in machinery, or to the over-tensions of muscles in a tiresome position.
A RECONSIDERATION
of
THE NERVOUS SYSTEM AND MENTAL ACTS
through
QUESTIONS AND ANSWERS

Question: What is the function of the nervous system?
Answer: The government of the growth and of the acts of the body.

Question: To what extent, in a general way, does it do this?
Answer: Every cell structure of the organism is under its influence.

Question: How does it exert this government?
Answer: By receiving through its incoming nerves sense and information, and by controlling the local regions of the body by means of outgoing nerves of motion, control, and structural stimulation.

Question: Can any organ, mental or physical, change its function?
Answer: Each organ must keep to its own kind of acts; otherwise its results will be abnormal confusion and disarrangement. A normal mental faculty must be ready to act, to carry on its function, whether or not it is called upon to act.

Question: What is the lowest, or simplest, form of nervous system?
Answer: A group of gangliated nerve cells such as are found in simple forms of animal life; in high forms of animal life such cells are never disconnected from the larger systems of nerves.

Question: Do the brains and the general nervous systems of the higher animals (Division B, Craniata) pass through stages of growth and of forms similar to those of the prenatal growth of man?
Answer: Man's brain up to a certain stage of development, slightly variable, can hardly be distinguished in contour from the brains of these higher animals, and grows through stages similar to the growth of these animals.
Question: Can the chimpanzee live a normal life with his brain mass much less than the brain mass required by man?

Answer: Yes, with much less. He has less than two-thirds of the number of faculties possessed by man, and of much less volume of ability in any of his faculties.

Question: What important regional fact is shown in the increase of brain mass development?

Answer: The fore-brain lobe, or region, becomes larger and larger as the animal becomes more and more domesticative, as seen in the relative difference in this region in the gorilla and the horse.

Question: How is this difference most noticeable?

Answer: By placing the brain centers in line with each other or by taking these centers as the basis of measurement.

Question: Does the same fact regarding the development of the fore-brain lobe hold good in regard to the human brain when comparing the average brain, each, of the Hot-tentot, Negroid, Indian, Mongolian and the Aryan?

Answer: It does; as the intellect increases in proportion to the lower Will organs, the frontal lobe lengthens and the forehead develops farther in front of the ear opening.

Question: What are the lowest forms of mental acts?

Answer: The sensations of touch, taste and smell. As these increase the head grows wider near the ear opening and lower side brain.

Question: What is the next higher sense function?

Answer: The perception of quantities (masses or parts), of colors and of forms through the sense of sight.

Question: What mental function normally follows perception?

Answer: The retention of sounds and the congregation of memoried facts by specific Memory.

Question: Why say the congregation of facts instead of the correlation as is usually said?

Answer: Because correlations are mutual relations; such relations belong to a higher mental region than the retentive region, except such correlations as are incidental in time or kind. Correlations can only be known to be such by acts of reasoning.
**Question:** What important fact, directly related to vocational counseling, is it essential to keep in mind regarding the mental development of the individual?

**Answer:** The region of dominance of mental power, which naturally moves from below upward except in senility.

**Question:** Why is this fact of special importance to us as vocational students?

**Answer:** Because the dominance of mental power usually determines the dominance of vocational ability, and may change from one faculty or subfaculty to another either in the course of development or under the stress of effort or culture.

**Question:** When the region of mental dominance changes in any individual, does it move consecutively along the circuit of elaboration of ideas?

**Answer:** Not necessarily; mental dominance may change from function to a higher function, from early youth to maturity, or it may stop at any place along the line of the mental organs, or it may change from one strong faculty to another faculty that has acquired greater power, regardless of the order or of the relation of functions.

**Question:** How can this natural law of change of dominance be proved?

**Answer:** By watching the changing place of greater natural aptitudes in the individual through his childhood, youth and maturity, or through parts of this time; by noting quiescent or dormant faculties that afterward are aroused to the point of excelling faculties earlier exerted; by comparing the progress of the individual in several distinctive mental channels; by observing the changing field of mental enjoyment due not to an involuntary choice, but to the changed attractiveness in a vocation not particularly desired by earlier experience.

**Question:** How can this change often be predicated?

**Answer:** By the vocational counselor reading the fact that the present vocation arises from a secondary or tertiary faculty, and that a prime faculty has not been urged into intensive activity, that is, is still largely potential.
MERTON COURSE

VOCATIONAL COUNSELING
and
EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

BY

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"Descriptive Mentality" (1886), "How to Choose the Right Vocation,"
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LESSON NINE
The Regional Influences of Reason

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by
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Specific Location of Reason Influences:

The facial influence of Reason is in the end of the nose, the nasal septum and the alae. It is the region of the nose that is in shadow when the light falls from directly overhead. When one first begins the study of this region it looks small and as being difficult to read in its volume and contours, but a short experience will generally prove that, though the region is relatively small when compared with the rest of the face, it is unusually specific and capable of high modeling. This high modeling is partly due to the cartilage structure of the end of the nose and partly to the absence of muscular substructure.

The faculty of Reason influences the greater part of the inferior lateral cartilage of the nose and the integuments overlying it. It extends part way up the wings of the cartilage and through the whole septum. These cartilage regions are subject to distinctive curves and contours.
Like all other regions the power indicated is dependent upon the comparative size, its relative size to the whole as a part of a feature, not as a topographic unit, and, of course, upon the index of quality of the individual.

The length of the end of the nose outward from the whole base of the nose is part of its indication, since the region can grow outward along the rims of the wings and the lower edge of the bulb, but when the bridge is low and short a very large Reason must be shown by the thickness and mass of its own region. An illustration of this kind is shown in the nose of Socrates, Fig. 110, in which the bridge is scarcely more than one-third a normal length and is small forward. The same end of the nose is shown in Fig. 111, the nose of which fills its angle of thirty degrees. Reason in this nose is relatively no larger than in the nose of Socrates, and not its dominant, since the bridge of the nose has great power. The cheek bone (malar) is also large and so is part of the jaw bone.

This emphasizes the rule that every sign must be read at its own value independent of its immediate surroundings, since these adjoining signs have their own quantity messages to indicate and are under the natural
obligation to blend with each other, to avoid arbitrary margins or contours.

We have already studied the regions of Attention and know that its index of observation is shown by the length of the nose forward. Suppose that observation is below medium in size: the result would be that the end of the nose at the sign of observation would stand out from the base of the nose only a very medium distance, and large Reason could not extend beyond the lower end of observation or scrutiny. The large Reason sign must then be shown by a broad region at the outer end or by a low hanging septum, often wider than in a far forward extending nose.

A little experience in judging these sizes will clear up any confusion arising from the variation in the signs of the other faculties. In the early study of these signs one mode of locating the regions of Reason is to place the person being read directly under a light, so that the shadow falls upon the nose from above. The regions of the nose that are then in shadow are closely the regions of Reason.

Subfaculties of Reason:

The main processes of Reason activity may be classed as synthesis—to gather together—a universal fact of amassing; as analysis—to dissever—a universal fact of separation and setting apart;
and as judgment—to stop transforming by a verdict—a universal fact of residue or of change of relation.

These actions of Reason indicate its enormous possibilities in the selection of nerve reports from the other faculties and in the elaboration of these reports into a new idea. The new idea will necessarily be a modified composite of the original mental energies of which it is composed. It will not necessarily be simply a blending of the older ideas from which it is seemingly formed. Many other factors enter into the new idea.

The new idea must depend upon the information of facts, of quantity, and of order received from the other faculties, especially upon the energies received from the faculties of the senses. Before the energy reports and the energy memories of the sense faculties reach the faculty of Reason, those reports and memories have themselves been selected, routed, changed, and modified by their course through the faculties already studied. They have thus been made fit for particular reflective purposes, fit for Reason to act upon or with them in the new idea relations.

The Region and Action of Synthesis:

The amassing and gathering process of reasoning, the induction of information into the problems of thinking, is shown under the end of the nose, just below the observation of Attention. In some respects the two abilities are alike: observation also gathers facts or the notices of change and differences going on around us. But it does not change these facts or the nervous information given us, as does synthesis. The inducing of information into the scope of thinking, this synthetic going from the particular to the general, leads to change and to reformations. Metaphysics usually has reversed the truth of mental processes; it has most frequently misnamed what actually takes place and requires a contrary definition to
explain its terms; just as the term “evolution” is a dubious explanation for primary involution, so the processes of synthesis begin with induction and the involution of information, with the gathering of information from the senses or from other people’s knowledge. The reformations and transformations of this information made by the senses and the faculties of the senses may need to be further greatly changed, may need for our own thinking to be taken apart, or their causes reviewed as separated actions or things.

This being true, and the faculty of Reason having the power to do this by natural laws, we have the counterpart of this synthesis ability in the fact of analysis.

The region of synthesis is read in proportion to its power in the individual, and is shown by the breadth and depth of the outer third of the lower end of the nose, as shown in Fig. 114.

When the end of the nose is upturned and short, childlike, or aboriginal-like, it denotes small reasoning by any method, and is often more synthetic than analytic even in this kind of a sign. This may be dormant or quiescent, and shown to be so by a fuller forehead sign. But it is read, as a present indication, in the nose as relatively small.

Often when the bridge is high and powerful, in order to carry its own signs, and in order to keep down the sign of Reason, the end of the nose is narrow, thin, and badly carved or modeled. The sign
is then read as relatively small, especially the synthesis. Small synthesis, as is the case with all other small faculties, is a sign of deficiency in those qualities and powers indicated by large signs. These powers will be described later in this study.

The Region and Action of Analysis:

The ability to carry on the dissolution and separation and the setting out of functions performed by actions and things, is shown in most of the backward two-thirds of the septum of the nose. The analysis dissolution of ideas, of actions, of the functions performed by some power or substance, has the power of distinguishing ratios, or the proportions of these to each other.

We may say that analysis dissevers problems containing more than one idea, or the nature of objects containing more than one substance or performing more than one function. In this we see at once the relation of analysis to higher mathematics and to chemistry, to complex problems in vocations. It is the subfaculty that deals chiefy with the discovery of the causes of phenomena.

When the septum is short downward, when it can hardly be seen from the side, when the other signs of Reason, synthesis and spontaneous judgment are larger, so that the rims of the alae cover the septum of the nose, we must rate analysis as small. In such mentalities prolonged reasoning
over a problem tires very much sooner than an equal amount of other kinds of thinking.

When analysis and synthesis are quite evenly balanced, the mentality can carry on one process as readily as the other, can change from one to the other when the subject matter demands the change. In this ratio the conclusion is generally drawn with regard for the time to be given to the problem or to the difficulties met with in the resolution into judgment.

The Region and Action of Judgment:

This subfaculty is located in the margin of the alae of the nose and in the lower back region of the septum. Its size is determined by the thickness of the rim of the alae, not by their outward width apart, and by the fullness and hang of the attachment of the septum to the upper lip and the extension downward of the internal segment of the inferior lateral cartilage of the nose (see Fig. 109). We must remember that another faculty has possession of the upper substance of the alae, and if it is different in size from the regions under consideration the width and contours of the wings must respond to that fact.

Judgment is that part of Reason that compels cessation of transformation or consideration of information in order that some form of deduction or conclusion can be made a fact in the mentality. The gathering process of Reason could go on, the dissection and rating could go on—both interminably—without judgment, were it not the function of some part of the faculty to demand a result. Reason, when dominant, is plenary.

Tentative Analysis of Reason:

We have already defined briefly the subfaculties of Reason, and in this something of the processes of that faculty in its operations. It is necessary to understand more about the nature of what must take place in the faculty in its modes of reasoning if we are to think clearly about the vocations that arise from the different faculties. The student of this course is seeking a profession; he must master certain essentials to the practice of that profession, just as certainly as a man must master some technical elements of any other profession. If one has not the persistence and desire to get down to real thinking and reasoning out the commonly needed solutions to
the problems of his vocation, he had better turn his attention to vocations that do not require effort.

Our first problem in the analysis of Reason is the fact that thinking is a process of changing mental energies in our own mentality, changing them so much that they represent new ideas; that is, new kinds of mental energy. Every mental faculty must make changes in the energies that pass through its region of the brain. Some of these changes are made without much effort, as when we casually observe or remember the actions taking place around us, or as when we are simply expressing common or casual opinions. The same faculties are active in these kinds of thinking whenever we do intensive work, whenever we are making a mental struggle to do something unusual.

But this last is greatly different in its effects as mental products and in its creative power. The common man may think over again and again the common facts and ideas he has been taught or has learned from common experience or concerning the problems of his work brought about by new conditions or new tasks. Thus he may think just as many hours as one who struggles intensely on a matter at hand; but the result will be characteristic of his information and of the capabilities of his faculties through which the energies are passing.

The vocational counselor must not suppose that one man can think as complexly as another one may, if he wants to. Both the processes of thinking and the kinds of information may be very different. The quality of the two men may be so unequal as to make great differences in their reasoning over the same facts and general information. This is the reason why men often reach their maximum far below what is expected of them and cannot go beyond it in spite of every effort they can make or of every opportunity given them.

The resident energies, the powers in the faculties themselves, cannot release or supply the kinds or amounts of additional forces required to make the new ideas or new desires or purposes that are needed. The mental powder is not strong enough or free enough from refuse to meet the conditions. To urge a man to move far beyond his natural abilities is simply to urge him into defeat and exhaustion. This is extremely important in all vocational advice and selection, not only with regard to Reason vocations but with all others. The matter is taken up here, because so many of the Reason and Construc-
tion vocations are technical and professional vocations subject to the heavy preparation of collegiate graduation and state certificates.

We must, then, go back to the relations of the sense and retentive faculties to the faculty of Reason. In these faculties of the senses and of the retentives, Reason can find the reports of the outside world upon which it can act; these reports come to Reason as pieces of information. From the region of Form, Color and Number come those accumulated through Attention or directly from the original faculties. These are facts of a great many kinds, some clear and useful, some dimly reported, some useless. Other facts come from specific Memory; these may be from the same sources or the special data and memoranda of important things thought, acted or otherwise remembered in the past.

We are to remember in our counseling that the faculties below Reason that supply Reason with facts as noted above do not discover laws or functions or systems of actions. It is part of the work of Reason to discover these, to find out laws, to predict what will happen and to discover how complex or involved methods are carried on. The quality and the importance of the reflective faculties—Inspiration, with its foresight, Reason, with its various methods, Construction, with that faculty's activities—depend upon their own clearness and completeness, and upon the kinds of information they receive. If the reports furnished by the other faculties are trivial, commonplace, or dubious, then these faculties of Inspiration, Reason and Construction, as well as those beyond, are at a disadvantage.

If Reason's own processes are transitory, hasty, negligent of its own sense of facts, if its own power to command the others is not constructive, then its products and judgments are apt to be of a low quality. If one's early reasoning is ill conceived, its earlier judgments poor, its later conclusions are very certain to be depreciated in proportion.

In counseling, our attention must be directed to the fact that the higher faculties must depend upon the lower faculties and upon the quality.

When the reports are fundamental facts, when Reason can depend upon the variety and order of information furnished it on the subject under consideration, then there is prospect of good judgments.
The Synthesis of Reason:

We have treated the specific location of the subfaculty *synthesis*, in part a definition of that form of *Reason*, and something of its relations. But the faculty of *Reason* holds such a profound place in the work of the vocational counselor and employment manager, in fact, in the whole scientific and constructive world, that it must be understood in its operations as far as our limited treatment can carry us, and as far as the reasoning of the student can carry him. This whole profession is a profession of particulars and not of generalities; generalities—gaudy, contradictory, or otherwise—have condemned or vitiated every other system or method of mental analysis with which we are familiar.

One reason for calling attention to these facts here is that *synthesis* is supposed to be a generalizing method of reasoning. It is more so than *analysis*, but we must not be careless of this fact in our work. When a man is extremely synthetic, this dominance leads to over-quick judgments if analytical methods are necessary; it is apt to lead to general conclusions; it avoids specification in favor of mass information judgments. In those professions and industries where frequent or rapid or tentative judgments must be made, *synthesis* should be the dominant mode of expression. Where general executive functions are to be carried on, *synthesis* should lead in a moderate amount. Where there is general management without particular and specialized modes to be carried on, *synthesis* is preferable. One can continue the illustration to a vast number of specific instances. Instead of doing this, we prefer a further statement of the vocational nature of synthetic mental action, which the student can apply as conditions arise.
Natural Tendency of Sense Organs Is Synthetic:

In earlier studies it has been shown that the faculties of the Senses and of Retention are largely accumulative, congegating, or gathering faculties. This makes them sympathetic with the synthetic action of Reason. It was shown that these faculties exercise little choice of what they receive of their own kinds, that the whole natural tendency of the sense organs is to be synthetic to their kinds of information; that is, for Form to see all forms, Color to see all colors within sight; for the senses of taste and smell and hearing to sense their kinds of energy without power to select in advance the particular kinds desired, without working out the causes of their own kind of phenomena.

When these sense energies, gathered in general by their faculties, are presented to Reason for reasoning purposes, their faculties force upon Reason a mass, or a synthesis, of reports. Reason is thus often compelled to take a synthetic recognition of classes of actions, the first view, as it were, of "the particular" mixed with the mass. Inductive reason must start with the particular and end in the universal.

The Origin of Inductive Reasoning:

When reports that belong to a class are few, Reason must necessarily be inductive. Reason must then work synthetically, must work "from the particular to the general." It must say, "Here is one of this kind; there must be others like it."

Analogy, Earliest Process of Synthesis:

One must be careful not to confuse the cultivated synthetic Reason with analogy, because analogy is a much simpler process of synthetic reasoning, since it is the ability to realize likeness in some series of attributes or actions, something of results that may be derived from other organs or objects than those from which the noted analogy may come. In fact, analogy is not a very high nor a very certain way of reasoning. Even the processes of homology are higher forms and vastly more explanatory of synthetic actions in things.

Homology, Developed Process of Synthesis:

Homology is the mental ability to realize in the structure or function of an organ or part the likeness to the structure or function of another organ or part.
The Analysis of Reason:

Analysis is ordinarily thought of as the ability to see particular facts or objects and think of them as general parts of a whole problem or of a series of things; as the ability to scrutinize and note these parts; or as being the ability to work at or over the details of an operation or set of plans. In its general application analysis is the process of giving exact attentive consideration to the elements of a problem, substance, process or method. But analysis is, in its higher forms, more complex or at least somewhat different from the common thought concerning it. Take as a physical illustration, Avogadro's rule or hypothesis of Gases, that under the same conditions of temperatures and pressure equal volumes of all gases contain the same number of smallest particles whether single, compound, like or complex bodies.

In this instance, there must be considered as separate problems tied up in an inseparable or concrete state or proposition, the mass of the gas measured by apparent, absolute or specific gravity—in air, in vacuuo or in another medium,—the absolute space occupied by the gas, measured by a predetermined unit of volume, the temperature or thermal degrees of the gas, of its container, of its surroundings, the specific heat capacity of the gas, measured in thermal units, the question of conductivity of electricity or of magnetism. Many other factors need to be considered: the presence of the gas, its characteristic, as monad, dyad or tryad, etc., its chemical group, its nascency and other qualities or properties.

Analysis works to discover or to uncover the relations of things or of the parts of things; it fathoms the qualities in things or in men that "get things done"; it defines characteristics and habits and modes of work; it is the organ that aids in answering Why? How? and When? as it is the assistant to the massing side (synthesis, to come together, to gather) of reasoning.

One can say of analysis that its main operations are to discover, by comparisons of actions, the phenomena of things and the functions that objects perform.

It follows, then, that where complex thinking must be carried on, where there are equations to be solved (not simply counted up), where laws are to be traced or worked out, the task is one for analysis. The subfaculty of analysis should then be the dominant action of Reason.
The analysis of Reason is always comparatively anxious or active about details, carefulness of relations, the discovery of causes, and the distinctions of variations. Naturally this process takes more time than does the synthetic process. It inclines one who is dominantly analytical to wait as long as conditions will admit before "drawing a conclusion."

Analysis Tends Toward Delay:

Extreme analysis generally delays the formation of a final judgment as long as it is possible to do so; sometimes it leads to a constant habit of partial opinion. It searches for specification, specialization and counteractions until its judgments are themselves pluralities.

For these reasons one with highly dominant analytical Reason should be cautioned against unnecessary delay, and particularly against delay when the facts at hand warrant a judgment.

Analysis in Executive Action:

In the case of the executive, and where considerable analysis is necessary, deferred judgment should be watched carefully, as, unless it is carried under anticipated definite facts, it is often fatal to success. The habit of deferred judgments can be overcome to some extent, when one knows he is excessively analytical, by adopting the counter-habit of drawing complete conclusions at the first moment a group of evidences will admit, returning no more to these but to the judgment drawn, even with the mental reservation in favor of a change of opinion on presentation of new facts, or on a marked change in view concerning facts and evidences one already knows and from which the earlier opinion was drawn.

These facts of analysis and of rejudgments properly lead us into the consideration of the nature of what is called deductive reasoning.

Origin of Deductive Reasoning:

We have stated that reasoning is dependent upon reports from the other faculties concerning objects and their actions or concerning the actions of the other faculties themselves.

When Reason receives many reports that belong to a class, it can reason deductively; that is, it can work from the gen-
eral to the particular. Reason can then conclude, "Here are many of a class. This new report is a somewhat-like-the-class report and may be more like the class, more different from other classes than thus far appears. Let it be so rated, as a part of this class, until it is shown to be more like something else." It is a deduction from knowledge of other classes of things or actions to be able to assert that this is unlike other classes and is like its class; that it is better than, or not as good as, others of its own class; that it is distinctive in any particular.

**Analysis and Deductive Reasoning:**

To prove that the somewhat-like-the-class report belongs or does not belong to a given class—should or should not be done, is or is not great—Reason must be disturbed by differences in reports subsequent to those that established the class—the criterion of comparison. It must dissever the like from the unlike reports—the like nerve cell energies from the unlike nerve cell energies.

Such distinguishing is analysis, or the dissolution of energy reports, the solution of relations where greater differences in one case show greater likenesses in the other case.

**Steps Toward Judgment:**

These are all steps toward judgment; they are processes carried on in every mentality day after day; they are answers to Which? Why? When? Where?

If some of the parts seem segregated, or the ideas are segregated (analyzed), and some parts or functions are small and others large, if some are old reports and others are new, if some are opposed to each other and others agree, these conditions establish ratios of variations.

When Reason receives similar reports or information from a variety of sources, and the likeness is realized, the result is correlation, and the effect is to establish problems of homology, likeness of action from likeness of things. When one has arrived at a series of judgments because of a series of similar conditions and actions, one predicates a similar result when the conditions are again repeated.

**Sequences and Laws:**

Thus we are mentally carried to the relations of Reason in which a knowledge of facts, of principles and methods
Reason 273

can reveal to us the facts of sequences and the discovery of laws. Thus when we realize the reports that come to us from the world around, then harmonize these reports or place them in opposition, measure and count their powers and numbers, or make them take the place of one another, and so note these and their successions, the result is the recognition of functions.

In this way we can answer the questions, What can it do? How does it do it? What will a certain condition result in?

Reason, by synthesis, by analysis, by the formation of judgment, enables us to predict things that are going to happen, to predicate the future of orderly matters, to recognize the causes of future changes.

When these various separating, modifying, mingling and recasting energies have composed new energies or new relations and changes in substances, the product is a residuum of potential structures—is a transformation that is judgment.

Transformation, Not Reaction:

It is clear that the action of Reason or of any other mental process is a vastly different matter than the simple formula of "reaction to external stimuli," a formula that is a convenient but abortive description of any activity in the universe—not to specialize on mentality—inasmuch as the objects of the universe have been subject to reactions for considerable time and the origin of energy is quite unknown.

The fact that organic substances have biological memory, memory that modifies and clearly changes every new action that impinges upon those substances, whether those substances are mental or physical, makes the results of "reactions to external stimuli" as uncertain and variable as are the possible differences in abilities in the whole nature of the organism into which the stimuli are sent. The origins of the stimuli are separated from the expressed reaction by the whole nature and experience of the organism receiving the stimuli. The idea, or doctrine, of "reaction to external stimuli" is useless as an explanation of problems in mentality.

Animal Mentality Unexplained by Psychology:

It has been shown that the animals have little ability in reasoning; that they are limited to the activity of the lower three-fifths of mentality, and that these lower regions of mentality are directly necessary and sufficient to their compara-
tively complex life. The animals are said to live a simple life, nevertheless they have complex activity in the use of those lower mental organs—in fact, apparently too complex for explanation by present-day psychology.

**Limitation of Animal Mentality:**

We see that these mental processes are not simple, even in the simpler vocations. They must be recognized for their own comparative values in every degree of accomplishment. As the vocations rise in complexity the quality of the man who is to master the vocation must rise in proportion, the dominance of the abilities required for that mastery must be more and keenly right. The animal kingdom has existed for many thousands of years, living under the same laws of nature that man has lived under and sensible to the same forces, but it has never become nervous enough to reason, to predicate its needs as man has, or to comprehend the relations of its elements to itself. Some obvious constructions, some imitations of one another’s actions, some few congregations of memories that in result verge on the processes of reflection—these encompass the mental heights of animal mentality.

**The Strictly Human Two-Fifths of Mentality:**

It is through the mental processes of organs above the lower three-fifths of mentality that information received through the organs of the senses is transformed into opinions, propositions, and judgments of modes and methods of satisfying the desires of mentality, or is transformed into directive currents of energy controlling the executive purposes of the whole. The reflective faculties, blending their own energies with the simpler energies which are conserved by the organs of sense, recast, regather, and select from the fragments of world reports, and finally form ideals, visions, discoveries, and living impulses.

The mustard seed carries in its organism the potential memory of its ancestry. The Reason nerve cell carries in its organism the potential memory—its transformation homologies—of abilities to change sense memories into directive energies; carries as organic habits the ability to blend the many currents of force into new motions as controllers of other cells beyond. One will search in vain for a resemblance between “reactions to external stimuli” and those processes of
reasoning that are required in the conceptions of the functions of the infinitesimal calculus, or required in the reduction to terms of consciousness of the facts of the radius vector of the planets, or of the analysis of polarities of the organic ellipse, or the problems of physics of radio-telegraphy.

The Judgment of Reason:

The intention of every reflective act is to form a judgment, to reach a conclusion concerning the matters under reflective consideration. The action of synthesis is one method or mode of thinking to the end that a judgment may be made; the action of analysis is another mode or mental process to the same end.

By these actions of the mentality a correlation is brought about by the congregation or the elimination of acts desired or not desired as part of the judgment being rendered.

We may say that a judgment is a formulated intention, or a determination in knowledge as a known fact, or a disposition to claim a penalty.

The result of these operations of Reason is the transformation of various kinds of information into a resident condition, a condition of rest, as resolution, forecast, prediction, purpose, intention, or conclusion.

Whichever the dominant mode of reasoning or whatever the result desired, the amount of effort and the time given are within control of the mentality, its habits and desires, the estimated importance of the subject-matter, the difficulties adjudged to be mastered, and the benefits to be derived from the settlement of the problem.

But the laws of mentality have established the fact that when these activities are prolonged or intensive, the region of judgment is influenced in a corresponding degree; when these activities are superficial, generalized and lacking in prolonged intensity, the region of spontaneous judgment is influenced proportionately.

These laws also establish the fact that when synthesis is large and analysis small, the trend of the mentality is toward spontaneous judgment, and when the reverse is true of the power of these specifics, judgment is the larger region.

When Reason arrives at a conclusion by simply a choice of fragments of information and without operations that result in changes of consequence, the conclusion is, from its very method, a temporarily moulded or a highly ephemeral
THREE EMINENTLY SUCCESSFUL LAWYERS

Organic

Amity

Reform

Sociability

Fame

Hope

Dignity

Stability

Industry

Liberty

Economy

Defence

Destruction

FIG. 117 B
Reason

judgment. Since many of these may be required in times too brief to be subject to elaboration, this action of Reason is indicated by the region of spontaneous judgment.

We found the region of spontaneous judgment located in the lower rims of the alae of the nose, the size of this phase of the subfaculty being measured by the relative thickness of the rim.

Spontaneous judgment is that form of judgment usually termed snap judgment, or immediate opinion, and differs much from the conclusion reached after reflective consideration or that is the settled residue of working over a problem or series of facts. These two general forms of judgment indicate the degrees of reasoning effort usually carried on by the individual and the probable thoroughness with which a conclusion will be reached.

Spontaneous judgment is a commonly large phase of the subfaculty, and the mode in which many people exercise reasoning, for it is still reasoning to make snap judgments, to make judgments from the general mass of one's opinions without special effort, from general information and at the moment. Thus this mental process of reasoning may be called immediate opinion, as in the dialogue, in the unexpected conference, or in emergency.

Judging Reason Signs:

In face a, Fig. 118, the faculty of Reason is the dominant, but it is only slightly more intense than the faculty of Attention. The latter faculty seemingly has the ability to carry on mental-visioning without "closing its eyes" to what is taking place in its immediate surroundings.

The subfaculties of Reason in this face are almost equally balanced. Primary synthesis is the strongest; analysis is second in power; and final synthesis, or judgment, is nearly equal to it. This last is either uncommonly quick or, under the influence of the conservative faculties, goes to the other extreme of being much deferred.

An Index of Strategy:

The near balance of the subfaculties gives Reason a broad, unrestricted activity, synthetic and schematic in its view, ready for broad strategy and comprehensive plans. This
faculty has analysis enough to demand accuracy and fullness of knowledge in massed quantities, but it shuns or is indifferent to extensive detail in reaching conclusions. The tendency to mental-visioning is influenced by the presence of only moderate Construction, which reduces imagination and aptitude at mechanical technique and throws the burden of visualizing upon Form and Attention. It should be borne in mind that the faculties of Form and Attention visualize actual objects and familiar things, but do not construct things or objective problems out of fragmentary materials as Construction does.

The end of this nose has the cast of self-dependence, of hearing much, of seeing much, of thinking much, and of denying intense response to minor matters. The relatively low faculty of Construction modifies the structural elements of the mentality, compelling a
Reason

reflective rather than a mechanical strategy, one more offensive than defensive. **Reason** is influenced by the predominance of these more static accomplishments toward a conservative and tried-out policy.

This is the face of an organizer of men and of their mobile activities; it is not the face of a politician or of an engineer.

An Index of Sagacity:

In face b, Fig. 118, the nose is long, thin, and highly modeled. The end indicates that **Reason** is uncommonly dominant, that all kinds of **Reason** are well developed. This subject's judgments are frequent and specific, although **analysis** is most fully marked; the indexes of spontaneous judgment, arising from a primary **synthesis**, are less marked. This nose indicates that this mentality never voluntarily passes judgment upon generalities nor upon outward characteristics. It shuns intuitive opinions, and consistently waits for definite evidence. It cares but little for the mechanics of politics, of statecraft, or of political philosophy.

**Reason** has powerful supports in **Attention**, **Memory**, and **Language**. These faculties have near at hand the formulas, the evidences, and the conclusions that **Reason** desires to use or to apply. This nose is an index of cold, calm reflection that cannot be hurried, that is not easily astonished, and that is hardly ever surprised.

The face is that of a statesman who looks into the future as a playground of mighty forces that are everywhere modulated by the equations of human ethics. No other diplomat or secretary of state has ever handled questions that in number, magnitude and complexity equaled those handled by this mentality.

Harmonic Line of Power:

In face c, Fig. 118, the nose differs much from that of face a and face b on the same chart. **Reason** is here barely dominant, **Construction** being its nominal equal. This nose has a broad, heavy, though modeled, end. **Attention** and **Inspiration** are almost equal to **Reason** and **Construction**. The **mental-focus** is quite marked in the upper end of **Attention**. The **foresight** element of **Inspiration**, which curves around the end of the nose and there blends with the **imagination** element.
of Construction, keeps up the fullness of the region from Attention to Construction.

Although strongly supported by these neighborly faculties the region of Reason has a fairly low septum. The broadness of this septum at the fore end indicates a mass-synthetic ability that is quick in judgment when pushed to a conclusion. The septum retreats quite low and broad toward the face. This gives the mentality good analysis in larger problems, and it also indicates that extended details tire the mind. In combination with the equal synthesis of this nose, this analysis broadens judgment regarding the conditions of time and of sequent circumstances.

The line of mentality in this face is sustained in its whole length with remarkable evenness of power, which gives this subject great equability of temperament as well as a breadth of mental ability. This range of faculties, supported by high quality, carried this mentality successively through the stages of classical scholarship, Kings' Counselor, the House of Commons, Chancellor of the Exchequer, and finally to the Prime Ministership. This minister's problems and contentions have been far greater than any that Mr. Gladstone ever had to master.

On face a, Fig. 119, the regions of influence are outlined by the dotted lines. The three phases of Reason—analysis, synthesis and judgment—are about equally developed, are fairly large, but not highly dominant. The nose is long and projecting, indicating the acute observation of Attention, but not its scrutiny. The projecting brows show large perceptives, the apparently wide forehead indicates a large Language region. If the region of Form, Memory and Language are nearly as large as the outlines seem to indicate, these faculties are as large as is Reason and take away its predominance.

In face b the nose is extremely long and the middle section of the septum still longer; the analytical phase of Reason is thus greatly marked; it drops away from the outer end of the nose. In the great fullness of the end and the length of the septum it is clearly apparent that Reason is the dominant, though the whole side of the forehead outline is full. In this face b it is easy to determine the dominant, but in the absence of detail shadows the secondary and other faculty sizes cannot be determined.

In face c the end of the nose is small and Reason must be medium or less in its action. Attention and the perceptives
are transient, lacking both in intensity and in constancy of action.

In face d the nose is relatively shorter than in face c, but the end is larger, the septum stronger, and Reason, relative to the rest of the face, is larger, though hardly an average of his mentality.

In the Saskatchewan Indian, face g, the end of the nose is flat and low, Reason is elementary; it cannot follow an idea very far in the idea's ramifications. The perceptive are so dominant that even this comparatively young face has the lines of hard-looking across the sunlight.

Note the childlike noses of faces e and f.

Some Typical Vocations Where Reason Is the Dominant Ability:

Efficiency Management; General Superintendent: Efficiency management means the exercise of prophetic judgment in the choice of lines of production or of sale, in the probable "lifetime" of a class of goods, in the choice of standards of quality of goods, and in methods of gaining trade information. Effective management is quite different from Efficiency Engineering, which is the preparation of the means rather than the constant supervision of employment and of lines of productivity or of trade. Effective management includes: the economical purchase, rout-age, storage, selling and redistribution of products; the conservation of power, time and labor, the utility of employed abilities and of personnel in office and plant, the manufacture of products, the salvage of by-products and unused materials, and the adjustment of contract delivery. Mental ratios: High Executives, Reason, Construction, Number, and Attention, in that order.

Time Study Engineer: Must have a thoroughly practical engineer's education, must be a skilful mathematician and capable of handling mathematical graphic formulas for determining time elements and production results. He should be familiar with manufacturing problems and industrial processes, with the physiological and mental problems of labor, trade and executive exertion and results. He must be capable of making analytical and time studies of operations and have a sound and experienced judgment in the selection, management and direction of employees.
The Time Study Engineer should have special preparation in the fundamental requirements of his particular industry, its mechanics, products, transportation, turnover in labor and materials, and in the methods of its administration.

Analysis, synthesis, calculation, imagination, Stability, Industry, Economy, Caution and keen perceptsives. The executive line should run fairly high.

Office Manager: Should have the ability and training to supervise and manage all details of office management and routine, the various clerical functions carried on in the office of an industry, generally including a knowledge of accountancy and economic efficacy, as well as of the various duties of secretary to the firm. In many instances these duties fall under the direction of the controller.


Claims or Complaint Adjuster: He should be able to investigate and adjust in a satisfactory manner all kinds of claims and problems arising between his firm and its customers or sellers. He should have a knowledge of commercial law, of the principles of accounts, of good English forms, of the quality, uses, and values of his firm's products or materials.

Analysis, Number, Language, Stability, Economy, Defense, Amity, Sociability and Laudation.
FIG. 119A
A RECONSIDERATION OF THE REGIONAL INFLUENCES OF REASON through QUESTIONS AND ANSWERS.

Question: Where are the regional influences of Reason?
Answer: In the forehead above Memory, between Inspiration and Construction, and in the lower part of the end of the nose, in the whole length of the septum and the lower margin of the alae of the nose.

Question: What phase of Reason is indicated by the outer end of the nasal region of Reason's influence?
Answer: The outer third of the lower cartilage in the nose is the region of synthesis influence in reasoning, and is measured by the relative fullness and broadness of the end of the nose below the crest.

Question: What does this region indicate?
Answer: The degree of tendency to accumulate masses of general information and opinion upon subjects of thought and to draw conclusions concerning passing problems, or judgments more of the nature of opinions than of highly equated considerations or deeply analyzed and prolonged effort.

Question: What advice should the vocational counselor give to one who has a highly predominant synthesis?
Answer: If the vocation sought or advised requires that judgments should be made upon short notice, or upon open facts that do not need to be analyzed, the analysis may be left considerably lower than the synthesis. But if there is needed a study of conditions, laws and functions of individuals or of substances, then analysis should be raised by paying attention for a fair amount of time to the characteristics and disposition of analysis as outlined in this study.

Question: In what great class of vocations is it necessary that synthesis should be dominant or nearly dominant?
Answer: If a man is in a subexecutive vocation where there are not required technical mechanics or sciences as the foundation, but where operative judgments are rapid or based upon
generally observed conditions, then synthesis as noted above is preferable. It can be advised by the vocational counselor as noted under the description of that subfaculty in the text.

**Question:** What caution can usually be given to a client having large synthesis and relatively low analysis?

**Answer:** That the client should make a practice of clearly and sharply defining in his own thinking the facts, laws, causes, or conditions which form the basis of his conclusions; that he should avoid the tendency to generalities and indefinite statements, that he should weigh the factors of his problems with care and attempt to predicate results from particular causes rather than from general suppositions or information.

**Question:** In a moderate sized nose when the middle region of the septum (analysis) hangs only moderately low, when it can be clearly seen in the profile of the face, what does it indicate?

**Answer:** It indicates that Reason prefers to make short and general analyses of problems rather than to make analyses that require prolonged effort; it indicates a tendency toward short, choppy and negative arguments rather than toward constructive or involved contentions. It is the kind of Reason possessed by many salesmen, especially those in the non-technical industries, and where the necessity is to meet the random or stock objections of buyers.

**Question:** What counter-indication is very large analysis to the executive, subexecutive and business vocations?

**Answer:** Extreme analysis almost always delays forming a judgment as long as circumstances can be made to seem to admit such delay, and becomes so involved in opposing or involved opinions that no decision is reached or it is reached too late.

**Question:** What indication does the broad synthetic end of the nose region give when the nasal spine and bridge of the nose is short—when it does not fill the nasal angle—from the brows down to the ligamentous section, but the end itself is large?

**Answer:** It indicates frequent and fairly spontaneous judgments which are comparatively general in their nature. The value of such judgments depends much upon the quality of the individual mentality.
**Reason**

**Question:** When the nose is moderately high and long, the septum does not hang low in the middle but is broad and low at the facial end, and the nostrils have somewhat heavy rims, what are the **Reason** indications?

**Answer:** That the judgments will be fairly quick and generally based upon personal experience. This kind of judgment is frequently found in the reasoning of the journeyman mechanic and in the reasoning processes of the small plant business man, where extended analysis of conditions or of natural laws or of mathematical calculations is not necessary.

**Question:** What is the chief characteristic of sagacity?

**Answer:** Sagacity is the ability to understand from partially known facts the complex plans and intentions of other people, whether these facts relate to business, to war, or diplomacy. Sagacity can be almost wholly reflective in its nature and be carried on with little regard for haste or for active opposition; hence the executive faculties are not required to be large or intensive.

**Question:** Are there essential mental differences between sagacity and strategy?

**Answer:** The kinds of reasoning are not essentially different, but the necessary mental supporting faculties are different. In addition to the reflective powers of **Reason**, strategy requires executive and dynamic faculties powerful enough to act with spontaneity and with defensive intensity, for the factors of time and of obscurity are favorable to the adversary.

**Question:** When the septum is extremely low and thin at the end of a long nose, as in face b, Fig. 118, what is its chief indication?

**Answer:** That the faculty of **Reason** will carry out prolonged analysis of complex problems of a highly intellectual order, rather in the nature of sagacious than of philosophical thought. In the given face this index of diplomatic sagacity is much influenced by great **Integrity** and large **Defense**, the nose being lengthened by the last named faculty.

**Question:** Why do we divide judgment, the third specific of **Reason**, into two regions and two modes of action, as judgment, and spontaneous judgment?

**Answer:** We plainly know that there is a difference in modes of judgment; these are clearly made in mental actions,
and we are fortunately able to read the distinctions. In the size of the lower end of the septum of the nose is indicated the degree of the judgment resulting from the analysis and synthesis of elaborate processes of reasoning, the mental tendency constantly to draw conclusions concerning laws and functions of a complex nature. The spontaneous judgment region, located in the lower margin of the wings of the nose, by its sign indicates the flashlike or "snap" judgment necessitated by an immediate answer or in the current expression of an idea not requiring the inclusion of laws or functions of a complex nature. These two forms are described on pages 263, 275 and 277.
MERTON COURSE

VOCATIONAL COUNSELING

and

EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

BY

DR. HOLMES W. MERTON, V. C.

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LESSON TEN

Reason and the Sciences

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The Mental Origin of the Sciences:

It has been shown in the preceding lessons that the sciences and all great reflective accomplishments fall under the faculty of Reason. The natural necessity for this is evident from the fact that in order to do the mental acts which create the sciences, the mentality requires that there should have been all the preparatory work that we have found is carried on by those faculties which precede Reason in the circuit of ideas, namely: the work of the Sensations; the work of the Perceptions; the work of the Retentions and of the faculty of Inspiration; and that there should then be applied to the information received by all of the preceding faculties the elaborative processes of Reason.

A Summary Definition of Science:

A commonly accepted phrase regarding the facts of science (a phrase which was mutually agreed upon in the early seventies of the past century by Edward L. Youmans, Thomas Henry Huxley, and the writer's father) is that "Science measures, counts, and predicts." This statement is true as far as it goes. It should have been extended by the declaration, "Science measures, elaborates, and predicts." Science measuring and
counting is one factor, not two; it could not measure and not count, nor could it count and not measure. As a matter of mental fact, measuring and counting are not possible to the faculty of Reason; the senses are the true measurers and counters.

Specifically, Reason synthesizes, analyzes, and renders judgments; in other words, it segregates actions, it relates facts, it predicts effects and then harmonizes the several effects into judgments, or composites of energy differences.

Science Groupings:

Because of their neighborly location in the same function, the same condition of interdependence between the faculties of Reason and Construction exists, as is found in the interrelations of the sciences and of the difficult forms of mechanics.

The sciences, in sympathy with the great natural divisions of things into inorganic, organic and mental classes, naturally divide into similar groups.

Out of the knowledge of the inorganic world rationally grow the great branches of physics and physical philosophy. Under physics can be classed Cosmology, Dynamics and Physical Chemistry.

Out of the knowledge of the organic world rationally grow the great branches of animal and plant biology. Under biology can be classed Botany, Zoology and, perhaps, the Physiology of man as a somewhat separate class from Zoology.

Out of the knowledge of the mental life of man rationally grow the great branches of Mentalogy. These include the sciences that treat of the intellectual, social and industrial life of man and of their relation to the other branches of human knowledge.

All the sciences of Things and of their Motions can be classified under these various groups.

When one thinks of the interwoven relations of the sciences, of their enormous complexity, of their required masses of exact knowledge which necessitates their being subdivided into many branches of the organic, inorganic, and mechanical world, it is easy to understand that the faculties out of which such knowledge grows must themselves be complex in functions and in interrelations.
Increasing Scientific Vocational Fields:

The commercial and mechanical worlds are fast realizing the advantage of technical knowledge of the living world (which includes all branches of plant and animal life), not only in medicine and in floriculture, but also in the growing of grains, vegetables, forests, and orchards. The fields must be revitalized; the denuded hills reforested; garden plants improved; and the orchards protected, revived, and replaced. By science the fossil remains of ancient forests and ocean beds become the sources of vitality and of heat; by science the fossil remains of animal life are recalled to benefit the living races of man. Everywhere the man of science, the man possessed of expert knowledge, is being called to render service in the organic world.

Analytic and synthetic chemistry are spreading their mental web over the advance of every art and industry; forever the new is added to the old.

In chemistry there will soon be needed a hundred technicians, or specialists, where one now carries on the effort to save labor for the non-technical man. Soon there will be needed—in fact, there are now needed—hundreds of botanical experts where there is now an occasional one who, usually in a handicapped manner, teaches some phases of his science, or preaches some form of agricultural efficiency in a local neighborhood when on a flying visit or inspection tour to some of the three thousand or so agricultural counties.

Even now the great plantations of the West, North, and South are remuneratively enticing the naturalist teachers away from the agricultural colleges and experiment stations faster than either teachers or students can be replaced.

We are just beginning to realize that inefficiency in the creation of gross products is as great a direct loss and more of a cumulative loss than is inefficiency in the transformation and transportation of those products.

Shift of the Intensive Problem:

The intensive efficiency problems to-day focus most closely around the enginery of the great manufacturing and transportation plants. In these plants the problem of the visible loss is the chief interest, because it is so large in each single aggregate. But there are already indications that soon the intensive problem will more keenly shift to the human ele-
ment. When it does, the present mental and physical loss will become just as amenable to adjustment, even though the problem's units are multiplied in number, as are the losses of the enginery of manufacturing or of commerce. The stress in these industries that formerly rested solely at the top is now being distributed throughout the whole structure.

This distribution of the weight of effective action rests partly in the voluntary interest of the employee and the executive forces, and partly in the selection of the right mental aptitude for the position held. This demands an analysis of the mentality of the individual and an equally acute analysis of the vocation.

Problem of Job Analysis:

Fig. 121 is included in this description of the mental graphic line of the Certified Public Accountant in order to illustrate parts of the Merton Method of determining the mental faculties required in a vocation by the comparisons of their ratios or order of dominance. This comparison brought out the specifics required for successful Certified Public Accountancy. The duties and powers exercised by the accountant were analyzed, as briefly shown in this illustration, in their relations to the predominance of the faculties and their specific subfaculties.

The analysis of Reason stood first, because only analytical reasoning processes could solve the problems clustering around the subjects indicated by the small letter words, as illustrated by questions of classifications, dissolutions, reserves, senility, authority, partnerships, corporations, controls of office, functions and processes; other problems, such as elections, percentages of ownership and profits, must be adjusted to each other as agreed. The logical column place of accounting of capital, credits, debts, good will, futurities, titles, deeds, liens, trusts and other considerations, must be made.

Following analysis as the chief mode of expression of Reason in accountancy, came calculation of Number, which must be so large naturally that practically absolute arithmetic is insured, it being quite impossible professionally to make re-additions and other calculations. Number is undoubtedly the simplest faculty operation of any mental organ; but it can be made extremely tiresome by rapidity and intensity of action, by the burden of memory of extensive quantities and quantity tables, by the recollection of various preceding dates, number
items, successions of numbers, recurrences, transits and expedients.

Following **Number** in importance came **object-form** and **individuality**, where the immediate and rapid identification of column, number, sign, ruling and place forms must be made, and their assistance given to both **Reason** and **Number** as supporting abilities.

The fourth place was found, by both analysis of acts and comparisons of faces, to fall to **Construction**, when there were problems of change or new methods were needed. These actions are seen in the page analysis.

The executive powers were found to be necessary to a marked extent, when there were disputes concerning findings, doubts as to preferred practice and legal determinations, contests in management, divisions of ownership and settlement of fact in estates and trusts, questions of integrity in uses of funds, or depreciations due to negligence. There are other phases where the faculties as numbered are required in the personality of the accountant as in many other vocations.

This brief survey illustrates this part of determining the mental dominance of faculty and subfaculty order in the various vocations. The results were then compared with the topographic lines of the faces of successful and unsuccessful individuals in these vocations. The principal factors of dominants and supporting faculties are to be found in "How to Choose the Right Vocation," and although the analyses there given were designed for non-professional readers and non-professional self-analysis, their ratings are valuable and were intended as a supplement to this contemplated work.

Face a, the dot-line analysis of Fig. 122, is that of a successful Certified Public Accountant. We see that **analysis** is the dominant, with **synthesis** very close, followed by **calculation** and **quantity** as essentials, with **object-form** and **individuality** as supports to the dominant. **Imagination** and **skillfulness** follow closely on the essentials; **Stability** comes next, with its **firmness** and **perseverence** so much needed in standing up for conclusions and judgments based on the facts and good practice. Next to **Stability** the faculty of **Integrity** ranks high enough, with its subfaculties. The **secrecy** of **Caution** should follow, with the noted subfaculties of **Industry**, **Defense** and **Economy**.

The Certified Public Accountant is a professional man, not always an executive, but when employed often holds a dominating position where questions of methods, propriety or ad-
judication are raised over problems of accounting, or of financial facts in many cases in law. Many certified public accountants do not have high executive faculties nor exercise much management, even in the form of controllership.

Face b, of Fig. 122, is that of an executive in a furniture manufacturing company. In this face synthesis, firmness, love of power, the subfaculties of Industry and Defense, and the subfaculty propriety are the dominating elements.

In the Intellect, supporting synthesis, are judgment and imagination, observation, mental-focus, fact and system (of Memory), and vocabulary.

The face is so evenly balanced that the mental graphic line varies hardly thirty per cent. from its maximum. The fairly even mental graphic line of the accountant varies over fifty per cent. upon the same scale. These are ratios, but they do not compare the two faces in matters of quality.

The Search for Vocational Happiness:

Today it is being realized that everywhere between a philosophy of propriety (ownership) and of intellectual philosophy there must lie broad vocations of sciences: sciences whose right hands are mechanics, structural technics, and accountancy, and whose left hands are vocational esthetics, aspirations, and problems of equitable, economic life.

Science, which is a composite name for organized, measured, and interrelated intelligence concerning things, is already lending a hand to the concrete, though often erratic, course of business; business which has no choice except to continue under the pressure of human necessity. At the other extremity of human endeavor—the search for happiness in one's work as opposed to driving necessity—science is beginning to measure human life and to seek reasonable modes of organized procedure for the attainment of the successful and effective expression of human aspirations and of social equities.

Reason and the Science of Mathematics:

The distinction between the products of the faculty of Number, and the relations of the faculty of Reason to the mathematical sciences must be clearly understood by the vocational counselor.

The quantities and the ratios of substances, distances, forms, values, power, and time, if estimated by arithmetical
processes, require calculations of great difficulty; but if solved by mathematical processes they are comparatively easy. This seems strange, too, in that mathematics deals with the mere symbols of numbers, of quantity and of direction, which must themselves be lifted from their natural regions of the symbolic arts to the regions of the sciences.

The conception of mathematical operations on a set of objects is necessarily one of the most complex kinds of reasoning, inasmuch as it requires that the mentality attribute to symbols those functions, quantities, and relations which are not commonly indicated by the symbol and which do not belong to the particular things of which accounts are taken.

These considerations may seem a long way from "the science of discrete and continuous magnitude" described by arithmetic, algebra, geometry, and calculus; but without quantities and quantity relations logical deductions are seldom possible. It may be said, then, that mathematics arises from the faculty of Reason because it is the science that is concerned with the logical relations of whole quantity symbols or premises to known partial quantity symbols or premises.

That higher mathematics is reflective is shown by the fact that, with few exceptions, the greatest calculating prodigies of the world have not been able to carry on the processes of Reflection necessary to reach mathematical equations of the second or third degree, or to understand complex functions and relations.

In Fig. 123 we see the faces of three great mathematicians and physicists.

Reason's Vocations Mostly Professional:

The broad fields of the productive natural sciences today stretch out before the vocational counselor, rich in opportunities, much as did the mechanical fields forty or more years ago or the electrical fields twenty-five years ago.

The restrictive difficulty for those who have the right equation of abilities for vocations that grow directly out of Reason is the fact that the greater number of these vocations are professions, that few of the Reason vocations are subject to apprenticeships or have simple steps of approach. Nearly all of the Reason vocations require, on the part of the one who follows them, an extensive time and money expenditure before, and sometimes after, reaching professional proficiency.
The tables of Reason vocations quite fully illustrate these facts, though Reason either through its high analysis or high synthesis and sometimes through high spontaneous judgment, is a powerful faculty in many of the other faculty vocations. This is particularly true of those vocations where higher mathematics and physics are important.

Face a, Fig. 125, has a dominant balanced Reason, well supported by the middle forehead ranges of faculties, Form, Attention, Memory, intuition, Amity and Reform; the long mandible has much of the stable faculties of the Will, particularly Stability (perseverance) and intensity in mental action. One often finds these faculty ratios in the faces of directing educators who are interested in the education of youth primarily and through this interest and the presence of love of power and the Aspirations, move rapidly into principalships and the personal direction of the educational world.

Face b is that of a romantic and idealist physician, the "Hero of Labrador." Reason is almost evenly balanced in its subfaculties, though not highly predominant. Intuition stands second and Color stands strongly third. Observation, Memory of fact and time, the Aspirations and Culture faculties, Integrity and freedom are all large and evenly balanced.

Face c is that of a zoologist and traveler. The synthesis holds its level with analysis, but these are held even by the elements of Construction (which will be
treated in a future study). The whole Intellect is very broadly developed; hardly a preference can be made as to vocational choice. This face illustrates a fact of much importance to the vocational counselor and the reason will be given here.

In this face Form, Color, Attention, Memory, and Language are as evenly balanced as one may ever expect to find them; these faculties are practically as large as Reason or any of the faculties beyond Reason. The point at issue is, how can we determine that the vocation should arise from Reason or from Construction, when the faculties already treated in this course are indicated as being equally as strong? The natural law in this condition is demonstrated to be, that an equally large higher faculty dominates all those below it, the range of power having passed upward along the path of ideas. This does not hold true unless the faculty above is dominant in size or has an immediate associate of equal power, as with Reason and Construction.

Will faculties, which are much farther around the circuit, may influence the vocational trend of any faculty dominance in the direction of an industrial or executive form of activity.

For this last condition, the sciences are seldom chosen when there is great executive power supporting either Reason or Construction, and these faculties are often influenced toward the reflective financial, or other commercial reflective vocations. In face c the absence of strong Economy, Aversion and Destruction, and several other faculties, would militate against a commercial career.

Concord of Reason and Executives:

In the three faces of Fig. 127, we have an illustration of the concord of Reason with the Executives, and the contrast of high reflective ability in the absence of high Executives.

Face a is that of Huxley, the eminent naturalist and lecturer. The nose has powerful signs of Reason and of Construction; the temple region shows a very high sense of quantity and large rhetoric and vocabulary of Language. Huxley had great purity and simplicity in writing on technical subjects, always reducing his technical terms to the simplest scientific forms and the least show of what one may call the altitudinous phraseology and those double page involved paragraphs illustrated by the writings of Mr. Herbert Spencer.

The Will faculties were nearly all very moderate in size.

Face b has a powerful reflective region in the nose; the
bridge of the nose is high and finely modeled, the malar bones and zygoma are clear and moderately high, the mandible long, deep, strong and well set.

In this face b we have a notable contrast with faces a and c. The contrast is not so much in the reflective regions, but in the executive regions of the face. This again brings into notice the influence of powerful executives upon a dominant intellect faculty.

In this face b there is no question as to the dominance of **Reason**; it stands five per cent above any other faculty. But there is a phalanx of faculties of the executive regions (see Regions of Executive Power and Motive Impulses, Part Two), that demand vocational recognition, that must find daily expression, and hence will determine in what vocational field **Reason, Construction, and Attention** shall exert their powers. In this face of the Industrial Executive, or Industrial Engineer, the vocation was rightly chosen; five per cent more **calculation** would add somewhat to the ease of extended arithmetical work or to accountancy in case of their extensive necessity.

Face c is that of an eminent chemist, who several times attempted to act as works manager in a moderate chemical plant, but completely failed, as his face indicates would certainly happen. The high bridge of the nose urged him toward accepting a compound
position with all parts of which he was familiar, except the fact that an executive needs to possess executive faculties. In this nose synthesis is as large as analysis, and his chemical work was largely synthetic by-products, with its necessity for extensive memory of formula changes.

Had these faces been those of moderate quality men, face a probably would have been an ordinary farmer or fruit raiser, face b a fairly prosperous storekeeper or general foreman, and face c a careful prescription pharmacist, although caution is rather low and routine would have given him melancholia.

The student should continually review and rate as carefully as his time will admit the subfaculties so far studied in the lessons. In regard to the rest of the face, it is best to consider its sizes, but to treat it as being yet unspecified or un-specialized territory, always remembering that a profession is not mastered by a casual reading.

Reason in the Sales Manager:

In the faces of Fig. 128 we have three successful sales managers, all having large synthesis and closely following analysis, observation, Memory, Language, and calculation, well supported by the Executives, though these vary somewhat, and their processes are, consequently, somewhat different.

We must call attention also to the full regions of the Aspirations as optimistic supports to the whole. This optimism in each face is balanced by judgment and aggression, by a good volume of Economy. The main point in our study here is the fact of a clear, orderly, well balanced ratio of the needed faculties and the support of these by what may be called an equable temperament. A balance of the Intellect, Aspirations and Will is required in the sales manager much more exactly than in the salesman. There are several reasons why the exceptional salesman seldom makes an exceptionally capable sales manager or merchandise man. This subject must be treated later in the course, when the student has mastered some of the executive regions to which specific reference can be made.

In this study we are interested chiefly in the broad synthesis of face a, the high observation just above synthesis, the broadening of the face at calculation, closely followed by analysis and the otherwise wonderfully even and balanced intellect as a whole.
In face b synthesis barely holds its power against the whole faculty of Attention (observation, mental-focus, scrutiny), while Form, Language, Memory and Construction range almost even in power and close to the dominant and essential.

In face c, synthesis again, as in face a, rises dominantly, but with analysis nearest to its volume, observation closely following; Language, Construction and Color close to Attention as a whole, while the Executives are hard and well balanced. Some marked characteristics stand out in the cheek and mandible regions of face c, in which it is shown to be more dogmatic than a or b.

By noting that synthesis gathers masses of information and has a tendency to judge whole results and conditions, and noting also other qualities under The Influences and Products of Reason, together with Attention and Construction, the student can gain much of the scope of action of these faces.

Enormous Makes Large Seem Moderate:

Face a, Fig. 129, of Alexander von Humboldt, is so powerful that the
nose, which is fairly long and unusually broad at the end, seems hardly large. The nasal angle from the auditory meatus is long, but the smallness of the faculty of Defense shortens the nose to 27 per cent, instead of 33½ per cent, of the facial line.

The septum of this nose is extremely broad and deep at the synthetic end. This gives a wide and masterly grasp of generalities and difficult problems; gives a powerful grouping of mass values of which philosophical conclusions are the product.

The septum, like that of face e, Fig. 118, keeps wide all the way to the facial base. This indicates that the analytical powers of Reason are equal to the synthetic activity of the faculty, and taken with the fact that the margins of the alae form a heavy rim of the nostrils, indicates that the analytical tendency to deferred judgment is constantly urged to render opinions by the synthetic forces. In this, Construction also aids synthesis.

The topographic line of the faculties of Inspiration, Reason, Construction, Amity and Reform rises like a mountain range from the foothills and plateaus of the rest of the faculties. The line of the remainder of the faculties is crooked and variable, but does not reach extremes.

In this face, brows that would give large Form and Color to an ordinary face here sink to comparatively less than moderate power, and the really wide head at the region of Language seems narrow in comparison with the enormous territory of Reason and Construction above.

The faculties of Amity, Reform, and Sociability, that made this mentality the lifelong friend of those who were lifelong enemies, without ever having an enemy himself, full out the upper lip, and, in appearance, shorten the forward end of the nose.

Regional Comparisons:

Compare this face a, with the enormous face of Michelangelo. Could dogmatic theories against regional influences and locations be more fully put aside than by these faces? Compare this scientific nose of Humboldt with the nose of Viscount Grey, the determined master of foreign policies, and then compare Viscount Grey's nose with the mass of logical negations found in the nose of Socrates. Could anything in nature draw clearer distinctions?
Face b, that of the great surgeon Lister, whose eminent work in antiseptic surgery is world known, is an Executive contrast to face c, widely known as a financier and commercial executive, a man of powerful mentality and great industrial acumen. The contrasts of faces a and b are those of the Intellect; those of a and b with face c are of the regions of the Intellect and the Executives.

Various Degrees of Reason Sizes:

Fig. 130 gives a variety of degrees and phases of the regional influences of Reason.

On face a the region of Reason is outlined by the dotted line, and the phases of Reason are quite equal in development. In Fig. 119, Lesson Nine, the forehead region and nasal region were outlined and studied; in Fig. 130, the nasal, or facial, region only is treated.

Face b has the negroid type of nose. In this type the influence of Reason is primitive and low. The nose is short and the indication small, not alone from the fact of small Reason influence but in part due to the relative smallness of a number of other small influences that will be treated later. The whole territory from the forehead (gabella) to the forward dental processes (prosthion) is retracted in the facial regions, thus indicating that the potential abilities are also as small as are the expressed indications.

In face c the nose is much longer and sets out from the nasal base. It is a childish nose and is relatively short and small. The index of Reason is small, indicating transient interests and transient reflective processes. In the young, it has the potential contours of youth and, by cultivation and maturing, may reach a favorable proportion in size. The resort of the vocational counselor in these faces of the young is to the forehead length of the Reason region; when the forehead region is long, the potential region of the nose is greater.

In face d the nose has the retrousse contour, is well forward at the base, but tips up very much—a sort of living interrogation mark. If this nose is that of youth and the forehead region is fairly long, this Reason may develop considerable synthetic ability, but Reason will never reach a dominant position in the mentality. It has Attention more vivid than has face b, though it has less of constant Attention than has face c; it has less Reason than has face c—if the quality of the two are of equal fineness. In mature faces these noses indi-
cate that **Reason** is far below the dominant and probably much less than the average of the individual's faculties. No reflective vocations (as instanced by physics, mathematics, chemistry, and the philosophies) can be advised for such septum angles and contours.

Face e shows the mature nose of Socrates, in which the end is even larger than the average normal nose. The bridge section is extremely small and undeveloped; it is both short from its facial base forward and from the brows to the superior lateral cartilage. The nasal bone above the cartilage is small and crooked, so that, in spite of the large end of the nose, the nasal angle is acute (hardly more than twenty-two degrees from the ear opening—it should be thirty degrees). This nose has a large septum. **Reason** is indicated as large, possibly dominant. But from the apparent absence of dynamic support, **Reason** is indicated as taking a negative, inquisitive attitude, somewhat overshadowed by the powerful perceptors, **Form and Color**, by **Language** and possibly by other large mental regions.

Face f has a long nose; the synthetic judgment end of the septum droops low and distant from the base. This is the nose of the reflective generalizer; it judges from masses of general fact; it avoids extended analysis, and cares little for details as bases of reasoning. Its reasoning is sympathetic with its intuition.

In face g, **analysis** slightly predominates in the reasoning processes; it takes moderate time to formulate conclusions.

In Figure h the septum sags low in a bow-shaped line and quite low from the edge of the nostril. It indicates intensity in the phases of **analysis**; indicates the tendency to prolong detailed consideration—to carry on equations as long as there is an opportunity or an excuse for doing so.

**Chemistry**: Chemistry is that branch of the natural sciences that has for its provinces the knowledge of the composition and energies of substances. It includes the determination of properties, characteristics and attributes which distinguish one substance from another, and the quantity relations and changes that take place in chemical action of the elements and of their compounds. Chemistry meets physics, mathematics, and mechanics on the common ground named Physical Chemistry, the knowl-
edge which correlates the physical properties, the chemical composition, and the expression of energy in all natural phenomena and mechanical industry. The subject of Chemistry is generally divided into four great branches, somewhat interdependent in their uses: (1) Inorganic Chemistry, (2) Organic Chemistry, (3) Analytical Chemistry, (4) Physical Chemistry. In practice, however, these primary divisions may be more fully arranged as in the following table:

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<thead>
<tr>
<th>Inorganic Chemistry</th>
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<td>Synthetic Chemistry</td>
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<table>
<thead>
<tr>
<th>Organic Chemistry</th>
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<td>Synthetic Chemistry</td>
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<td>Therapeutic Chemistry</td>
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These branches are arbitrary and are many times subdivided or their branches combined into many others. Chemistry spreads like a web through nearly all industries.

**Physical Chemistry:**

Physical chemistry is the practical application of chemistry to the various needs of mechanics and other forms of industry, therefore it has its largest utility in the fields of energetics and the industrial arts and sciences of power utility. It is generally treated in its relations to physics and dynamics as the Science of Energy, a branch of mechanics.

**Chemist:**

In the main, the chemist requires dominant analytical Reason, large secondary Number, tertiary Attention, with fairly large Color and Caution—all carried to the degree of skilfulness. The chemist should have a fair classical education, thorough general chemistry and the addition of special courses of study in the branch of chemistry he essays as a vocation.

**Inorganic Chemist:**

The inorganic chemist must understand that branch of chemistry treating the general and special qualitative and quantitative analysis of the various inorganic minerals, metals, and their gases, by the wet and dry processes, gravimetric and volumetric methods, by standard solutions, reagents, blowpipe, oxydization, reduction and other processes. Inorganic chem-
istry also treats of the impurities of water and foods, including the presence of chlorine, free and albuminoid ammonias, nitrates, copper, zinc, lead, chromium, iron and other possible deleterious substances. The inorganic chemist requires dominant analysis, closely following synthesis, imagination, object-form, individuality, calculation, Color, observation and mental-focus.

Organic Chemist:

Must have a thorough knowledge of the fundamental principles of organic chemistry, of the processes of qualitative and quantitative analysis, particularly in their relations to the products and by-products of foods, medicines, and converting products. Some special branches relate to research in the organic poisons, poisonous gases, the by-products of coal gas, coal tar, to the various oils of commerce, to soaps, dyes, and perfumes; to explosive compounds, as in the elaboration and manufacture of glycerines, nitroglycerines, dynamite, turpenite, trinitrotoluol; of nitrogen compounds, cellulose, the sulphurs, and various poisonous gases of the nitrogen, sulphur, carbon and cyanogen groups; of the phenols, anilines, and the heavy oils and their solids. He must be familiar with the treatment of the various vegetable, animal and mineral oils and fats in commercial quantities, with processes of distillation, condensation, evaporation and saponification of organic substances, and with the processes of synthesis of such as are possible in industrial chemistry.

His functions are the chemical counterpart of those of the chemical engineer.

The mental faculties required are analysis as the dominant, with synthesis closely following. Imagination and invention are the essentials, with supporting calculation, object-form and individuality, Color, observation and mental-focus, all within fifteen per cent of the maximum analysis. Vigilance and intensity are also required.

Chemical Engineer:

The vocation of Chemical Engineering is an extremely broad and exacting profession, in which are blended in varied proportions the vocations of the Industrial Chemist, the Mechanical Engineer, and the Structural Engineer. The vocational counselor should study the functions and requirements
of those vocations. The Chemical Engineer, however, trends toward analytical chemistry more severely than toward mechanical engineering, hence his dominant is Reason, with its analysis leading; invention and imagination essential; calculation, synthesis, object-form, individuality, Color, observation, high Executives, mental-focus, and Economy.

Industrial Chemist:

The great mass of the chemical professions now deal with some form of Industrial Chemistry. There are a great number of subdivisions and specialized branches of the science; it is not within our purview here to treat of all of these technically divided vocations filled by specialists, but to call attention to the main branches, since the mental requirements are much the same. Analysis is the dominant, with synthesis closely following. Imagination and invention are the essentials, with supporting calculation, object-form and individuality, Color, observation and mental-focus, all within fifteen per cent of the maximum analysis.

Food Analyst:

Must have training in analytical chemistry, with special reference to the analysis of foods and their physiological chemistry, and in the facts of chemical metabolisms, vitamines, dairy chemistry, the poisons of the decompositions of foods, of ingesta and of garbage. He should have a knowledge of plant toxicology, nutritive principles, and preservation from bacteriological fermentations and decompositions.

Metallurgist; Assayer:

The metallurgist must be thoroughly versed in the branch of chemistry treating the quantitative analysis of the industrial metals, chiefly in their relations and utilities in the industrial arts and sciences; the use of alloys, sulphur, manganese, carbons, silicons, and phosphates, as elaborated by laboratory and industrial processes. The field has increased enormously through the discovery of catalytic and alloidal functions of metals. Analysis, synthesis, imagination, Form, Number, Color, observation.
Pharmacist:

The pharmacist should have a knowledge of chemistry as taught in schools of pharmacy, to the extent required by the authorities granting him a certificate or license to prepare and compound drugs and medicines, and he should also have a thorough knowledge of materia medica, keeping records of prescriptions, and all other matters relating to the drug business. The pharmacist requires analysis, mental-focus, observation, Color, vocabulary, Number, Caution, Stability.

Physician, Clinician, Therapeutist, Diagnostician:

The science of medicine has its province in the prevention and healing of disease and the cure of any departure from the state of health. The science may be divided into several great branches, as internal and external medicine, or from another vocational view, into medicine and surgery. But however far one carries the subdivisions, these branches are mutually dependent upon each other. The same keenness in seeing and understanding the symptomatic picture and association of conditions and causes is required in every branch. Thus the study of normal life as set out by physiology and biology, the study of pathology and diagnosis as in hospital and other clinical opportunities, and therapeutics and preventive measures go hand in hand as modes of mastery in medicine. The range is very wide; physics, chemistry, therapeutics, electricity, gymnastics, massage, hydropathy, dietetics, climatic influences, and psychopathic methods are utilized to the utmost or brought under study as a means of medical advancement.

The various professions of the arts or sciences of healing by the use of medicines usually require an extended classical and technical education. The mental faculty requirements are Reason, intuition, imagination, skilfulness, Form, Attention, Caution, moderate Aspirations, Stability, Integrity and Amity.

Physicist:

The physicist requires dominant analytical Reason, secondary Construction, tertiary Form and Number, with fairly large Memory and Attention. He should have at least an academic education, followed by a thorough course in a tech-
Chart 97

DOMINANT FACULTY OF REASON
PARTIAL LIST OF VOCATIONS
WITH ESSENTIAL AND SUPPORTING FACILITIES IN THE ORDER OF THEIR DOMINANCE

MATHEMATICIAN
ACCOUNTANT
SYS. ACCT
EFFICIENCY MGR
MENTALIST
PHYSICIAN
SURGEON
STATESMAN
JURIST
ATTORNEY
TEACHER
ANALYST
CHEMIST
DIETICIAN
PHYSICIST
GEOLOGIST
POMOLOGIST
BOTANIST
VOCATIONAL C’SR
DRUGGIST
AGRICULTURIST
REFEREE
OSTEOPATH
PHYSIOLOGIST

ECONOMIST
TACTICIAN
COUNTY AGENT
CLINICIST
AURIST
SOIL EXPERT
FLOREST
PSYCHOLOGIST
PEDAGOGUE
ANATOMIST
BACTERIOLOGIST
HORTICULTURIST
SILVICULTURIST
FORESTER
BALLISTICIAN
ELASTICIAN
MECHANICIAN
MINERALOGIST
CLIMATOLOGIST

COLORIST
BIOCHEMIST
HYDROGRAPHER
OPTICIAN
METEROLOGIST
NAVIGATOR
PHOTOCHMIST
VETERINARIAN
ASTRONOMER
SPECTROSCOPIST
ARBITRATOR
WELFAIRIST
COMM. INVEST
PHYSIOGURIST
TRAFFIC COR’R
ECOLOGIST
ORNITHOLOGIST
ETHNOLOGIST
PHYMOLOGIST
ETHILOGIST
CYTOLOGIST
PLANT ECONOMY
PATHOLOGIST

FIG. 132
reflection college or institute in which he can gain the higher mathematics, and such branches of physics as his particular field requires.

Attorney:

The attorney requires a dominant Reason, fairly balanced in analysis and synthesis, secondary large Language, tertiary Attention, with fair Caution and Stability. He should generally have a classical education with a thorough study of law; a knowledge of the principles of accountancy is of marked value in equity practice.

Teacher:

The teacher should have an evenly balanced dominant Reason, secondary imaginative Construction, tertiary Language and Memory. If Reason is too analytical the teaching becomes slow and tedious, generally involved beyond the pupil's comprehension. Prime supports to the above faculties are the factors of an agreeable and attractive personal attitude, fair Stability and Laudation.

Accountant, General:

The accountant should have dominant analytical Reason, secondary Number, tertiary Form and Construction, with large Attention, Stability and Integrity.

Vocational Counselor:

The vocational counselor should have slightly predominant analysis in a dominant Reason, secondary Construction, tertiary Form, Memory, Attention and good vocabulary. (See How to Choose the Right Vocation, p. 71.)
Question: What subdivisions can one name in the nature of the processes of Reason?

Answer: The processes of Reason are those of mental analysis and synthesis and the formation of judgments concerning objects. These include the transformation of information received concerning the relations, laws, and modes of the action of objects.

Question: The character and quality of the opinions and judgments elaborated by Reason depend upon what general conditions?

Answer: Upon the quantity and character of the information received by the faculty from its companions and upon the perfection of the reflective operations of the faculty and of its functional companions, Inspiration and Construction.

Question: Is Reason a dependent faculty?

Answer: Reason like the other faculties beyond the senses, is dependent upon the nerve-energy reports of the other faculties; that is, upon the nature of the information received by itself from the rest of the mentality. In itself, Reason has no direct mental relations with the outside world. Reason must determine whether or not the information sent it is dubious.

Question: What are some illustrations of natural forms of dubiety?

Answer: When the eye recognizes a surface as green in color, Reason from experience determines that there has been a mixture of blue and yellow light, that green is a mental effect produced by the mixture. The appearance of the sun as having a diurnal revolution around the earth is determined by Reason as being due to the revolution of the earth upon its axis.

Question: What are some illustrations of artificial dubieties?

Answer: One can cite the thousand or more words in the English language that are spelled and pronounced like some other word and yet have different meanings; as: bay, a reddish or chestnut color, an arm of the sea, a gulf, the laurel...
tree, a garland, the bark of a dog, to bark at, the state of being hemmed in; or board, a timber sawed thin and broad, food and lodging, a body of directors, the deck of a vessel, to get on a train, to finish a kind of leather.

**Question:** To determine the meaning of dubieties, what must Reason do?

**Answer:** It must compare the doubtful idea with its context or with the circumstances of the idea’s use, before being able to determine the meaning of the dubiety. This ulterior determination is a waste of energy.

**Question:** What other forms of information make the efforts of Reason difficult?

**Answer:** When the information is relatively partial, when important negative facts are unfurnished, when several equations follow one another or depend upon one another, or when fallacious statements are taken as truth, the efforts of Reason are made correspondingly difficult.

**Question:** What errors of reasoning are frequently made when there are no particular errors in the facts given, when the information itself is true?

**Answer:** Errors are made in reasoning from analogies; in the substitution of an unrelated truth for a related truth; in the omission of dominating factors that would negative the judgment; in false inductions from unfamiliar evidence and circumstances; in elenchic arguments or opposite propositions that are foreign to the subject facts; and in the substitution of powers or of functions in the sequences of effects.

**Question:** What are some of the common defects of reasoning?

**Answer:** Transforming insufficient facts into judgments, insufficient analysis of complex facts, careless selection of poor data when better data are procurable, negligent composition of known facts, disarrangement of correlated evidence, and defects due to confidence in former judgments based upon errors.

**Question:** What is one of the clearly evident differences between physical reactions to energy and the mental actions arising from sense information?

**Answer:** The result of physical, or material, reactions is a reduction of substances and energies to simpler states or compounds or forms of activity. The result of mental actions arising from sense information is the transformation of the mental substances and energies into more complex organic forms, energies, and activities.
Question: What capabilities most markedly distinguish Reason?

Answer: The capability of conceiving the successive effects of present causes as resulting in future actions and conditions; the predication of a series of effects as being certain to result from given conditions.

Question: How does Reason predict future events?

Answer: By circumscribing a series of results that have taken place in the past and then by attributing to similar conditions in the present a similar series of future results.

Question: To what orderly judgments do the above capabilities lead?

Answer: To the conceptions of Reason that are generally called the conceptions of natural laws.

Question: From what kinds of facts does Reason deduce the reflection of natural laws?

Answer: From the recognition of a succession of particular kinds of activities and states following changes in formal and dynamic energies under the conflict of a series of dominating substances.

Question: What great errors of judgment and of observation have misled many mental philosophers?

Answer: The mistake in supposing that the senses did not tell them the truth, but that "introspective reasoning" could tell them the truth. These suppositions led to the conclusion that the senses dealt with a world of illusions, that the physical world has a "closed circuit of phenomena," but that, in some incomprehensible way, the physical part acting as the human mentality was influenced by the psychic life of man.

Question: How did Reason fathom its own errors in regard to the reports of the senses?

Answer: Just as it has fathomed other truths of natural laws: through analyzing and synthesizing the successive reports of the senses and comparing the changed relations of those reports with one another, the facts were discovered that each sense, by transforming its own kind of energy, tells the truth, but only that part of the truth that falls within its own range of transformation, transmission and information.

Question: What do these explanations prove?

Answer: They prove that Reason, reflecting on a series of facts, but itself operating in simple forms, may arrive at error in judgments; while if the operation is carried to more elaborate reflection, Reason may arrive at the truth.
LESSON ELEVEN
The Regional Influences of Construction

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Specific Location of Construction Influences:

The facial regions of the faculty of Construction are in the upper part of the wings of the nose, above the shadow-line when the light falls from directly above, and are margined upon the upper side by the bottom of the valley between the parentheses of the mouth and the alae of the nose.

Some phases of Construction are indicated by the width from side to side between the wings, some by the height along the nose and the development of the wing toward the forehead. The cranial region is in the side of the forehead just back of Reason, forming the outermost part of the third tier of faculties, and is just above the faculty of Language.

The Construction sign in the nose must accommodate itself to the faculties around it, to Reason in the septum and alae, to Attention in the crest of the end of the nose, to Inspiration on the side of the crest, and other faculties in the nose and the parenthesis of the mouth.
For these reasons the sign must hold its proportions whether the nose is long downward or forward, whether far out from the ear openings or near to them; therefore in reading the subfaculties of Construction they are given their values purely through their sizes and shapes in comparison with the rest of the face.

A topographic map of the "side hill" of the nose would show these subfaculty regions, but they are so blended that no sharp valleys need be expected between them. This will be clear as we proceed with this study, but as the territory, like that of the other nasal region signs, is comparatively small, the student may be daunted at first in reading the volumes of power.

The range of power of the three subfaculties develops away from the upper margin of Reason, that is, in the general direction of the arrows in Fig. 134 a.

General Definition and Field of Construction:

As in the action of Reason, so we find the faculty of Construction acting in a wide field of human accomplishment. In fact, it ramifies from the heaviest needs of aboriginal life through all the exertions of progressive culture in civilization, and markedly influences the ethics as well as the esthetics of the cultured mentality. Its station, in these wide expressions of power, is often modified by the quality of the individual mentality. Its field is open alike to all mankind, because the natural world furnishes much of its materials in the realm of imagination, much of its needs in the realm of skilfulness for the purposes of common comfort and defense, and opportunities in the realm of invention to utilize its gross materials in fields where art and science find place to institute new objects or to gratify the demands of increasing culture and
changing complexities of living. Nature furnishes the simple products necessary for human and animal life in all parts of the world, but these simple products prepared without artificial and mechanical aids for the needs of life are far from sufficient either in quantity or in usefulness when the social mass becomes dense or cultured.

It is in this elaboration of the original products of nature into complex products and enormously extended volumes that Reason and Construction take the master place.

Under these incentives, of bringing about increased quantity and quality, Construction mentally takes up its work of advancement and rebuilding.

In the initial Fig. 133, of Marcelin Berthelot, the great French chemist and scholar, the intellect is so balanced that it gave him, as it gave a compeer, Turpin, a plethora of abilities that neither his eighty years of intensive effort nor the unlimited opportunity of his surroundings would allow him fully to express.

In this face Construction, Reason, Attention, Memory and Inspiration so vie with each other that the dominant can hardly be selected from among them; but the rule that the highest faculty in region must hold dominant power is in force here, so that it rests with Reason or Construction. His Reason had both its analysis and synthesis high, Construction had its imagination and invention equally as high; as all Construction trends to building up, to synthesis, his mentality turned to synthetic chemistry and created the first great work in that field. Like Pasteur, Berthelot had cut loose from the established schools and many of the standard views, and productively visited many special fields of science and literature.
The Nature and Region of Imagination:

In describing the action of the faculties beyond those of the senses, we have stated that these faculties must act with the information furnished by the faculties of the senses, and work out new kinds and combinations of mental energies. Working out, laboring over, or elaboration, all mean the use of power or energy to form new energy or new conditions of objects. Imagination is that part of Construction that puts together the mental images of objects or of actions in such a manner that comparatively new images or new forms of objects are created in the mentality. Imagination, like other mental faculty organs, acts with others as their leader in this particular, just as analysis does in comparing parts of functions or processes or laws with each other. We clearly see that in constructive efforts imagination runs parallel with synthesis, it combines images into new visions of things or of acts, it mentally places the memory of parts together in a manner to make a new object; it is the basic subfaculty in the combination of the knowledge of things, just as synthesis is the basic subfaculty in the combination of effects; it mentally builds objects or ideas just as synthesis builds laws and causes.

In Fig. 136, face a, we have outlined four degrees in percentages of sizes of imagination in comparison with the dominant (whatever it may be—possibly Attention, since it is also very large), and in the face b have drawn imagination at 60 per cent of Attention, although it is noticeable that Attention is slightly smaller than in face a. At 80 per cent imagination would probably be above the average of face a, but this cannot be determined without the rest of the face.
In face b imagination would be vocationally deficient; it would be of little value in any vocation where this kind of expression was useful. It is noticeable that skill is still fairly large, as will be seen in a later illustration.

In its mental operation imagination can call up the image and fact impressions from Form, Color, Number, Language and other faculties and turn these pieces of information into a series of mental dissolving views, composites, visions, operations and images, capable of being made or described or improved by the rest of the mentality.

The mechanic thus imagines how parts of his work will fit each other, how the things he is making will act under given conditions, what obstacles will stand in the way of the best operation of his machines or tools or products as real things.

The inventor imagines what variations will be necessary in the real things he has in order to meet the requirements he is intending to attain. His imagination deals with the nature of things, with their forms, sizes and sensible qualities. If he is dealing with the potential powers, with the forces or energies of things, he must appeal to his Reason. But when it is in the nature of objects and their parts, it is imagination, or invention or skilfulness that is his operating subfaculty.

One can imagine, from a description, the nature of a device or of a piece of property, but one cannot imagine the value of a device or piece of property. One does not have a picture, an image, of value; one may have a judgment or estimate of values, and other qualities.

We often say, randomly, that a man has commercial vision. What we mean is that the man has commercial imagination, that he images how people under certain circumstances will probably act, or what they will do or desire or refuse to do. From many experiences the man with commercial imagination makes a new composite picture of what will happen under a series of conditions. If his information is good and his imagination keenly commercial he will construct a successful project, a well projected plan. The more definite and exacting his information and the more carefully trained his imagination is, the truer his judgment of the commercial problem will be.

Many executives work wholly on the history of their industry, and are fearful of anything that seems to them to be outside of the realm of "figures and facts"; they evidently forget that those "figures and facts" are the result, largely, of other people's imaginations, inventions, emotions and senti-
ments; so in the end they are playing with the constructed materials of others, if not with their own. A judicious combination of imagination and other reflective, and executive, faculties is a matter of great importance, not only to the inventor, mechanic and artisan, but to the executive as well.

In the face, Fig. 137, the balance of imagination, analysis, synthesis, the faculties of Number, Form, Memory, and the Executives is very effectively held, slightly dominating in the order stated, and fitting closely the successful topographic line of the Industrial Engineer. This face is celebrated for wise and orderly procedure in the office and factory under his management; for the calm and equitable treatment of questions of wages and conditions, for long-headed predication of employment conditions and factory management policy that can succeed.

The engineering and mechanical problems are not especially the vocational field of this executive, since engineering mathematics and the bench work are not agreeable to one so executively inclined.

In the face of Fig. 138, the mechanical faculties, Construction and analysis, are highly dominant; the
analysis has all the power of long continued equations and of the severest technical efforts. These faculties, with others, evidence by their signs the vocation of a technical construction engineer, all supported by fairly organized executive powers. The general optimism and the presence of large vigilance would make him a master of dangerous construction and engineering projects.

Skilfulness and Constructive Skill:

From the very nature of this subfaculty it has two prominent modes of action, dependent upon the nature of its associates in the same faculty and upon its support from other faculties. Skill without large imagination never inclines to the all round, varied and facile range of actions we can call skilfulness. Skill is, therefore, only the painstaking, detail, uncreative but imitative side of skilfulness, the side lacking facility, variety and originality.

Skilfulness has the quality of versatility, it is the expression of freedom of action under applied information and energized responsiveness. It is the source of technical structural variety.

In its expression in the face it rounds out and thickens the lobes, or alae, of the nose when imagination is above the average of the mental line of power.

Necessarily skilfulness is most needed where there is variation and difference in conditions, where the action taken has a large variety of means of accomplishment, where judgment and technical variations must be blended, and in those equations where the personal equation is at its height. Thus the steel plate engraver needs skill, but the dentist must
have **skilfulness**; the steel plate engraver can work with slow, exacting, patient movements after long practice and highly trained eye and hand; the dentist must be able to do fine work with great carefulness, but every case is different from any other, every part of his work is subject to variation from set ways or routine movements.

In Fig. 140, face a, the degrees of **skilfulness** are shown in percentages; it is shown to be **skilfulness** because **imagination** is also very large and **invention** runs high up and full above the region of **Reason**.

In face b, **skilfulness** is small and so is **skill**; the nose is quite narrow, as the dotted line tracing equal to face a indicates. But in face b **imagination** and **invention** still maintain large sizes, and if the rest of the mentality warranted it, these would incline toward the commercial and executive vocations rather than toward those of a mechanical nature.

Skill expresses itself most closely with **Attention, Form or Color**, and should usually have dexterity as one of its close aids. In many of the vocations skill is a factor of great influence and value. Most of these vocations are in the nature of piecework, machine work or hand work where great exactness is required, where there is a necessity for duplication of effort, or where great likeness is required. In the nose sign it is indicated by fullness at the outer end of the lobe of the wing of the nose, but where **imagination** above it is only moderate.

Skill does not largely enter into invention of new processes or ideas or plans; it has the characteristic of being routine. For these reasons we very often see routine workers with long narrow alae (see face b, Fig. 136) instead of their tracing upward toward the corner of the eye as a foothill to the nose.
In Fig. 141 we have a man who is difficult to place, in the fact that the whole range of intellect sidehead faculties is much depressed; Number is at 70, Language at 60, Construction at 60, as seen in the alae of the nose. Reason is at 90, with Form at 100. Thus any kind of designing that required either imagination, calculation or skilfulness would be under duress of the low abilities; bookkeeping also would exert stress because of small Number. The large Form would give penmanship ability, but the skilful hand would not be there to support it. Reason is synthetic, and hence would not specialize in technical phases of the sciences.

This combination of faculties and the presence of Color at 90 often turns the vocation to counter clerking or to team or delivery driving, where the street or price numbers are not extremely numerous. The modeling of the face indicates at least fair quality. Contrast this Construction in both signs with very large Construction. If one faculty stood extremely prominent in this face, its dominance would lower the low Language and Construction a considerable percentage.

Invention:

The invention sign is in the forward region of Construction, near Reason below it, and Inspiration nearer the crest of the end of the nose. It widens the wings of the nose in this part or else raises the valley nearer to the crest. It is less easily determined than is imagination, skilfulness, or skill, but can readily be measured after reasonable experience and care in observing its variations.

In association with Reason and imagination, invention
formulates new means of power application, it elaborates new processes, devises new instruments, and often aids in modifying structures to fit the changing requirements of the age.

The vocational counselor must watch the relations of Reason to invention, particularly in the highly technical vocations where Construction must rely upon analysis for the exacting work of higher mathematics in which Construction is dependent upon Reason for solutions. Construction does not carry on elaborate equations in mathematics, and when analysis is not the mode of an associate Reason there are certain to be difficulties where the mathematical elaborations are heavy. In this study of relations of invention to mathematics and the analytical problems of energetics, it is well that the student review Reason in connection with inventive vocations.

Invention is also closely bound up with understanding natural laws and the action of chemical forces as free agents. As the greater part of invention is an expression of the theory of machines, we are to be particular in seeing that the relations of analysis and invention are such as to sustain each other in the individual and his vocation.

Powerful Construction-Mechanics:

In face a, Fig. 142, there is a remarkable development in the region of influence of Construction. The alae of the nose extend half way along the length of that feature, and the head at the Construction region of the forehead is so broad that this faculty seems to dwarf several other faculties that would themselves seem unusually large if it were not for the extreme fullness of Construction. The faculties that are made by comparison to seem only moderate are Number, Language, Form and Sociability.

The nose in this face is almost Socratic in its shortness and in its lack of Defense, but these deficiencies are compensated for by the enormous intensity of the whole reflective region. The nose is slightly blunted by its mental focus, as shown in the sides of the end. The end is only moderately large by comparison with the alae, which imagination, invention, and skillfulness swell to extreme width and to great length upward.

The end of the septum is broad, indicating a synthetic grasp of facts and actions. The low septum in its middle region and its breadth in this region indicate the capacity for a great amount of analytical work. The large Number would aid the analysis in mathematics and science. In fact, Number and
Reason vie with each other in the struggle for great accomplishment, with the dominance of Construction acting as their controller. One deduction which the vocational counselor must draw from this proportionate influence of Number and Reason is that the natural activities of Construction will be practical and will stimulate a constant intention to return to a basis of actual quantities, rather than to be satisfied with theoretical ratios or hypothetical relations.

As the quality of this face is high, the vocational counselor knows at once that this subject has mechanical genius, that he has worked or should work in practical technics, that his imagination, invention, and skilfulness play for long hours at a time, and that his nervous system is voluntarily under high tension much of the time.

The face is slender, almost fragile, in the lower regions where the Will—itself being constantly subject to the overbalancing Intellect—does not sufficiently support its various regions of influence, nor keep the muscular and osseous systems in a high state of endurance. Note that the topographic line—the circles line—drops after leaving the regions of influence of the faculties of the Intellect.

This face is that of the technician who must depend upon Reason in the execution of problems and who, even when knowing his problems, prefers to have others put them into executive action. His great mentality reminds one of Gauss, the mathematician, astronomer and engineer. Gauss, however, had relatively large executive faculties. He occasionally took part in constructive management, but always retired from such management as soon as his directive efforts were no longer enforced. Gauss had much less invention and so was much more inclined to mathematics than is the subject now under consideration, who is a consulting engineer of the highest rank.

The Shop Executive:

Face b, Fig. 142, is the face of a reflective mechanic. In the nose, Reason and Construction rise so high that the rest of the line, which is quite evenly balanced, falls somewhat below them. The nose is long and is thin in its upper part, but is fairly high; its end is broad and heavy, indicating Reason as dominant and Construction as second in power. Number, seen in the width of the head at the eye level, is a close third. The faculty of Hope is large in the Aspirations. The combina-
tion of abilities seen in the nose and cheek makes an excellent shop executive. Note, also, that the whole mandible is set and firm, rather than stolid, which gives the mentality patience, persistence, and firmness.

The Mechanical Genius:

Face c, Fig. 142, (the triangles line) is that of the extraordinary workman mechanic. It is the face of the genius of things rather than that of the mathematician. The great forehead takes complete precedence over the highly modeled but slender lower jaw. The focus of power is in the end of the nose and in the splendid brows. The region of Construction in the alae of the nose is full, rounded, quite well up the side of the nose; it has imagination, skilfulness, versatility, and invention. The half tone reproduction of the painting does not bring this sign out as fully as it shows in the original. The large analytical segment of Reason droops the middle of the septum in a heavy lump like fulness as an indication of patient structural analysis that dislikes generalities. The region of Form indicates the scrutinizing intensity of the mechanic's study of personally made objects and their perfection of structure, especially those structures that require great accuracy in detail.

The whole face is fascinating in its wonderful modeling under the energies of personal unselfishness, mechanical ingenuity, reflective carefulness, indifference to laudation, absence of pride, or desire for power. Defense alone stands out as a caution against want.

It is the face of a man who works alone even among his friends, of a man who is sociable and genial, yet uncommanding in his relations with others. Intuition is so full that it sees structural necessities as if they were governed by organic instead of inorganic laws. One can imagine this face feeling the responsiveness of machines and devices much as the naturalist farmer senses and enjoys the necessities of the small life of nature around him on the farm.

Editorial Variations:

The editor requires rhetoric, vocabulary, imagination, observation, synthesis, analysis, fact Memory, the Culture faculties and independence. But these are largely Intellect specifics, and the executive faculties are generally quite secondary.
FIG. 143
The managing editor of a periodical has a broader range of functions to carry on than the editor; though not as intensive in the intellectual regions, the general oversight must be supplemented by an alert and spontaneous Will. The angle-line analysis of Fig. 143 is that of a highly successful managing editor. The dominant in this face is hardly distinguishable, because four regions are so closely balanced that it would be stretching one's judgment considerably to affirm that necessity would not determine which of the four faculties, Construction, Memory, Language or Industry, was predominant.

The fairly high synthesis will urge quick judgment and early action; large Stability resists easy change of opinion under pressure from other people's views, while the Aspirations and social faculties, ranking high, aid him in retaining friendships even under the stress of opposing views and interests. These also give him power to rank as friend to those who view each other as enemies; an equable temperament may take sides with neither when either is partly wrong.

In executive and managerial positions, the condition of the Will faculties takes such an important place that the vocational counselor must equate these with great care. In the trades and arts an unsympathetic combination of Will faculties often completely nullifies the success of talent effort, or otherwise success giving abilities. Often this adverse disposition may be due to only one or two Will faculties that are over-dominant or undersized, and that continuously nullify the good results of the whole mentality. In this face a of Fig. 143 the specifics of the Will are uncommonly well proportioned for his vocation.

The dot-line analysis of Fig. 143 is almost an ideal line of a circulation manager. In many points that are supporting, though not directly vocational, it closely parallels the line of the managing editor, but it falls quite generally throughout the executive faculties, very noticeably at Dignity, Stability, Caution and Economy, and rises higher at Defense.

The lower Dignity allows a personal freedom and "meet the crowd" spirit that the first line shuns in a general way; Stability will not resist with as much definiteness the pressure from others in matters of opinion or course of action, and admits a more easy going hurry in smaller affairs. The lower Economy may condone some carelessness in waste or indifference to expense unless checked by "the office." Synthesis is relatively high, so that the reasoning is largely that of
executive mass judgment, even in the careful survey of facts of means and methods of distribution, a condition where higher analysis and the study of causes and effects should be advised and care taken to avoid previous mistakes. Economic care and a disposition to personal saving toward security and income should be advised.

High belief, enthusiasm and display are apt to lead to unconscious braggadocio, a little overstatement of conditions, and, since Language is large, may verge upon talkativeness. These specifics are essential to salesmanship vocations and are part of the merchandising energies, provided they are kept within just the right limits.

In this face the nose is a little too short and heavy at the base, but its faculties are so finely represented and clearly carved that no vocational fault can be found except as noted. After a thorough study of the Will faculties the student should return to these Intellect studies and trace through them the Will and its executive powers.

Careful rating in the small regions is as important as that of the large regions. Most of the disasters of vocational life grow out of the effects of the two extremes of individual mentality: the mistake of vocational choice to fit the large faculties; the absence of support from the small faculties. But the vocational counselor must remember in giving advice that the causes of even these disasters are generally cumulative and only occasionally spasmodic, that the ability to advise against failure is greatly preferable to directing a convalescence.

Construction Products and Relations:

The relation of Construction to other faculties is very extensive, holding, as that faculty does, a position so closely involved with Reason.

Its source relations are acutely close with Form, both in the elements of design and those of versatility or skilfulness. In some activities the united action of Construction and Form is more closely defined by the term "versatility" than by the term "skilfulness." Construction responds to Form in furnishing it with composite visions of structure that can be made or represented; these dissolving-view energies are in the nature of inventions, that is, of new ideas, new plans, or new combinations. Some of these when mechanical are called novelties, others devices, processes and instruments. If Form is below medium it has difficulty in designing, representing or work-
ing out the details of the matter in hand. The word "formulation" very aptly describes the united work of Construction and Form. When this inventive tendency concerns forces, powers of applied energy or intricate adjustments controlled by technical conditions, Reason must be called into the mental conference.

We again call the vocational counselor’s attention to the fact that much of every trade or expert vocation must be worked out by the individual as a fact of his own invention, that a large part of all skilful activities is not imitated but is the result of knowing certain general rules and truths and facts concerning the work to be done, and then is followed by the artisan or scientist thinking the other facts out for himself. This ability to take a series of principles and conditions and fit them to the occasion, constitutes skilfulness or versatility or inventiveness, depending upon the nature of the means and desired products. It is the antithesis of routine work.

Number enters into this relation in giving the elements of quantity proportion, the definite measurements that may be needed, and this part of the technic of structures.

We have said in earlier studies that Form gave the basis of the greater number of kinds of skill. Form’s tendency is always to copy. Invention always inclines toward new and unlike actions or products as far as materials and conditions allow it to do so. If skill is markedly dominant as the expression of Construction, it seeks copying, exactness and routine, and this should be so noted in vocational advice. If skilfulness and imagination are the dominant expressions of Construction and are large, the advice should move away from that which is routine and imitation, of a set and non-creative order.
Invention has a direct relation to Caution, in all matters that have in view the avoidance of injury or failure, in the fields of danger. Hence, where there are operative dangers in constructive efforts, the vigilance of Caution should be fairly large, and if fatigue and endurance are in question, then the subfaculty rest should also be large. Many great impulses of Construction are directly aroused by Economy in seeking better results, or in avoiding waste, loss or ineffective tools or machinery. But Economy is not often powerful enough to influence intensely a dominant faculty of Construction, hence it often happens that inventive genius works hard at chimerical problems. On the other hand, the economist has vision enough to foresee the value of an inventor's work, and usually demands that the inventor shall both invent and then prove the value of his work.

The subfaculty of imagination has been fully described, but many of its relations are discounted by the self-described "practical man." Imagination has its phases of idealism—so-called for want of a better term—in relation to Liberty and the search for freedom in gaining happiness or industrial security, and in the object-structure visions it furnishes to Language or seeks Language powers to express. In these fields are to be found much of the body forms and esthetics described by the poets and novelists; the vision that makes certain the circumstances of the words, the verbal portrayals of variations from the experienced and actual into terms that are probable or possible or desired.

The Relation of Imagination to Industry:

In the relation of invention to industry we have found Caution, Economy and Defense responsive faculties. If we turn to
imagination in its relation to the executive powers of the individual, we at once realize that the man who is to reach a high place in the executive world must have constructive imagination and invention; he must see how to co-ordinate vast numbers of individual intentions, individual actions, desires and purposes. He can no longer imitate another successful man as men could in earlier days when the operations of commerce, banking, manufacturing and personal direction were open to observation. To-day these operations are hidden in a maze of intricacies and confidential obscurities, in which even competitive prices are uncertain criteria. Success is coming to the man who has the clearest mental vision, the keenest and truest idealization, imagination and commercial invention.

This implies that the executive shall have more than statistical facts, that he shall exercise commercial ingenuity and resourcefulness, that he shall be an instigating prophet of his field of endeavor, blending the certainties of experience with a rational new view of changing events and probabilities. Such work is as truly constructive vision and invention as is that of the chemical engineer who by a like process of mentality creates a new product, or of the constructive engineer who invents a new means for the transformation of energy. Under the studies of the Will, this subject is treated quite extensively.

The relations of Construction to the Culture and Aspiration faculties are seen in the response of these faculties to the newer conceptions of humanitarian, equitable and co-operative impulses in all forms of human endeavor.

Fig. 146 gives a series of outlines of the region of Construction in the alae of the nose.

Figure a is a double outline contrasting a small and a large nose. The inner line is a mature but childlike nose, indicating by its narrow ala only moderate Construction. The outer line is a large nose; the ala extends higher on the nose and indicates a fairly large constructive ability—the ability possessed by a good mechanic or machinist.

Figure b is an outline of noses similar to those of figure a, but seen from below, showing by the dotted line the larger region of the larger Construction. Figure c is a front view of similar sized regions.

Figures d and e show a contrast in size and in fullness in the regional influence of Construction. The larger region is bounded by the dotted line on figure d; this latter nose indicates quite large constructive and mechanical ability. Figure e indicates small constructive ability, but a moderate amount
of imagination is shown by the ala's extension along the side of the nose. Attention is called to other marked differences in the contours of the ends of the noses; in this relation, see Reason and Attention.

Figure f indicates small Construction, Reason, mental-focus and scrutiny; its observation is transient and fugitive.

Figure g has indexes of moderate Construction which is chiefly skill. The region of Attention is very large, and has a marked habit of intense scrutiny. The septum of this nose indicates that Reason is largely synthetic, with a strong inclination toward cynicism.

Figure h has small Construction. The nose is short from the base out and lacks the regional strength in Attention to supply even a fair basis for the amount of generalized reasoning indicated by the septum and alae.

Figure i has moderately large Construction and surrounding regions. Compare this nose with figures h and f.

Fig. 147 has outline faces of the regional influences of Construction.

On face a the forehead region and the nasal region of Construction are outlined by the dotted lines. These regions in this face are large, but Construction is here highly and evenly supported by a wide range of other faculties. This support is so powerful that Construction is barely dominant and ranks its supports by small percentages. This face is an interesting study, in its furnishing an almost perfect typical line of an executive mechanic or first class foreman mechanic; the pitch and power as either mechanic or executive governed by the quality of his organism as a whole. Notice that the septum is too short for the higher mathematics of the mechanical engineer. It is in such close, but vital, distinctions as this that the psychological test methods and the generalizing character analysts fail in vocational analysis, and where their withering generalities "fall down."

Contrast face a with faces d and f; the vast difference in the regions of Construction is at once apparent, as well as in several of the fundamental executive regions. The student is requested to compare the regions of Construction with the regions already treated and with the other regions of the face.

Figure b outlines the nasal bone and the cartilages of the nose. The specific influence of definite mental faculties in shaping and gradually moulding these comparatively immobile plates of flexible cartilage is quite as marvelous as are
the marvels of muscular contraction, or those of vital selection of structural substances.

Face c has powerful regions of Construction closely supported by other powerful regions. Some of these regions are not clearly shown in this face, a fact due to the absence of shadows in the drawing. The outline of Construction is shown in both forehead and nose.

Face d has small Construction. The forehead is narrow, the alae of the nose are narrow in the regions of the influence of Construction. Language and Color are seen to be small. Number is apparently moderate, though not clearly outlined. Form, Reason and Memory are quite large, particularly the analytical phases of Reason.

In face f, Construction and Number are small. Form is quite prominent, but does not indicate artistic or scrutinizing perception; it is rather transient observation. Reason, as shown by the long, thin, low-hanging septum at the end of a long nose, is markedly dominant, though the bridge of the nose and the crest of the cheek are under powerful influences of faculties not yet studied.

In face e Form, Color and generalized Attention are the powerful regions, with the upper lip, low spreading cheek and rather heavy mandible under strong influences. This face e is the face of a Javanese who works in perceptive vocations—gathering coffee-beans or cocoanuts. The alae of the nose indicate that he has not possessed any mechanical skill or abilities.

Some Typical Vocations Where Construction Is the Dominant Ability.

Office Equipment Superintendent: He must have a knowledge of the efficient planning and arrangement of offices, of the costs and uses of office furniture and equipment, of the best methods of handling work of the particular offices under his supervision, of the conservation of space and time elements, and of the means of providing light, heat, ventilation, and common comforts of office routine. He must be able to keep track of and the accounts of the various materials, the storage and salvaging of usable stock and furniture. Dominant imagination and skillfulness, supported by calculation, object-form, observation, Economy, Industry and Caution. Good quality.
Production Manager: He must be able to plan the routes, effective methods, and time elements of the production of his firm's products. Dominant Construction, supported by analysis, judgment, observation, calculation, Memory, Defense, Economy.

Factory Inspector; Production: Must have a thoroughly practical and technical training in shop practice and tool making, in gauging and measuring finished products by steel rules, calipers, micrometers, squares and protractors, surface gauges, screw pitch gauges, vernier height and depth gauges, limit, caliper and wire gauges, and in approved methods of testing materials. He should be capable of managing all forms of schedules, routing materials and products, and recording all matter relating to his inspection. Dominant imagination, skilfulness; essential calculation; supporting object-form, Memory, observation, scrutiny and Industry.

Airplane Engine Expert: He must have a thorough knowledge of and skilfulness in the mechanics and operation of internal combustion engines, and be familiar with the standard makes of airplane engines and their varieties of combustion, energetics and operation. He must be able to work to drawings, to assemble engines, to replace parts, and to rebuild wornout structures.

He should be able to tell by sound and by inspection whether the engine is working properly, to direct any construction required in repairs, to do high class work with the lathe, shaper, planer, milling machine, grinders and drills; to use the micrometer, plug, snap and limit gauges, and such other tools and machines as are needed in an air-motor repair or machine shop. Dominant Construction, supported by Reason, Number, object-form, observation, music (sound values), and Industry. These faculties should have technical education in mechanical draftsmanship, mechanics, higher mathematics, and electrical engineering in its phases of internal combustion. Good quality.

Airplane Mechanic: Must be familiar with the assembly, repair and maintenance of various types of airplanes, and able to make expert inspection of their working parts, as wire bracings, struts, etc.; should be able to install or remove propellers, to correct defects and sensible troubles; should have equivalent skill and experience to that required of a mechanic in auto service and first class machine shop practice. Domi-
nant skillfulness, supported by Attention, Form, Number, and Mobility. Fair quality.

**Air-Propeller Maker:** Must be a thorough mechanic in the woodworking industry, preferably familiar with the dovetailing, inleting, and inlaying of wood sections and the use of cabinetmaker’s tools, machines and methods. He should be familiar with all forms of laminating, machine finishing, hubfitting and balancing of air-propellers and the repair of damaged machines; and the art of pattern making, saw-tracing and hard polishing in wood would be valuable. The accessory trades are cabinet-making, piano making, furniture making and house cabinetry. Construction-skillfulness, supported by Form, imagination, Attention, Industry and Mobility. This trade does not require the high quality of the Airplane Mechanic or Engine Expert.

**Air-Propeller Tester:** Must be able, in addition to the capabilities of the air-propeller maker, to read the working drawings of air propeller mechanics, to record the data of operation of air engines and propellers, should have a knowledge of high speed motors, and rotating apparatus, experience in turbine motors, balancing armatures, crankshafts and oiling devices and in pulley friction devices. Dominant Construction-skillfulness, supported by Form, Number, Attention, Reason, Mobility, and Industry.

**Auto-motive Engineer:** Must be a thoroughly trained mechanical engineer, well posted in the kinetics of machines, in the strength of materials, the calculation of stresses and strains in structures and supports; well posted in the designs of air and water cooling systems, the laws of the expansion of gases and metals, in gravity and pressure systems, the theory and practice of lubrication in such systems; well posted in the use of electricity in gas engines, in the metallurgy of iron and steel and the various alloys of carbon, nickel, manganese, tungsten, chromium, etc., and the use of copper, bronze, brass and aluminum, as related to engines, machines, internal combustion engines, airplanes, trucks, tractors, and the enginery of hoisting apparatus.

The chief forms of effort are the designing and improving of gasoline, oil, and alcohol engines for automobiles, airplanes, tractors, locomotives, ship engines and portable power engines and devices. Accessory vocations are designer of internal combustion engines, mechanical engineer, engine block
inspector, and engine mechanic. Dominant Construction, supported by analysis, calculation, Form, Attention, and Memory. High quality.

**Auto Repairer:** Must have a thoroughly practical experience in auto-engine construction and repairing, gauging, inspecting for inaccuracies, wearing, and deflection of parts, and the ability to determine and describe repairs needed, or to determine what parts shall be rejected. Construction dominant, supported by Attention, Form, Mobility, and dexterity.

**Auto-Repairer; Carburetor:** Must be competent to adjust or repair standard makes of carburetors, possess a thorough knowledge of the principles and details of their construction and operation; as a skilled mechanic must be able to test and assemble new devices. Dominant Construction, supported by Attention, Form, Mobility and dexterity.

**Auto-truck Assembler:** Must be capable in the construction, assembling and mounting of auto-truck bodies on chassis, installing machine tools and special machinery for auto-truck handling; should have experience and ability to set up gasoline engine driven generating plants, in the installation of motor driven machine tools, storage plants and repair shop works; should have superintendence executive ability, practical experience in the management of men, and in service station utilities. Dominant skillfulness, supported by observation, object-form, calculation, Mobility, Stability, and Industry.

**Engine Assembler:** Should be capable in the general erection of engines, skilful as an engine assembler in knocking down, assembling and setting up motors, in fitting and adjusting bearings, in setting up and thoroughly testing standard types of puppets, valves, or engines, with particular relation to the mechanics of auto engine assembling and repairs. Dominant skillfulness, supported by observation, object-form, calculation, Mobility, Stability, and Industry.
A RECONSIDERATION of THE REGIONAL INFLUENCES OF CONSTRUCTION through QUESTIONS AND ANSWERS

**Question**: What does the fact of structures imply in mental requirements?

**Answer**: The mental ability to shape and adjust materials or ideas or actions to fill some purpose. It responds to the universal fact of building and rebuilding, the fact of making over into new shapes or forms the materials or concepts possessed.

**Question**: What is the mental nature of the process of Construction, and what can one advise in its cultivation?

**Answer**: The formation of composite mental pictures from sensations already received from the world around us, the making of dissolving views of more or less distinct impressions or ideas and the modulation of these into new conceptions of things or of their actions. Probably this is sometimes done by imposing one vision over another to change both, or to create a variation of all of the energies.

**Question**: What is the first specific subfaculty of Construction, and by what activity can it be cultivated?

**Answer**: Imagination, expressed in the mental involutions—mentally gathering together or fitting together—and elaboration of images furnished by the other faculties; in the idealizing of forms or actions by thinking about their possible changes of contours or of the direction of their movements; and in exercising ingenuity in transforming some parts of an image or of an idea of an object so as to adapt the object to new conditions.

**Question**: Are the fields wide in which this exertion of imagination can be of advantage?

**Answer**: Such exercise of imagination can be of great advantage in the arts and trades, in the world of literary production and interpretation, in the technical world, and markedly so even in the most practical forms of industrial and commercial effort.
Question: What is the second general form of activity of the faculty of Construction?

Answer: Skill, which is its simplest form, and when working alone is the mimetic and instructed use of tools, materials and machinery. But when this is combined with large imagination and some of the other faculties large, as Form, Color, Attention, it becomes skillfulness or versatility, and in this more complex form it is the constructive use of all of the factors that can be gathered from other faculties and applied as versatility and expertness in the field of construction. It requires the ability expressed as skill in carefulness and exactness, and the freedom expressed by imagination in the choice of ways and means, plus the united parts of the essential specifics required by the vocations.

Question: What can one advise as a method of cultivating skillfulness?

Answer: Try to overcome difficulties. Seek resourcefulness and variation; combine methods and means not obvious to the ordinary mentality, and become really creative in one's activities. This is generally thought of as being different from invention, since invention is supposed to be the creation of a device or novelty of some material kind.

Question: What is the third general form of activity of the faculty of Construction?

Answer: Invention, expressed by making new adjustments of materials or mechanical engines or mechanism to the conservation, transmission, or distribution of power and to the mechanical expenditure of energy for the physical shaping or modulation of objects; and by that form of mathematical invention which comes into activity through Construction and Reason mutually using the known facts and laws of physics and of mechanics in the organization of structures or machines.

Question: What does the fact of the existence of structures imply in the laws of mentality?

Answer: That there are laws of structure in the mentality that make it possible to create and change other structures, to understand the principles of building and invention, and to utilize the principles of mechanics.

Question: What bearing has the relative size of Construction, as a faculty, upon the facts stated above?

Answer: The larger the relative proportion of the faculty to the rest of the mentality, the more rapidly it can understand and act in accord with those principles.
Construction

Question: Does the fact of quality of the individual make a difference in his responsiveness to the principles of construction?

Answer: The quality index, or exponent, is the means of the relative climax it is possible for the individual to reach. To improve him any per cent beyond that index is practically at an expense in geometrical ratio to the gain. Beyond that it is in a ratio of diminishing returns. This will be treated further under the Executive faculties.

Question: Do the efforts of Construction necessarily need to be exerted only in making or building material objects, or to transform them?

Answer: Constructive efforts can be exerted toward every kind of re-formation or change; toward the purely material substances and structures, toward the conceptions of idealistic, esthetic or novelistic work, or even toward the indefinite, illusory conceptions of so-called imaginative works.

Question: What are some of the distinctive illustrations of these kinds of constructive efforts?

Answer: New kinds of devices and machinery, new forms of architecture and ornament, new symbolical paintings, sculpture and tokens, new theories of right, of beauty, of expression, new portrayals of personality and fiction, or of romantic and epic literature.

Question: Can the faculty of Construction carry on these distinctive forms alone?

Answer: It cannot, because it must depend upon other faculties for some of the mental factors of its compositions, upon others to carry them into fact or representation, upon others to stimulate or define the segments of its images, places, or succession of events.

Question: Can you give vocational examples of these relations and dependencies?

Answer: In architecture Construction must depend upon Form for the image reports of materials and shapes and place relations already known; upon Number for the exact measurements of complex fitting parts; upon Reason for the values of strength, stress and balance against pressure and gravity; upon Color for the harmonics and esthetics of color; upon Economy or Industry for the predictions of values, sources and utility of the object before its parts are procured or its work finished.
Question: Why are all of these matters of faculty dependence of vocational importance?

Answer: Because the individual who is to become a successful architect should have these faculties alert to their own uses in the practice of the profession. If one or more are much deficient, the conception of the structure will be to that extent liable to imperfection. The vocation counselor should keep these facts in mind in the selection or direction of a client or employee.
MERTON COURSE

VOCATIONAL COUNSELING and

EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

BY

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LESSON TWELVE

Construction Products and Mechanics

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In the study of The Regional Influences of Construction, we treated of the specific location and the nature and general field of Construction. It is well in this study that we carry the subfaculties of Construction into other great branches of the industries, including mechanics.

We stated that imagination was the act of the mental involution of images furnished by the other faculties. This is true of the images, or mental pictures of objects, whenever the mentality makes changes in its ideas concerning things in general or in its ideas of the ways that things will act. It is a form of idealization, of conjuring new views out of parts of old ones, of seeing how things will work in times or places or with things of which we have not enough knowledge of laws or of facts with which to make a certain and measured product or result. This process is imagination or some other part of Construction, because if we were working with exactness and with laws or measurements, it would fall to Reason or some other faculty,
not to imagination, skilfulness or invention. The vocational counselor must note these facts in connection with past accomplishments. Many men who work by "rule of thumb" credit themselves with having large imagination; they are technical but not particularly creative. In many instances, where the work is highly exacting or where it follows carefully elaborated rules, the exercise of imagination or even of skilfulness is not necessary.

As an illustration of the above, take a journeyman cabinetmaker (Fig. 151), who works to regular or set forms; he does not need to imagine how he can vary parts of his work to meet new conditions. His ability comes nearer skill (100) than imagination (60) or skilfulness. He must have large object-form (90), fair calculation (80), and the aid of utility (80) to enhance dexterity. A stair builder, on the other hand, can rarely find two required flights of stairs alike; he must make new measurements and often must imagine how to gain beauty and convenience and save labor in construction.

In general, bench workers and automatic machine workers do not require large imagination even in construction work, because in the main these vocations work to models or to prefixed measurements; they usually need to have skill. Many mechanical device inspectors are included as not needing imagination. Planer hands usually need fair imagination because of the variations in their work. Chart and map engravers seldom need imagination, while jewelry engravers generally need high imagination, and this is often due to the fact of styles and ornamentation. Stone masons and photo-engravers, men working in the tobacco trades, the factory shoe trades, and similar vocations are not in need of more than average imagination. But many in these vocations, because
of variety of work due to changes in the sizes of parts or changes of tools or forms, need the skill part of Construction, coupled to good object-form or motion-form.

Imagination in Changing Styles or Methods:

It is notable that where the influence of changing styles enters into the products of the vocation, or where there is little machine work on the product, there is quite certain to be needed as a mental requirement a considerable amount of imagination. Thus the landscape architect has object-form as his dominant, but imagination must follow closely in proportion. The lace maker, the embosser, the general class of designing engravers, where ornamentation is of first importance, are in these classes, whether their dominants are Form or Color. This of course applies to the production of objects, where their styles change often or widely, or are open to great variation in form, color, size, texture and other conditions not closely subject to machine production or to what may be called routine handwork. Hence the imagination may find freedom to play upon new products or varied elements of the work. As a further illustration, the milliner (see Fig. 152) must follow the elements of style in the predominant features of the goods sold, but must combine with this style the peculiarities of the individual, of the materials and intention of the work, all of which may call for imagination (90) almost as large as object-form (100), followed by Color (100), then manual dexterity, and, when in business, the Executives in proportion to the magnitude of the business. The numbers on the face relate to the order of predominance of the sub-faculties required by the milliner.

Thus we see that skill is vastly different from
imagination or from skilfulness, since skill may be a combination of exacting routine-like faculties, or the imitation of work already learned and carried on with only its plain necessities in mind. Skill is evidently, as shown by the experience of millions of men, the simplest or most common form of Construction ability, or sometimes of a combination of Form and Construction ability, in which the imitated actions or work of other people is the basis, and the instructed use of tools, materials or machinery is about all the individual can gain. Skill is required where great exactness and imitation is necessary, as in engraving bank notes, in copying drawings or portraits without variation, and as shown in earlier descriptions. As imagination becomes or is dominant in Construction, all kinds of routine and set forms of work become irksome and in time oppressive, unless mixed with variety and freedom in action.

In counseling or instructing others, they can be advised that when imagination is high there enters into the mentality a tendency to more complex kinds of vocational effort. There is struggle for the mastery of variations and of utilities not previously experienced by the individual; for new forms, means, plans or methods which are obviously or rationally possible in the opinion of the individual as differing from either past experience or past education. We shall note that this expression of imagination and its action with skilfulness is the foundation of self education, self-gaining and extension in many vocations. It differs from invention, since invention is much more dependent upon Reason and is a more formal expression of Construction.

We ordinarily class skilled effort and skilfulness as one mode of mental action, which can be termed versatility, but there is a great difference, as it is plainly a fact that many skilled men are not versatile even in their own vocation, while
others are not so absolute or accurate or exacting in the facts of their vocation, but have greater originality and versatility. When there is natural skilfulness—skill combined with imagination or with invention—there is comparatively large ability in overcoming difficulties, in the correlation of differences of a contrariant nature, as when setting aside obstructions, overcoming antagonists, or modifying bad conditions.

The Progress of the Mechanic:

The vocational counselor may often need to advise that the mechanic's title to good workmanship and skilfulness frequently rests in his ability constructively to modify or technically to enhance the quality of his work, or that it may rest in his ability to increase the utility of his materials or to embellish the esthetic qualities of his design. In the progress of a journeyman mechanic there are stages where imagination, skilfulness and invention enter as levers to his advancement beyond the common skill vocations.

Many men who have skill are otherwise quite dull. Skill is frequently the result of many repetitions of the same act, as in piece-work and some forms of machine-work. In these forms of work, Form, or Color, or Attention may be the dominant, with little aid from either Reason or Construction. Skill may be extended to great perfection by natural aptitude and dexterity—as in manual cleverness in using the pen, the graver, or simple tools—without reaching skilfulness.

When dexterity is carried to a high degree of response to some one else's activity or to a variable machine's action, it becomes adroitness; but it may not require imagination. When more mental variety is required, the mechanic or artisan must become "handy," or skilled.

To go beyond the degree of ability called "handy," or skilled, the mechanic must exercise a fair degree of imagination, enough at least to give him aptness. To this aptness a somewhat larger Construction may add variety of ability enough to make him clever or deft. Still larger Construction or a higher mental quality may give him ingenuity in working out original or gainful methods, or may carry him to stages of proficiency, adeptness, or master-mechanic skilfulness.

In Fig. 154, the presence of large Construction supported by Form and Mobility, with Industry, gives skilfulness in blacksmithing and in horseshoeing. Imagination and skilful-
ness are dominant, the quality as noted from the modeling is only fair, and a high ability in mechanics is not indicated, even though analysis is fairly large. The face is muscular, the jaw full, but the modeling is not fine, clear, or highly purposeful. This is not easily shown in illustrations, but it is apparent.

Construction and Its Close Responses:

In the simpler kinds of building, such as carpentry, cabinet making, masonry, and the various furnishing trades, the faculty of Construction associates with its efforts the various degrees of capabilities required, as assistants, from the other faculties; as, arithmetical calculations from Number, design, and the use of tools from Form, or the common problems of physics and of property uses from Reason.

In the more elaborate expressions of architecture, the same faculties are called upon to render more expert and complex aid. The information here required is more advanced and technical, covering a wider range of experience. Greater versatility in the arts as well as in the utilization of power and manufacturing materials is demanded than would be needed in simple constructions. Each journeyman mechanic—carpenter, mason, erector, electrician, and the rest—must apply his own particular kind of knowledge. If his work is to be of the best grade he must add to common trade knowledge, skilfulness and variation of methods.

Before taking into particular consideration the more technical vocations arising from Construction, we shall need to survey for the vocational counselor's use the influence of Construction upon the great industries it is directly or indirectly instrumental in creating or in elaborating. Industries and their path of growth do not arise from opportunity, as so many people seem to think is the fact, but from faculties able to
create and sustain those industries in order that the results may gratify human needs or wants.

Into the creation of these great industries as operative plans among human beings, Construction enters as truly and as specifically as it does into the making of instruments, of tools, or into the involved relations and mechanics of mechanisms. The executive must work from facts, but he must also work from prophecy and commercial vision that are predictions of possibilities. To work from fact only is to move chained to a post. To work from the place of prophetic vision and constructive foresight is to exercise judgment and experience under the impulse and direction of the compass of possibilities and their rational indications of opportunity.

This ratio of mentality is often a combination of technical training and business ability, or of executive and technical abilities in which one or the other predominates. Business ability and executive ability differ materially, inasmuch as business ability is the direct and personal survey and conduct of the buying, selling and supervision of the store, plant or industry, while executive ability is an indirect management of these factors, by working through others, through the control sheet, or through sub-executives and other employees. An illustration of this vocationally compound mentality is seen in Fig. 156. This is the face of a consulting specialist in gas production engineering and an executive director in the corporation. It will be noticed that the faculties studied up to this time are all highly and quite evenly developed. The nose is extremely wide at the end, the bridge wide but not high, the brows full, level and wide; the whole forehead holds its own in the range of powers, except the part represented in the upper lip.

The executive faculties in those parts of the face we have
not yet studied are also powerful, taking away from the Intellect its sole control and much of its vocational specificity. The mentality is enabled to carry on executive lines in addition to its engineering; unquestionably it is inclined toward the technical phases of the industry, rather than to the banking, merchandising or legal sides of the work.

In Fig. 157 there is a grouping of commercial imagination and commercial Will faculties that indicates a manufacturer of products not highly technical and exacting but which require an understanding of automatic machinery or of similar devices. The shoe manufacturer is an illustration of this kind of an industry. Note the high contours of the nose, the heavy cheek and the firm set jaw.

The dominance of Construction is very much challenged by synthesis and spontaneous judgment, by calculation and Impression (Impression immediately back of calculation), and by all of the elements of Attention in the end of the nose. Under the study of the Will, the executive and industrial faculties will be located and described as faculties enforcing the commercial activity of the intellect, and without which Executives the Intellect will avoid industrial activity.
Wide Employment of Construction Ability:

Since the faculty of Construction is not confined in its expression to the structural sciences and industries, it has a prominent part in the management of great commercial enterprises. The vocational counselor finds that many executives have indexes of powerful Construction ability. This is particularly true in the case of those who have succeeded in building up great industries under new conditions, under the hazards of capitalization, under complex promotions and management; where tentative factors abounded on every side; where populations drift to and fro without foreordained plan or unified impulse; where climatic or civil conditions might bring unexpected havoc; or where hidden strata of the earth might change to nothingness the best laid plans of men.

Constructing Executive Bodies:

In physics it is an axiom that the whole is greater than any of its parts. Likewise, it may be said of a group of executives that the intelligence of the group is greater than the intelligence of any of its parts; and, obviously, one executive group is greater than another just in proportion as its individual members and their co-ordination excel those of the other executive group.

The forming of an executive group to meet particular managerial necessities is one of the most difficult tasks of founding new enterprises. It requires large Construction ability in the organizers. The human equations that enter into the forming of an executive group are not calculable as are dollars, or pounds, or volts. The factors are often unstable quantities, which are as nearly measurable by imagination as by judgment or by personal history. The executive and the subexecutive need, no less than the architect, the engineer, and the inventor need in their lines, idealization and imagination to bring coherence and co-ordination among the fragments of their human organization, to adjust powers to functions, to foresee the contests for individual supremacy, and to mould the transitions of changing developments.

Fig. 158 has indexes of the combination of technical salesman and commercial organizer. If his quality had been only moderate he would have been vocationally placed as a dealer in hardware or machines or other forms of mechanical apparatus, or perhaps in the absence of such opportunity or means, as an installing electrical engineer.
High quality would at once open the career of an expert salesman or manager of the selling department of a technical industry. Such an industry might be electric lighting, electric power plants or power conduction system; it might turn to the installation and utility of automatic and controlled machinery, as in the case of high power or rapid action presses, or batteries of machines in milling of various kinds, or to the sale of attachments and subsidiary mechanisms.

Construction and Reason Highly Marked:

In Fig. 159 we have for our consideration three faces, powerful in Construction ability. The topographic lines of this Construction series of faces are, in general, extremely variable, except at Construction and Reason. In none of the three faces is there a faculty point other than Construction and Reason that could possibly be determined as a dominant. In faces a and b there are evidences of considerable executive ability, more prominent in b than in a.

Broad Vocational Possibilities:

Face a is an extremely broad face, the contours of which are powerful and well modeled. Reason is slightly dominant, with Construction a near second, and intuition following closely in size. The nearness in size and in power of the three faculties is shown in the lower part of the nose; the end is bulbous, heavy and broad; the wings are relatively heavy; the septum is broad at the outward end and at the base, and is low in the middle.

The broad end of the septum indicates a remarkable search for masses of facts and for general la·rs; it struggles for wide information and for broad foundations of knowledge. The
broadness of the septum at analysis, the middle portion, indicates analytical intensity; its quite low droop in this part shows a disposition to analyze to the end of necessity. At the base the septum still holds broad and is relatively low, which indicates that judgments are frequent, careful, well supported, and are woven together. The lobes of the nose swell broadly at their base and rise somewhat conical in shape along the side of the nose, indicating a powerful Construction ability, particularly in the imaginative phases.

This subject begins reflective operations with much intuitive sensibility regarding the organic nature of things, with a synthetic vision of possibilities. He would stand well ahead of the majority of those who follow the same profession or allied activities, because of the fact that he foresees the trend of events.

The marked Construction and Reason of this face make either mechanical or chemical vocations easily possible. An extended analysis would be required for an understanding of these possibilities. The practically equal powers of Reason and Construction, supported by fair Number and supporting Form, point to industrial chemistry, mechanical engineering, architecture, or to any one of a number of other sciences as a vocation. Some forms of industrial and mechanical engineering sciences are almost thrown out of consideration by the low Wealth and Commerce faculties, while architecture is made doubtful by the ten per cent lower Form than the dominant faculties and by the relatively low Color. The quite moderate function of Aspiration and the equally low faculty of Sociability incline the subject to work sedulously alone. Under these conditions the chemical vocations gain in prominence as a choice, even with Construction equal in power to Reason. Form, Number and Attention are fine supports to a marked inventive ability and a dominating desire for discovery, independent of any desire for wealth.

Construction Leads Strong Will Faculties:

In face b Construction is dominant. The nose is fairly long, and the alae are wide and thick, with their upper margins rolled slightly over, almond pointed, toward the bridge of the nose. This reaching upward of the region of Construction indicates its dominance, and confirms the broad forehead region of that faculty.
For a face that evidently has power, the topographic line of analysis is remarkably even. This face is an example of high general abilities where one ability still holds a particular dominating power. It is a good study for the vocational counselor.

Note that Construction (100) is directly supported by the almost equal sizes, in the Intellect, of Language (90), Reason (92), and Number (90), and by the Aspirations. Given high quality, this face would not be satisfied with a professional life that did not give executive opportunities. The man is, in fact, a university executive, and, besides, holds several public technical commissions.

This mentality is shown by the topographic line to be a highly balanced organism—proud, forceful, wilful, somewhat dogmatic, and extremely conservative as an executive. The relative nearness of the eyes to each other indicates a kind of personal selfishness which arises from a combination of Will faculties rather than from any single faculty. In this instance this quality of selfishness is modified by the high Aspirations.

Construction Leads Low Will Faculties:

Face c presents a widely different mentality from either of the two preceding faces. Here Construction is dominant, but is supported by an almost equally strong faculty of Form. Attention and Reason follow these with a fair volume of power. Memory and Language fall in size to a state of introspection or taciturnity, to a desire to weigh problems but to say little. Amity and Reform are large enough to prevent gloominess or glumness.

The wings of this nose indicate the expert carpenter or cabinetmaker's versatility and sensibility—imagination and skilfulness are evident. The perceptive faculties would endow this high grade workman with accurate eye measurement and with the ability to see beautiful forms, delicate lines, fine color, grains, and hues, and all the other elements of exact workmanship and of artistic finish.

The absence of even fairly strong executive faculties is evidence that no struggle would be made by this subject for foremanship, or boss management, while the evident taciturnity, the sparingness of speech, with even alert Attention, would make the supervision of others a form of punishment.
Tentative Table of Applied Mechanics

**Statics**
- Statics of a particle
- Statics of a system of particles
- Plane statics
- Graphical statics
- Theory of frames
- Three-dimensional statics
- Work
- Statics of inextensible chains
- Theory of mass-systems

**Kinematics**
- Plane kinematics of a rigid body
- Three-dimensional kinematics of a rigid body
- Rectilinear motion
- General motion of a particle
- Central forces hodograph
- Kinetics of discrete particles
- Kinetics of a rigid body
- Fundamental principles
- Two-dimensional problems
- Equations of motion
- Free motion of a solid
- Motion of a solid of revolution
- Moving axes of reference
- Equations of motions
- Stability of equilibrium
- Theory of vibration

**Theory of Structures**
- Support of structures
- Composition of structures
- Stability of structures
- Condition of stability
- Prin. of least resistance
- Polygons of loads
- Lines of pressures
- Stability of position
- Stability of friction
- Parallel of proj’n of fig.
- Parallel of systems of forces
- Transformation of structures

**Theory of Machines** (Pure Mechanism)
- Motion of a point
- Motion of surface of a fluid
- Motion of a rigid solid
- "Elementary combinations"
- Motion of trains
- Motion of "aggregate combinations"

**Theory of Prime Movers**
- Balanced forces
- Deflecting forces
- Machines of varying velocity

Fig. 160
The Region of Technic:

The competent mechanician, engineer, or architect must bring into play all the forms of Construction activities in the technical branches of building and engineering. He must add to these the physics and higher mathematics of Reason and some parts of the utilitarian knowledge elaborated or gathered by many of the other faculties.

The mechanician, understanding the theory of machines and the principles of kinetics, is ready to vary or to transform his enginery or power. Thus, by elaborate calculations and determinations of kinetics, new problems of mechanism assume the characteristics of certainty.

The structural engineer, understanding the theory of structures and the principles of statics, is able to design in advance the most elaborate structures in which every stress, load, and element of elasticity or of stability has been taken into account; in which provision has been made for tensions, resistance, and time transformations; and in which provision has been made against the matters of senility, fatigue, and corrosion.

Under the themes of Structural Mechanics and of Applied Mechanics we have to deal with those Construction vocations that must be gained by a thorough technical education. It is almost impossible to reach success in these vocations through the channel of apprenticeship and practical experience. Even after the weeding out of incompetent specialized ability by the high school, academy or preparatory school, about forty-eight per cent of engineering students flunk in the technical schools or universities. These failures are partly due to the necessity that the student shall have fine quality in the mentality, but more directly to the fact that the dominant specifics, or subfaculties, are not the right ones or are not in the right order of succession in power. The vocational counselor must not waver in a negative judgment if the subfaculties are not right, the quality not high, and the executive stamina not great enough potentially to carry the student through the serious courses of mechanics (see Table of Applied Mechanics.).

In Fig. 161 we have the face of a scholarly teacher of engineering. The uniformly high range of engineering specifics is at once apparent.

In the wings of the nose imagination, skilfulness and invention are dominant; the septum of the nose is long and
evidently broad, showing the kind of analysis needed for higher mathematics, for the equations of physics and problems of structures. The end of the nose is broad in the region of synthesis. This would lead to easy conference conclusions. Following these the regions of Number are nearly as high, affording easy statements of conclusions in the forms of simpler terms of arithmetic. Language is fairly broad, giving teaching ability, and Form has the capacity to carry on careful design and "talking free-hand drawing."

The rest of the mentality is quite strongly developed, indicating power in the execution of purposes and control of men.

In Fig. 162 we have the face of an unusually successful power and plant salesman, an electrical engineer of broad supervision and management abilities. His nose is full at the end, with large alae and septum, the bridge is broad but not high. This face is notable in its width at calculation, Language and Construction.

The cheek and jaw (mandible) are full, heavy, and well modeled, showing various kinds of executive ability. This often gives us the ratios of a technical salesman, one who sells because he is master of the mechani-
ics of his line, and who, through the ability to advise and prove his arguments, through consulting upon phases not immediately involved in his own machines or structures, is able to command contracts. This face, however, is interested generally in and works with various forms of semipublic utilities and their extensions into private plants, as instanced in electric light and power, gas light and power, water supply companies, electric street railway lines and similar industries.

In Fig. 163 we have the face of another technical salesman, a specialist in heating plants, heat conservation, and the steam engine. This face has high Construction and Reason. As a technical salesman, however, he prefers no management obligations, works purely as a selling and advisory agent, and suggests improvements in many instances that effect savings equal to his sales. His creative imagination has made him a welcome visitor to plants where no sale of his line was contemplated for several years. Possessed of great originality along with his intensive interest in combustion and power mechanics, he is said to "loiter" through his sales, and close his contracts with uncommon ease.

Carrying the technic of Construction into its highest forms, the processes of heavy invention, we generally also find that the executive faculties are in a minority of power, that they retreat from the dominant line and are less in evidence in either the fields of business or those of management. Thousands of instances of this kind are found in the world of inventors. It does not seem strange that both ranges or regions of power should not be present in the same individual; it is no less probable that this should be true of the inventor, because his work is supposed to be in the practical world, than of the artist, the scientist, or the litterateur. Each has his region of dominance, and it is contrary to reason to demand a double volume of extreme
power. The business man is often as utterly deficient in any other high region of ability as are those in the general groups of vocations noted above.

In Fig. 164 we have the face of an electrical consulting engineer of high order. He has all the subfaculties of Construction highly developed and analysis equally high. As a mathematician he has few equals in the industrial world; as a constructor of electrical plants he has had great success, but largely as a technician, rather than as an executive constructor. As an executive his instructions are concise and direct, but in handling even the technicians under him the curtness and incisiveness of his orders are frequently a source of irritation and sometimes of unnecessary antagonism. In authorship he has uncommon succinctness and fullness, carrying technical studies through pages of interesting treatment.

Fig. 165 is radically the face of a mechanical inventor, one who depends largely upon the mechanism rather than upon the mathematics of his structures, although thoroughly versed in the mathematics and physical properties of his materials. It is largely in the field of automatic devices, of work-
able machines, or problems of structure rather than of energy, that this man has most greatly succeeded. He is able to invent complex machines, then the machines necessary to construct his inventions. He built up around himself a powerful business organization and found relief from the commercial parts of his industry.

In Fig. 166, which everyone will recognize as the face of Edison, the indexes of Construction, Reason, object-form, Memory, Attention and easy quantity memory stand out nearly evenly developed, slightly predominant in the order stated. The indexes of enormous Industry, powerful Mobility, mental endurance, large rest ability, and hypersensitive touch and hearing (the latter causing early deafness) are all clearly indicated in the facial contours. That this face has the indexes of the inventor is at once evident to one who understands specific mentality signs, and the powerful face plainly indicates the uncommon intensity with which the mentality will work. In comparison with other great inventors it is not so much the superior grouping of inventive abilities that predicts great results as it is the organic quality, the enforcing Industry and the balanced reasoning stimulated by an intensive Will.

The greatness of Edison’s intellect has modeled his face with much of the marvelous contours found in the face of Humboldt, with the same cast of youth-aspirations, with the confidence in the best of mankind, with an emotional sympathy with organized nature, all partly enforced by the success of his efforts and the utility of his enterprise.

Architectural Requirements:

The various forms of architecture fall under Construction as the dominant, and this usually implies the need of high rat-
ing in the specifics, imagination, skilfulness and invention. The amount of mathematics and physics of Reason that is required depends largely upon the complexity and character of the line of architectural construction. Residence construction has generally the least amount of mathematics and physics in its mental requirements. Institutional construction and the combinations of steel and stone structures call heavily upon careful calculation, often mathematical in its nature. In these forms of architecture analytical ability and thorough mathematical training are necessary; added to these abilities are the phases of ornamental design of branches of the arts.

Hence the architect, subject to the demands for all forms of Construction, can use all the degrees of architectural ability, from the framing or designing of cottages, to the design or portrayal of the skyscraper or the cathedral, the railroad bridge, or of the merchant marine and the superdreadnought by the marine and naval architect. Architecture blends with engineering in many of the more complex or heavier forms of construction. These varieties of professional effort are generally divided into the vocations of architectural draftsman, general architect, landscape architect, supervising architect, contracting architect, architectural engineer, marine architect and naval architect.

On account of the materials and the details of construction, architectural engineering does not usually include the simpler forms of architecture classed as residence architecture, although this often reaches great artistic fullness.

The chief variations notable in architecture are at analysis, synthesis, imagination, skilfulness (in technical care and versatility), object-form, hues and representation, observation, and the management specifics of the Will.

The angle-line face of Fig. 166-A is an example of the successful landscape and decorative architect.

In decorative and landscape architecture the dominant is imagination, with essential object-form, supporting hues, observation, individuality, skilfulness to the extent of reasonable originality, fair calculation, and moderate management abilities when the vocation is carried on under self-management.

The dot-line analysis of Fig. 166-A is the face of a successful general architect where the structures are heavy enough to require higher mathematical ability. In this branch the profession still falls on imagination and skilfulness, but Rea-
son takes the place of Color, with object-form, observation, individuality and Number closely following. Often facts, time and system take the place of observation, and occasionally the specific invention falls considerably below the other specifics of Construction. But the line at the vital points cannot vary widely without liability to failure.

The quality should range fairly high, especially when there are heavy problems involved. In this face quality appears fairly high; the modeling is orderly and clear. The executive faculties are professional rather than commercial, and there is indicated the necessity of working under determined fees or with a competent business associate.

The supervising or contracting architect generally has the same order of specifics as those of the general architect, and in addition must possess a higher range of executive faculties. These executive faculties enable him to oversee and carry out the construction plans, to act in every way as superintendent of the building operations. For these reasons the line should run well above 80 in the Will, as shown in Fig. 166-B, angle-line analysis, and it is sometimes found highly executive as in the dot-line analysis of the same figure. Economy is too low in both faces, though the high Will regions of the dot-line analysis are protective in that face.

Marine and naval architecture, like marine and naval engineering, are extreme in their exactions because of the limitations of space, weight, fire-proofing, arbitrary building requirements and structural supports, matters of elasticity and torsions, and other physical conditions. Generally the marine or naval architect must know much of the structural technic of the marine engineer, must be highly practical as well as technical and artistic. The dot-line analysis of Fig 166-B, is an example of a highly successful and executive marine architect.

Construction Trades, Skilled and Skilful Vocations:

There are many construction trades, skilled and skilful vocations that cannot be treated in this text, some of which are complex in their mental specifics but not in their apparent actions; others that are varied and widely spread in their apparent actions, but are not mentally complex, or not physically complex.

The occupation of the punch-pressman is an illustration of varied and widely differing pieces of work, but not requiring
<table>
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<tr>
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<th>DOMINANT FACULTY OF CONSTRUCTION</th>
<th>PARTIAL LIST OF VOCATIONS</th>
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<tr>
<td>WITH ESSENTIAL AND SUPPORTING FACULTIES IN THE ORDER OF THEIR DOMINANCE</td>
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<tr>
<td>ARCHITECT</td>
<td>MANAGEMENT EXP</td>
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<td>NAVAL ARC'T</td>
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<td>BL'DG SUP'T</td>
<td>CABINET M'KR</td>
<td>ASSEMBLER</td>
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<td>BL'DG FOREMAN</td>
<td>BENCH WORKER</td>
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<td>ELECTR'N. JOURN</td>
<td>STAIR BUILDER</td>
<td>BODYMAKER</td>
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<td>ELE'CL ENG</td>
<td>JEWELER</td>
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<td>TEL WIRE CHIEF</td>
<td>MACHINIST</td>
<td>BENCH PRESSMAN</td>
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<td>TRACTION CHIEF</td>
<td>TOOL MAKER</td>
<td>MACHINE ERECTOR</td>
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<td>CONCRETE ENG</td>
<td>TOOL BRESSER</td>
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<tr>
<td>MILL ENGINEER</td>
<td>TOOL SHARPENER</td>
<td>AUTOMATIC DRILL'</td>
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<td>MINING ENG'R</td>
<td>TURRET LATHE</td>
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<td>STRUCT'L ENG</td>
<td>TEMPLET M'KR</td>
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<tr>
<td>CONSULTING ENG</td>
<td>AVlé MAKER</td>
<td>PLATE PRINTER</td>
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<td>MOUNTING ENG'R</td>
<td>LINOTYPE ENGR</td>
<td>JIG-MAKER</td>
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<tr>
<td>MINE EXAMINER</td>
<td>PRESSMAN</td>
<td>GEE CUTTER</td>
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<tr>
<td>BRIDGE ENG'R</td>
<td>MAKEUP MAM</td>
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<tr>
<td>STEEL ERECTOR</td>
<td>FORM SETTER</td>
<td>BRASS FINISHER</td>
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<td>MANUAL TRAINER</td>
<td>BRAKEMAN</td>
<td>BOAT BUILDER</td>
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<td>PATENT ATTY</td>
<td>STEREOTYPER</td>
<td>TOOL CUTTER</td>
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<tr>
<td>HUMORIST</td>
<td>SAWYER</td>
<td>TRACK MASTER</td>
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<tr>
<td>COMEDIAN</td>
<td>BLINDMAKER</td>
<td>POWER THRESHER</td>
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<td>KINDERGARTNER</td>
<td>MILL CARPENTER</td>
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<td>DENTIST</td>
<td>APPARATUS MAN</td>
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<td>AUTHOR FICTION</td>
<td>ORGAN MAKER</td>
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FIG. 167
a wide range of mental specifics, say skilfulness, observation, motion-form, object-form, vigilance and dexterity.

Of the mentally varied type of vocation with a large variety of mental specifics, take as an illustration the job pressman of the printing trades, where a great variety of abilities may be required in succession (see page 44, H. C. R. V.), needing the specifics imagination, skilfulness, object-form, motion-form, hues, representation, dexterity, observation, vigilance and Mobility.

The tool dresser of fine tools must be highly experienced, skilful in his work, and as accurate as a trained athlete in the control of his instruments and hands, and yet he does not require a wide range of mental specifics. These specifics generally are skilfulness, object-form, motion-form, observation and vigilance.

THE REGIONAL INFLUENCES OF INSPIRATION.

Specific Location of Inspiration:

The regional influences of Inspiration are in the central region of the forehead above Attention, and on the side of the nose near the end just back of the region of Attention, and parallel to that region. This region is shown in Fig. 168. It blends in the nose with the primary synthetic sign of Reason at one point on its lower end. This faculty has an extremely limited territory, not having even as much as the faculty of Attention. When the faculty is large, it broadens the nose close to the upper margin of the alae and blends with the inventive part of Construction.
Nature of the Faculty of Inspiration:

Inspiration is the first part of Reflection and is the faculty that receives impressions of mental and vital energies in the form of intuition and foresight—which are often otherwise unexplainable—and of esthetics, before its functional associates, Reason and Construction, or the other faculties are aware of them.

Its most commonly realized sensibility is in intuitions of the nature of other personalities and in discernment of the intentions and desires of others. This sensibility is often carried to the degree of recognition of personal quality or of particular kinds of endowment.

When Inspiration is dominant or when it is quite large in an individual of high quality, and sometimes when the individual is only of moderate quality but very sensitive or of negative disposition, it seems to be impressed by the potential powers—the in posse rather than the in esse—of living things and by the possibilities of organic actions that have not been realized.

In these ways it seems to predicate the accomplishments of Reason. Because of the generalizations and the anticipatory character of the faculty’s receptive nature, its realms of activity are chiefly those of reflective esthetics, social ethics, intuitive forewarnings, and intuitive refinement.

Inspiration is seldom dominant in the mentality, but it is sometimes highly marked in the faces of discoverers and inventors and in the faces of welfare workers, reformers, teachers of ethics, and generalizing emotional social philosophers.

Inspiration Co-dominant with Language:

In Fig. 168 the topography of the nose indicates the dominance of Inspiration. The faculty has able support from Language, Attention, and the highly synthetic Reason. Construction, Number and Caution are relatively small, thus taking from this kind of mentality the natural tendency to work for exactness and for specific data and concrete evidence.

One may expect this face to have large felicity in speech and in the verbal illustration of ideas; it will observe many phases of action and of habits, but it will convert these observations into action-words and descriptive terms rather than into actual forms. One may expect this face to reason in broad generalities with the fullness of “abstract” proclama-
tions and to arrive at broad, albeit indefinite, conclusions, because no other kind of conclusions can arise from philosophic generalities. The energies of the faculty of Reason here mix with the intuitive energies of the dominant, Inspiration; this causes one to see relations between obvious facts and less apparent results. The high forehead contradicts the apparent intensive scowl of the brows; the evidence of the forehead is that this is a genial and companionable personality.

Surpassing Faculty Powers:

In the nose of Fig. 169, large Inspiration is blended with nearly all the elements of large Reason, Construction, Attention, and Economy. This is a face to puzzle the vocational counselor rather by its faculty surpluses than by its faculty deficiencies or lack of faculty supports. It has synthetic chemistry ability indicated by Reason, Construction, Color, and Number; it has engineering ability and mechanics indicated by Construction, Reason, Number, Form and mental-focus. A wide range of natural philosophy is seen in the mass of near dominant and supporting faculties.

Nor is this face deficient in executive and administrative abilities. Its executiveness is indicated, however, as that of the instructor, the educator, the declarer of views and principles; its Defense, Dignity, and Liberty, with the secrecy element of Caution and the efficiency element of Industry, add these executive abilities to the great intellect. In commercial executiveness the face falls to a tertiary place; it lacks the required volume of Caution, Aversion, and Destruction. It also has military and executive formulas, but has not military or executive desire.

The work of Berthelot bears out the regions of facial influ-
ence in every respect. The first great synthetic chemical successes were his, and he wrote a philosophy of chemical relations in opposition to the then current views. He discovered much, taught much that was new, wrote profoundly on science and natural philosophy, and translated many volumes from the old Greek, Syriac and Arabic treatises on chemistry.

A new department and chair were made especially for Berthelot in the College de France; he was made a member of the Academy of Medicine, Academy of Science, Inspector General of Higher Education, Life Senator of France, Minister of Public Instruction, and Minister of Foreign Affairs. As an inventor of ordnance and explosives he was chosen Chief of the Scientific Defense Committee of 1870-71. Such a varied career in such highly technical fields has seldom been reached by one man.
Question: What mental condition indicates broad vocational possibilities?

Answer: When three or four vocationally related faculties are in nearly equal power, thus neutralizing a decided dominance of one of the faculties.

Question: What is an illustration of one or more of these vocationally related groups of faculties?

Answer: The combination of Construction, Reason, Number, and Form in the fields of mechanics, or of Construction, Form, and Number in the fields of architecture, or of Language, Construction, and Attention in the fields of fiction.

Question: If the order of dominance of these faculties were changed, would it make a difference in the vocational adaptability?

Answer: Reversing the dominants would reduce the probability of success, or might make a high degree of success impossible to a person who could succeed under the right dominant. Sometimes reversing the supporting faculties makes a marked change in vocational desire or in vocational aptitude.

Question: What fact in this relation is of frequent occurrence?

Answer: A high-qualitied man working in a vocation arising from a supporting faculty—his third power faculty—is found to be making only the success that a moderate-qualitied man could make if working under his dominant.

Question: When a man is working under his dominant and supporting Intellect faculties, what factors may then modify the range of his activity?

Answer: The quality of the individual may limit the upward range of the individual, or the proportions of the executive faculties may limit the choice of branches that he can intellectually follow or can succeed in.
Question: What advice can be given where imagination is not quite high enough to meet the vocational needs?

Answer: That the cultivation of the imagination is important in its relation to constructive efforts, in its relation to industrial possibilities, and in its relation to the presentation of ideas. Imagination is an important factor in all forms of reflective and constructive effort. It does not imply vagaries or impractical notions; in fact, imagination, by its freedom from constant imitation, makes readily possible many new and practical transformations as parts of skilful accomplishments, or of inventions, or of esthetic productions.

Question: What element of progress is markedly an element of imagination, both in business and in the arts or trades?

Answer: If variations in the materials or in the conditions are necessary, imagination may take the form of ingenuity. Ingenuity may be necessary to gain the desired results by creating variations from all remembered forms, methods, or mechanical applications.

A RECONSIDERATION

of

THE REGIONAL INFLUENCES OF INSPIRATION

through

QUESTIONS AND ANSWERS.

Question: Where are the regional influences of Inspiration?

Answer: In the central region of the forehead above Attention and in the end of the nose between Attention and Construction, the lower end of the nose region blending with the synthetic end of Reason.

Question: How can the different kinds of abilities possessed by Inspiration be briefly defined?

Answer: It has the ability to receive intuitions of the quality of living things; sometimes to realize the intentions of other people; sometimes to prevision potential powers and natural possibilities; and it exercises an influence on the other faculties.
Question: What are some of its associate influences?
Answer: Stimulating Reason, with which it is closely blended, to creative efforts; stimulating Amity to esthetic and ethic actions.

Questions: What other faculties does Inspiration quite directly influence?
Answer: It is the intellectual forerunner of the Aspirations, being especially sympathetic with the faculty of Faith.

Question: What is the functional relation of Inspiration?
Answer: It is the most formal and generalized mental process of the function of Reflection. In the reception of new ideas or in gaining the outlines of new problems, some kind of inspiration generally precedes the acts of reasoning and those of imaginative construction. In these forms of mental activity Inspiration may predicate discoveries of that which is new or, at least, new to its particular mentality.

Question: Does this form of discovery happen frequently?
Answer: Much more frequently than is generally supposed to be the case. In the life of an individual, thousands of intuition and foresight discoveries—discoveries not due to previous thinking or experience, though possible to understand because of these—are made in the course of gaining knowledge and of foreseeing means of accomplishment. These discoveries may none of them be new to others, but are so to the individual making them.

Question: What is evidently the solution to this kind of discovery?
Answer: It is that Inspiration gathers something—one may say, is percipient to something—from the outside world that is not receivable through the senses, something not yet acted upon by Reason, but which is potent as an energy in the things around the receiver. This view is not orthodox in natural philosophy, but it explains some facts not otherwise accounted for.
MERTON COURSE

VOCATIONAL COUNSELING
and
EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

BY

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LESSON THIRTEEN
The Mental Balance

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LESSON THIRTEEN
The Mental Balance

Mental Plan and Laws:

It is the purpose of this study to treat of the laws of mental action in the brain only as far as is necessary in the work of counseling and employee selection. Some of these laws we will need to understand if we are to do easily and well the work of the profession. As we proceed in our practice we shall find problems that this study can solve and explanations of
what would otherwise be riddles to us. And, furthermore, some matters that may not seem clear unless the particular conditions are presented, or because they cannot be highly presented in this survey, will be clear when the conditions or problems come up in the practical work of analysis, counseling, or vocational determination.

The human mentality and the brain which is its physical replica, or companion, is an extremely intricate organism. How much is not yet known no one can tell, but many important facts are at our use and command. Thousands of pages have been written about the anatomical structure of the brain, but little about its mental plan or structure, because the first did not seem to explain the second. To its mental plan and laws Arthur Merton (1834-1916) gave a lifetime of study; this study was supplemented by others who knew his work. His discoveries rank with the greatest achievements of the mind of man. The chief laws can briefly be stated as: The Law of Functional Groups; the Laws of the Mental Ellipse; and the Laws of Mental Polarity. Many other important laws were added to these as sequents of these discoveries. That the plan and the laws he described are discoveries seems evident because they answer as explanations many questions put to them. They contain also the internal evidence of discoveries, because they are of such an order, we believe, that no one could imagine them even as a hypothesis or invent them as a conception.

Like other truths, once discovered and described, many of these laws are not difficult to understand nor to use in their bearings upon human effort.

**Changes Due to Mental Laws:**

We know that the impulses and likings of childhood are often supplanted, without adequate rhyme or reason, by other desires and purposes during advancing years to past mid-maturity, even to old age. Vocational desires that seemed to be our steadfast ambitions drift away imperceptibly; new ones follow and pass; often only grim necessity or utter inability to decide which of the many may best suit us, keeps us finally set at our tasks.

The changing ideas, emotions and ambitions that move us throughout our lives are not always the vagaries of chance nor the disjointed incidents of place. However much we may attribute our changing destiny to simple incidents or intensive struggle or fortunate choice, we are, after all, governed by law.
Laws Are Modes of Action:

Natural laws are the modes of action of substances or of forces or of things acting under these forces. We can know very little about laws until we know much about the structure and functions of the things which act in accordance with the laws. In Lesson Eight we studied the Nervous System from a mental standpoint. In that brief survey we traced the circuit of ideas and the course of their elaboration from the senses to executive and motive acts. We are now to see how the faculties act as a mental parliament in controlling the ideas and actions of the individual, something of how they move us in the social structure, and of how they act as an elaborately adjusted corporation in carrying on the Industry of Living.

The Organic Ellipse:

No more interesting or knowledge yielding subject can come before us than the study of the organic ellipse. Its laws are the basic laws that organize every living body, every organized body known to man. Even in the physical world these laws are operative in some forms of expression.

We may explain the plan of an ellipse as a hypothetic curve around two centers and along which bodies or energies move under the influences of the curve's centers, the sum of both influences being always the same. One focus gains power or influence as the other loses it. The planets of our solar system move along this curve; the forces of living cell structures move along this curve, and the organizing currents of the forces in the brain move along this curve or some modification of it. In this, as in other laws of structure, a third or fourth body may modify temporarily or structurally the form of the curve without, however, destroying its plan or power.

The reason that a third or fourth body does not destroy
the plan or the power of moving in the ellipse, is due to the fact that the focuses of the ellipse govern the form of its surface or control the bodies or the energies moving around them. One focus is positive and the other negative, and the mutual play of these positive and negative centers, with a neutral zone between them, acts as their controlling power.

The brain is a quadrifocal ellipse, generally about 5½ inches wide or high by 7¼ inches long.

Mental Government:

In order to create and govern the bilateral structures of the body and to carry on complex mental acts, all higher brain structures have bilateral hemispheres. The brain must, therefore, have on each side a pair of centers.

The brain's structure and its order of mental procedure are explainable by the plan of the mental ellipse. The necessities of a complex mobile body demand bilateral relations. Thus the two sides of the body have many duplicate parts, though some of the central organs, as the heart, stomach, and liver, are units. The human brain meets this demand by bilateral functions and double focal organs. Its functions usually come into dominant power successively; the consequent interrelations of its surface organs compel the extension of its ellipse in all directions, and demand an enormous number of means of communication. Notwithstanding this, and the further fact that the brain has relations with the rest of the body from which it receives energies and toward which it exercises government by energies, the laws of the ellipse hold good in the brain structure and in its order of mental procedure.

Each hemisphere, right and left, is partly governed by its
own centers, partly by the opposite centers, and is interchangeably influenced by the opposite hemisphere.

The opposite sides of the body must work in harmony, whether it is in expression or in work; this is illustrated by the way the hands respond to each other while doing different actions in themselves, as when one hand, generally the negative hand, holds the materials upon which the right hand acts. This is seen when the left hand "fingers" the violin and the right hand controls the bow. In these various actions of the hands and arms we have distinguished men as being right-handed or left-handed. Probably if the work done by one's feet were as intricate as that done with the hands, we would also note men as being left-footed or right-footed. Different parts of the brain and its mentality must govern each of these intricately responding actions.

The main co-ordination of the various muscles of the body in answering the commands of the mentality arises in the brain, not in the muscles, although the textures of the muscles may have a modifying effect upon the perfection of response to the mental command.

An evidence of specific control of the muscles of the body by particular faculties of the mentality is found in the fact that both local muscles and faculties vary in power together, and where certain mental abilities are dominant in the mentality, particularly in the Will, certain muscles of the body are dominant in size and in endurance. In these various ways opposite sides or ends of the Mental Ellipse respond to each other (the hands more independently of each other or in concert, as desired), certain actions become habitual or only partly directed, and other actions "trained" to an intense extent. Practically all of the mental faculties could be located in the ellipse by the one fact of mimetic gestures of the intents, desires and purposes of the mind. But that cannot be treated here.

A man may be very inept physically and very apt mentally; the motor responses to the commands of the mentality are not valuable as criteria of mental quality or mental mastery in any direction, except those actions which are muscular expressions. Muscle quality, however, never varies in the proportions or extent found in mental quality.

Now, since the two halves of the voluntary muscles of the body must be governed to act in harmony with the purposes of the mentality and often in opposition to each other, each side of the brain controls the voluntary muscles of the opposite
FIG. 173
side of the body and the opposing muscles of that side of the body, as the flexors and extensors of the limbs, but by different mental regions.

These general facts point to the necessity for some of the laws of mentality, but others are of a purely mental order.

**Mental Anatomy:**

In Fig. 173 is illustrated a horizontal cross section of the brain, showing the two forward focuses, or centers, (corpus striatum—striated body), and the two back centers (optic thalamus—optic chamber or wall, optic ganglion).

From the peripheries, strands and commissures of nerves run to and from the centers, through the centers, from side to side, and from ends to side and to ends. These short-cut or furnish direct communication between all regions of the brain. Into the centers come sensations along the sensory nerves through the spinal cord and medulla from all of the organs of sense in the body. No other kind of nerves than sensory are known to carry energies into the brain.

Toward the brain centers, from certain regions of the brain surface, nerves carry the impulses of government of the processes of the body and of muscle control; these impulses move out of the brain along motor nerves to various regions of the body.

These incoming and outgoing paths are exceedingly complex and not easily traceable in the brain, partly because only an energy of which nothing is known in physics travels on them, and partly because they have numerous automatic switches and relays.

Energies coming in from the body are carried through the negative focuses at the back and are sent inward as impressions, or information, to be used by the mentality. In general they cross over to the forward focuses and then out to their own kind of regions in the surface, to be changed, reformed, or varied as mental impressions which we ordinarily call sensations, meaning energies received from the organs of sense.

In preceding studies we have treated some of the mental regional influences, and some of the relations and some of the products of the mental faculties. We are now to study other reasons why all of the mental faculties are grouped together in threes as functions, why some follow others in the order of their action, why some aid or support or oppose or depress others.
The Law of Functional Groups:

Our most distinctive instance of the Law of Functional Groups is seen in the case of Form, Color and Number. The function grows out of the fact of light, the fact of sight and the fact of mental utility. We cannot see objects clearly without seeing their form, color and number. We may pay attention to or be attracted by one of these kinds of facts. We may notice the colors of objects without definite attention to or interest in their forms or numbers; we may notice the forms or numbers of objects without interest in their colors. But if our sight is normal we cannot see one of these without the others.

These sense of sight sensations are received as mutual involuntary information, and yet without conscious effort are segregated in different proportions even to the subdivisions of the faculties, and where mental preference is shown in the nine mental concepts of objects known to us through light, the subfaculty locations still correspond in relative size to the proportions of ability indicated by their signs. By no other method of determination except years of experience can these be measured.

These facts have specific vocational and educational value. They show us how a man may be apt in one vocation and not in another, may readily gain capabilities where ability to use and retain object forms on the one hand, or motion forms on the other, is the important requirement, or any other of the specific factors of perception, and fail where these specifics are not prominent as vocational abilities. Those psychologists who deny distinctive functional regions in mentality will never be able to do predictive vocational direction, nor will they ever be able to account for or describe any mental action in useful terms.

The facts of Form, Color and Number segregation stand out more fully when we realize that the faculty of Form does not depend upon sight alone, but does receive information of forms through the sense of touch, that Number receives information through touch and hearing, that touch itself has some kinds of substitute sources of information. Appetite is aided by the senses of smell and taste; hearing is aided by the sense of touch. Yet each sense has some part of its function that no other faculty can perform, however near in its sympathetic and normal functional relation.

Thus we know that the Law of Functional Groups demands
that faculties performing similar mental actions must occupy contiguous regions in the mentality; that there cannot be antagonism of effort between blended regions. The dominant faculty or subfaculty of the group assumes the dominating place in the activities performed by the group, just as the dominant faculties in the mentality assume the dominant place in the activities of the whole, whenever the conditions allow such mastery.

In the lowest plane of the mentality the responses of the Impulsion faculties to the others of the plane are remarkable in the realm of physical action. Everyone realizes how many of all of our movements are dependent upon sight, or our sense of touch, or our feelings of comfort or discomfort, and even when we decide by reasoning and executive impulses to carry out an idea, the actual movements are directed largely by the plane of the senses, by our consciousness of the world around us.

So, too, the great trades, the great arts, many of the common labors of mankind, rest heavily upon the mobility of the body, upon the destruction of the old and familiar, in order to create the new and the superior thing. To resist disease, to endure fatigue, to defend executive judgments, to make away with the old and useless, all require a good volume of the faculties of Impulsion, the responding function in the Will.

The Plane of the Senses:

The Laws of the Ellipse explain the relations of the various planes of mental faculty action, and all planes or ellipses of the mentality obey the laws of the bifocal or quadrifocal ellipse. As all regions blend with each other along their margins, no two opposing or polar or antagonistic regions can be marginal with each other, nor operate under these mental laws. Knowing none of the laws of mental actions, the phrenologists persisted in locating antagonistic faculties in contiguous regions of mentality, thus their Friendship, Matrimony and Amativeness surrounded one-half of their Combativeness; non-sequential faculties are crowded in between sequential faculties. These and other mislocations or transpositions markedly depressed their art, even had it been capable of further differentiation in its normal indications.

The lowest horizontal plane of mentality has all of the sense regions except the sense of hearing.
By this Plane of the Senses we can illustrate briefly the Law of Functional Groups, that groups of three faculties carry on mutual phases of mental action or work.

We are all aware of the fact that we must gain information through our senses before we can elaborate or use that information. If we have never heard we can never know or distinguish the kinds of information that come only through hearing; if we have been blind from infancy we cannot understand the nature of colors or the sensible peculiarities of light. The same general fact is true of all our senses; in their absence the mental faculties depending upon them can only be useful to us through our ability to substitute one kind of information for another kind gathered in our mentality by some other organ of sense, as when we realize forms through our sense of touch instead of through sight, or make use of words gained through sight instead of through hearing.

These are all matters of the senses. But these matters tell us that all ideas and all forms of knowledge begin in the senses. Since many of the animals have these kinds of information as received by the senses, and the feelings and purposes that are sufficient for animal life, but not for human life as cultured men conceive the needs or ideas or purposes of human life, we realize that there are mental realms of activity above those of animal life.

Those realms are in horizontal planes, or mental regions, above the possibilities of the senses, or of simply retentive mentality beyond the senses, and therefore above the mentality that creates the mature domestic life and natural defense of the animals.

However low or high the state of mental life of the animal kingdom below man, it must be accounted for by some of the mental plan and laws that account for the total life of mankind, because that kingdom obeys as far as it can the laws obeyed by man. The animal can sense the world around, can remember actions of the past, but is shut out from prophecy or the conception of functions.
The Mental Balance

The Plane of Retention:

The Plane of Retention has in it the faculties whose chief function is to retain impressions and keep track of the information received by the mentality, or to lay claim to the properties possessed by things; to protect the body from danger or want or loss, to be alert to advantages and to the welfare in general of the individual and all that he has an interest in.

Common experience tells us that there is a close responsive relationship between Attention and Defense; each has its mode of avoiding danger. But Attention is interested in many matters where no considerable danger exists, while Defense, in its dynamic way, is interested in preparation when the signs of danger are not apparent. We have earlier described the capabilities of Attention, and later shall describe those of Defense.

Memory, we have seen, does for the fact of retaining information what we shall find Economy does to gain and retain values.

Language and the voice are animal nature's common means of warning, her distance carrying signal of fear, rest and vigilance. Language has other uses, but Caution is very largely given to protection and defense against dangers. We can well call this the plane of Retention—to keep information, to preserve the family, and to keep everything safe from property to life.

The Plane of Elaboration:

To take the energies of information from the various mental faculties and transform, modify and elaborate those energies into thought and judgment, into knowledge of profound order, requires a full function of three faculties and their subfaculty processes of mentality. Upon these processes we have already dwelt extensively. It would be most rational to find that in the executive regions of mental-
ity the responding faculties were arranged to carry out—to labor into purpose and product—the complex and technical directions of the reflective regions of the Intellect. This whole plane of faculties is above the mental regions of the animals, except that here and there in animal life the mimetic laws of nature have aroused in the animal mentality glimpses of the necessities of higher life that fall within the extreme needs of animal wants, or that are an intensive expression of some phase of lower faculties.

We may note this in the instance of Liberty, wherein the animal seeks freedom for the sake of defense and as an expression of a higher phase of Caution; in the parental affinities of mates carried to a glimpse of marriage; in the construction of a home to shelter against recurrent dangers.

Some human beings have simply a similar gleam of volitional Liberty. In some forms of animal life Caution, experience and Defense arouse something of the attitude of futurity protective industry, obeying in a minor way the provisional laws of nature in food and clothing. The provision of the honey bee, of the beaver and the ant are prophetic in nature's laws, or these animals would never gain the concept or impulse to make the provision. Underneath the organized laws of the individual are the organizing laws of nature, capable of being adjusted to the wants of natural objects, of which objects all individuals are parts.

To say that animal life is instinct does not mean anything unless instinct is described; there is a woeful lack of definition of instinct, but plenty of description of habits of action obviously notable. To explain instinct as "reaction to external stimuli" only asserts the common fact as far as it goes that every action follows another action of some kind. The philosophies of life built upon such premises wholly ignore the facts of the necessity of an organism capable of specific actions and functions, with an organized plan of operation. The nervous system of the spider or the ant carries on a life outwardly resembling that of the human aborigine; but the apparently slight differences in their mental, social and industrial life require a great difference in the complexity and elaborateness of the nervous system of these insects and the human being.

Complexity of mental action, like all other complexities, when increased in arithmetical ratios requires that the organs creating the increase shall gain in geometrical ratios, or even more rapidly. It is a long way from fifteen mimetic natural
sounds to an aboriginal vocabulary of three hundred words; from sounds to names of objects or acts, or from these to the concepts of qualities. The Hindus say "the elephant is almost human"; but it is a question of what part of the human race is compared, in mental complexity, to the elephant. To add one more faculty concept to the elephant's mental region may be proved to be an impossibility, because the range of involved abilities necessary would be very great in spite of the elephant's known aptitude in "reactions to external stimuli" and the remarkable size of his brain. If his "mind operated as a whole," it would make little difference as to what particular class or kind of operations it carried on; inculcating philosophy and the calculus, instead of log rolling, tiger hunting and immediate directive command, would result in "reactions" of a philosophical and essentially mathematical order. There being, apparently, no differences between the nutritive and chemical subsistence of the elephant and of the vegetarian philosopher, the quality of structure would be alike, the sizes equivalent, the sources of instruction neighborly, and at least the results should follow in the order of "induction" and "deduction," so far as action or conduct can portray these, and the dumb alphabet come tardily into use among elephants of educational opportunities.

High executive power usually requires a fairly uniform expression of the faculties of this plane. The plans for execution must precede the facts of execution; the formative ideas of the intellect are necessary to the government that is to carry them out, but executive power must reside in the nature of the faculties themselves, as the ideas or the feelings which are the direction or incentive would never change their own nature into dynamic and volitional expression. They would remain like a dream, the unmaterialized mirage of an expressed reality.

The Plane of Social Harmonism:

The topmost ellipse of the brain embraces the unifying region. We may call this the Plane of Social Harmonism. It has the receptive faculties of Amity, Reform, and Sociability on its formal...
end, the executive faculties of Dignity, Stability, and Laudation on its dynamic end, and the unifying Aspirations on its static sides. This plane answers the requirements of complex social life on the one end and of massive structural industrial and governmental life on the other end. It came into power when the industries arose as powerful executive functions in society, not as an imperial fact, but as a fact of social and productive organization.

Hence this whole plane should be a controlling part of the mentality of the conscientious and humanitarian executive and of the mentality of the employee who seeks to receive and give justice. These relations will be treated intensively under the studies of mental executive energy and the faculties, products, and purposes of the Will.

Previous to 1906 we had advocated a local industrial republic in the factories and heavy industries, with vocational counselors and employment directors as adjunctive managers and co-ordinators of the employment processes that required special training in order to do those matters justice. It was too early, however, from the profit sharing viewpoint to command the attention of executive and employees.

Soon afterward, elaborating his own thought in the matter of effective co-ordination, John Leitch evolved a plan of appealing to the aspirations and to the faculty of justice in both employers and employees, with a practical scheme of organization which he aptly calls Industrial Democracy. His experience and that of others have proved that the highest plane in the mentality is beginning to make its influence felt in the difficult field of industry.

But we have found that men will quarrel under an unnatural vocation who would be well satisfied with the same conditions of work and compensation if in a natural vocation. Unrest and indifference are natural products of working secondary faculties under even the best vocational auspices. It is a feeling akin to homesickness, without, however, often having a clear idea of the source of the ill condition. Until a rational and consistent system of vocational education, selection and placement is more generally adopted, we shall have increasing labor turnover, meandering employees, eccentric production, and extending waste in industrial part time educational methods.

The re-education of millions of adults for piece-work and one-operation jobs without an undercurrent of the principles of the trade or industry, without mental variety or vocational
funds for thinking above the one piecemeal operation is deadening to the daytime life of the operative, to his will to advance, to his concepts of the world's equities, and to his perceptions of employment and personnel relations. If a man under such employment has higher powers unexpressed or unused, they scream in his ears for excitement, for exercise, for opportunity; because their language cannot be understood, does not make it less insistent, less disconcerting, less aggravating to himself, nor less disadvantageous to his employer.

The claim that a man can learn and do one operation much better than he can do two or more, that a piece-worker, a one operation worker, a routine don't-know-anything-else trained man is a more valuable employee, even at the same position, than is a man with a real trade knowledge and with an undercurrent of practical vocational information, is a fallacy that is costing a great amount of money and worry.

In Fig. 178 we have superimposed all of the planes in their natural order, revealing something of their relations to each other, and of the travel of energies in the reception and completion of thought, feeling and purpose.

It is necessary that we consider another law, or disposition, of things.

The Law of Polarity:

The great law of Mental Polarity enters into mental analysis and employee selection as a problem in the balance of power, as the source of modifications of extremes in the faculties, as the basic fact of the accumulation of energy or the government of extreme emotions or passions.

The Law of Polarity, or one may call it, the direction of energy control, is operative in every element of the universe, but it is massed and remassed in every combination of those elements, whether organic or inorganic, whether of the physical or the mental world.

We are then, in this instance, studying a mass of activities under the great law, or, we may say, the disposition of the parts or of the whole object.

Polarity in the Vertical Ellipses:

The ends of the vertical ellipses of the mentality have more powerful expressions of polarity than have the ends of the horizontal ellipses. After understanding their operations
we need only to keep in mind the main facts; the details will suggest themselves as they are needed.

The vertical ellipse has acute oppositions in some parts of its ends because some of these ends reach across from the high planes or regions of mentality to the low regions. Thus Amity, Reform and Sociability of the high intellectual regions are polar, or opposed to, the low regions of the Will. These groups strive for mastery and are useful to each other, the Culture group to sustain friendships, the Impulsion group to exact product or equivalent values, and to crush out of the way obstructions to individual advancement.

In less noticeable manner, the Perceptions, that is, Form, Color and Number, are opposed in interest or in purpose to the Ambitions, to the fundamental rulership faculties. One group is individual in its habits, in its means, and in its results. The other is both personal and impersonal, it moves in mass and in individual domination. We noted under the art faculties the fact that there is a conflict, in which, when one group is quite dominant the other is apt to be submerged.

The polar couplets show these relations of polarity and of response; to paraphrase the functions around the circuit of
the ellipse: “I gather”—“I control,” are polar; “I gather”—“I hold,” are responses; “I transform”—“I produce,” are responses; “I choose or accept”—“I distribute or reject,” are polar; “I consume”—“I aspire,” are polar.

Thus we see that polarities exist even in the static zone, with Religion at the top and the Senses at the bottom of the vertical ellipse. Each essays to have its own way, to seek dominance and gratification, the one to gratify the aspirations and the other to satisfy the appetites.

Illustrating Polar Faculty Relations:

When opposite, or polar, faculties are indicated as being nearly equal in power, they are known markedly to influence each other’s trend of activity. It is to be expected that powerful faculties will control the activity of weaker ones. But we must remember that powerful polarities do not neutralize each other—they institute the necessity for choice of action, they compel one to determine which shall be done. Thus a powerful Amity
opposed to an equally high Aversion, would raise the question of yielding to friendship or to antipathy when one or the other was excited, a question of forebearance or of repulsion when under opposition from another. The condition of mind would thus be hardly negative or quiescent, but active in one direction or the other. The faculties unquestionably, one or the other, may win the concurrence of other faculties, as the support of Reason or Caution or Dignity, and in so doing, having “won the toss,” act as forcefully as their power enables them to act.

These facts lead us to the necessity of explaining another law under which specific regions act in relations to each other. This law is a less marked expression of organic polarity, of living influences not found in the inorganic world, and is related directly to the horizontal ellipses: it is the law of Mental Responses.

The Law of Mental Responses:

Faculties in the same relative position at opposite ends of horizontal ellipses—that is, the intellectual and the executive faculties—markedly respond to each other, as instanced by retentive Memory and its responsive faculty, retentive Economy; by elaborative Reason and its responsive faculty, elaborative Industry; and by receptive Sociability and its responsive faculty, friendship-conserving Laudation.

In a similar manner in following ideas along the vertical ellipses responses are found in a series of chords under which one faculty most specifically aids another faculty a fifth distant, as illustrated by Number and Inspiration, Color and Reason, Form and Construction, Attention and Sociability, and by others along the path of ideas. This study of chords is not as valuable to the vocational counselor as are studies of the mental responses, but they will arise as facts throughout the study of vocational requirements.

The mental ellipses aid us in understanding the faculty relations of the mentality, even though those relations of location and activity are not apparent in the facial regions of influence.

Fig. 181A is an illustration of two powerful faces and the varied ellipses of their brains. Face a is a powerful Vital and Social Temperament, with a strongly supporting Will and Intellect. The vertical ellipse, b, is high, especially full in the middle regions, and the backhead long and full from the ear
opening back. The horizontal ellipse, c, is extremely wide, showing the middle region and backhead power. Nearly the whole face and body receive support from these full regions in which the backhead is positive in its relation to the forehead.
Face d is a powerful Nervous and Mental Temperament. Some parts of the Affections and of the Will are fairly strong, but the head is comparatively narrow and not high, thus the ellipses are very elongated and the horizontal ellipse, f, indicates a ratio of about 50 to 75, while the same ellipse of c is about 59 to 75. The auditory opening in d is noticeably farther back, the fore parts of the brain longer, see e; the vital regions are nearer the backhead and the Intellect fibres are notably longer. The Intellect is thus the dominant class of faculties.

In d the face and body are much thinner, the muscles long and tough or of high tension ability.

The diagram of the Mental Organism may seem like a formidable study, but it is not when taken as a summation of the substance of this lesson. The subject of changing energies, and the analysis of one of the vocations that follow will make clear the influence of one faculty in determining the preferred vocation, and the effect of essential and supporting faculties.

We shall treat of this mental plan and its laws under several heads: Co-operative Elaboration; Substances Change Energies; Polar Energies; Nerve Structures; Distribution of Vocational Powers; and an illustration through an analysis of Certified Public Accountancy.

Co-operative Elaboration:

When an idea does not require further elaboration by nearby faculties, its impulses may cut across the brain to those faculties that most naturally carry it into execution or to those abilities from which it desires or demands aid. These short-cuts accelerate mental activity, rest the unnecessary faculties and result in greater quickness of action.

Since every thought or idea or purpose is a form of mental energy and we can realize the labor of mental action more clearly by a general knowledge of energy action, we will turn our study to that subject for a page or two. Many facts of mental energy are equally true of the physical energies, and are well worth considering.

We have noted that in the animal mentality the current of an idea must turn backward at the level of the major horizontal ellipse, because there are only vague activities above this level of faculties in that mentality. There are no reasons to imagine that the energies of the animal mentality, as far
as it goes, are very different from those acting in the same faculties in the human brain of common quality. Many morons hardly rise above the animal mentality, the regional energies beyond the line of the major horizontal ellipse lying in a semi-dormant condition, or only capable of being aroused in a few paths or regions of activity. The processes of the nerve cells and neurons in the dormant regions do not seem able to reach those of adjacent cells, and are probably in a state similar to their normal state in sleep, or in aphasia or some forms of narcotic action. The body of the cell is isolated from surrounding regions in order to protect its own energies and substances; its own nerve tube or processes are the means of reaching others or of being reached; when these cannot reach others or be reached, they necessarily cannot act because they cannot transmit or change mental energies.

**Substances Change Energies:**

Energy, whether organic or inorganic, is a form of motion of a substance. It cannot travel in nothing; in fact, it is the name of the travel, or movement, of something hit by something else. If the travel of the body hit is relatively slow or the body relatively large, we call it motion; if the travel of the body hit is rapid and partially retraced, moving back and forth in the same path, we call it energy; if the travel of the body brings about a change of place of another body or the propulsion is cumulative, we call it force. All of these movements are kinds of change of place of the substances acting as moving bodies; the substances may return to the places they started from or may move on. Whether it is positive energy or negative energy depends upon how and from where and how much the something is hit. We know what kind of energy it is by its effects. We know whether it is positive, neutral, negative, organic or inorganic, by the way the thing hit acts. Variations of substances or of molecular quantities of substances may change or vary the nature of an energy acting upon them.

Any particular kind of energy is conserved when attempting to travel in (or move) a substance that resists its form of motion; it is converted (to the new substance motions) when traveling in a substance agreeable to its form of motion; and it is reversely directed or polarized (it dominantly hits back) when its propulsions or thrusts are reversed by accretions of other hits that are sufficient to establish dominance over its own source. Positive and negative bodies attract each other
or when held apart create relatively neutral regions between
themselves; negative bodies repel each other; and positive
bodies repel each other. Relatively static bodies or regions
have a tendency to accumulate substances by accretion; that
is, where there is quiet or energy confusion there is a tendency
to the accretion of substances and their particular disposition.

Polar Changes:

An energy in a confined substance or in an object traveling
from either center of the ellipse on striking the wall of the
ellipse is reflected to the other center; an energy traveling in
substances or a body traveling around the ellipse is influenced
by the energy of the centers. The centers thus have power to
stimulate or to modify the nature of the energy or the object.

Simply stated, the process of elliptical motion is: A body
propelled along an elliptical curve must be positive to one of
the ellipse's focal bodies and negative to the other; it is re­
pelled by one and attracted by the other; it retreats success­
vively around one to the other. Since this is true of bodies
moving around elliptical focuses, it must be true of the at­
traction or repulsion of the substances situated within the
range of power of the various parts of the ellipse, and of the
energies acting within that range of power.

As the propelled body changes its polar relations it loses
one disposition and gains another. This change takes place
as the body approaches and crosses the axes of the focal
bodies. Suppose a propelled body's disposition to be negative
and formal; as it crosses the positive and dynamic end of the
major axis, its disposition changes. It becomes surcharged
and positive, and, therefore, repulsive to the positive focus
of the major axis it has been approaching, but attractive to
the distant negative focus toward which it again swings.

Nerve Structures and Their Mental Action:

There can be but one interpretation of the action of mental
energies in the various processes of thinking, feeling and will­
ing; it is that a particular kind of energy in passing through
nerve-cell substances is changed somewhat by those sub­
stances, becomes another kind of an idea or feeling or purpose,
and then influences other nerve cells in a different way than
when the energy first moved the substances of its path. Thus
an idea is a given amount and kind of energy either stored
in a cell structure, or moving from one cell to another, and
being changed by the new substances it moves or is modified by.

Mental ability is dependent upon the clearness and intensity with which the structures of mentality can act, or the ease with which those structures can carry and change their own energies or the energies moving through them. The natural capability is measured by the fineness or the power of the nerve structures. Fine mental structures have the power to create fine bodily structures and clear modeling. These kinds of structures generally have the appearance of having been carefully carved.

Thus fine quality in an organism transforms energies into fine energies, these build or rebuild finer structures, and these express greater volumes of power. The play of the controlling forces on the body moulds its parts with greater particularity in contours and in relative size. The noticeable boundaries are more clearly moulded in high quality organisms as in faces of fine texture, than in those of lower grades. These free or noticeable boundaries are illustrated by the wings of the nose, the eyelids, and the corners of the mouth. These elements of quality and texture will be carefully considered in a future study.

\[\text{FIG. 182}\]
Distribution of Vocational Powers:

In Fig. 182-A we have a diagrammatic representation of the order of dominance of a teacher of languages, in which vocabulary and rhetoric are the origin of the vocation, object-form the essential, and imagination and Amity the supporting specifics. In this face Number is large enough to support the mentality in a musical career, but Reason and some of the Aspirations are in sympathy with the literary vocation. When the specific music is highly dominant it is generally very jealous of any other activity. The rhetorician requires Reason as the essential, with supporting object-form, imagination, intuition and Amity.

In Fig. 182-B the mental regions are associated by a dotted diagram line showing their order in mental relations, and the absence of the need of strong Will specifics.

Extending the Language vocation to the playwright, a new
order appears. From the dominant vocabulary and rhetoric the line runs to the essential imagination (Figs. 182-B and 182-C), then observation, synthesis, analysis, Amity and object-form. The playwright requires the ability to elaborate the dialogue of the play, to imagine the actions of the actors in a series of scenes, to visualize the scenic effects, to analyze and amass the strategy of the plot, the humor or tragedy that holds the audience to a new and consistent interpretation of some phase of life, and through object-form clearly to foresee all of the histrionic effects of the play, as factors in the mastery of his art. To make a "presentation" of his own play he would need to add a considerable number of Will specifics.

To illustrate this last possibility in the Language vocations we have chosen a Language industry, that of the master printer.

In Fig. 182-D we have diagramed the order of specifics of the master printer, and in Fig. 182-E have transferred the line of specifics to the face. The student will note the fact of relative sizes of the signs of the face, although the sizes are not wide in their ratios. The face is evenly balanced and the analysis line free from extremes.

Some students find it an advantage to trace the order of dominance by mentally diagraming the face, others turn to the mental ellipse when there is a complex problem of vocational choice, this aiding in forming a judgment. But in practice, the analytical table used complete or in part, or even mentally, is by far the clearest and most readily managed record for analysis and for study. This fact is clearly seen by comparing these diagrammatic figures with the table analysis (Fig. 182-F) of the master printer. In this table the percentages
stand out in relief; one does not need to carry in memory the ratios or proportions when once these have been established by the rating and comparison of the signs in the features. In fact, this line is at once an analysis and a portrait: the fullness of the upper temple region is shown by the dominant vocabulary and rhetoric; the forward projection of the end of the nose by observation at 98; its only moderate width by mental-focus at 90; its bluntness at the downward line of the end by scrutiny at only 78. The wide middle cheek bone is shown by vigilance at 97, the slighter lesser region just
below by utility at 96; the fairly large wing of the nose by imagination and skilfulness at 95; the fullness of the lower temple region just back of the "orbital eminence" by calculation at 94; the medium full foothill of the nose at propriety and frugality; the firmly set mandible at perseverance and firmness; and the full average crest of the nose at protection 90.

The rest of the line of analysis gives the portrait of the rest of the face. Noting the triangle specifics in the face requires but a few minutes. The evenness and the number of these, with their wide distribution, is shown by the diagram of the mental organism. The highest three specifics are in the Intellect, the next two are in the Will, followed by three in the Intellect, and then the line of prominence returns to the Will at propriety, frugality, perseverance, firmness and protection. The parts of the Intellect are represented in the temple and end of the nose; the parts of the Will are represented in the cheek, mandible and bridge of the nose. If we had chosen a master vocation in which there was little mechanical danger or necessity to watch the elements of material...

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**Table: Intellectual Elements**

<table>
<thead>
<tr>
<th>Intellectual Elements</th>
<th>Will or Volitional Executive Elements</th>
<th>Social</th>
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<tr>
<td>Art</td>
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<td>Number</td>
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<td>Attention</td>
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<td>Memory</td>
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<td>Language</td>
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<td>Laudation</td>
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<td>Inspiration</td>
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<td>Amity</td>
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<td>Reform</td>
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<td>Appetite</td>
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**Diagram:**

![Diagram of the mental organism](image-url)
waste, the vigilance might be much lower; if careful calculations were less necessary, calculation could be reduced to a place below the supporting line or need; if commercial vision or changes in manufactured products were less important, imagination and skilfulness might be reduced to a much lower place. In any of these conditions a marked change in the succession of power would follow.

These examples of the Language vocations illustrates the fact of changing complexity in the mental part of vocations. It may be just as difficult to teach languages as it is to run a printing industry; but the distribution of required mental abilities is far from being as widely ranged, and the "mental picture" of the vocation is much less complex, just as, in the practice of medicine, the "clinical picture" of one disease is much less complex or difficult to form than is another, especially where "differential diagnosis" enters into the problem.

Take this same face 182 E: suppose that before choosing a vocation he had discovered an interest in languages or literature and had prepared for the vocation of teaching language and finally started in that profession. So far as the Language ability was concerned he would have succeeded; but very soon the executive faculties, having nothing to do that satisfied them would have made him irritable, uneasy, dissatisfied, and, possibly blaming the conditions, the vicinity, the patronage, or any one of a hundred wrong reasons, he would have changed again and again to hardly better vocational relations, without having found the source of his trouble.

The counselor, seeing at a glance the executive factors and the mental dominant equipment, would have thrown him into the vocational field where the potential and active specifics of the Will could act intensely and satisfiedly. As a master printer, the oversight of the composition, proofreading, make-up, presswork, the management of personnel, the study of costs, the purchase of materials, and the hundreds of surrounding executive acts, would furnish a burden of activities so wide and incessant as to fill any executive void that either time or opportunity could bring.

The personnel manager should clearly realize that some men are mentally and physically lazy and need stimulating; others are physically lazy but mentally alert, and are made irritable when not mentally intensive. This intensiveness may be satisfied by long and unvaried problems, routine repetitions, or other purely intellectual efforts. There are other men who are intemperate in their demands for quantity and
variety of mental activity. This last condition is particularly true of executive or creative mentalities; they dislike uniformity; they are then in the temper of a violinist with but one string on his instrument; it is interesting for a while, then gets monotonous, then irritating, then—goes into the corner with a bang.

The vocational counselor and the personnel manager can readily understand why the man should be fitted to his vocation. An overplus in variety of mental aptitudes is nearly as depressing to the individual as is a minus variety, although neither is as depressing as having the wrong abilities under pressure.

Several exacting facts made the analysis of vocations difficult, as is proved by the current texts on job analysis. Among these were the facts that vocations seldom reveal the order or even the lists of specifics required; that many actions, either mental or physical, are results of obscure combinations of mental specifics, and so required that the specifics and their order of prominence should be discovered through a discovery of the indexes in other vocations, and these specifics compared with the mental volumes of successful men in the vocation under question. Then this further difficulty was met with, as noted above, the dissatisfaction and failure of thousands of men who were apparently superior to the requirements of the vocation. The overplus in variety of abilities, and the higher than required quality in men with the right abilities but compelled to do low grade work, were two forms of deterrents not solvable by any other known form of test or examination than the Merton Method; nor are these solutions discoverable by personal inclination, or vocational history, either by the individual or by anyone else.

Take as an example the study of the Certified Public Accountant in the lesson on Reason and the Sciences. In the table of the Merton Method of Vocation Analysis—“Job Analysis”—Fig. 121, analysis is the dominant with judgment nearly as powerful. These are on the major vertical ellipse. Below is the essential calculation. The supporting object-form and individuality are on the internal ellipse; near Reason is the second supporting imagination. These are followed by the powerful firmness, perseverance and fortitude of Stability, the justice, honor and equity of Integrity, the intensity, utility and hardihood of Industry, and by secrecy of Caution, aggression and protection of Defense, and the propriety of Economy.
The Caution, Defense and Economy are in the major horizontal ellipse.

In the analysis of this vocation no antagonisms are noticeable as powerful obstructions, but the presence of the executive requirements as a necessity of the profession draws upon an exceedingly wide range of faculties. Reduce the powerful Stability and Industry and the vocational status falls to that of a non-executive firm accountant; reduce also the quantity of analysis and Construction to the ratio of simply supporting faculties of Number, and the vocational status drops to that of a good bookkeeper.

In the various vocations the essential and supporting faculties may be widely scattered over the mentality, dependent upon the nature of the vocational requirements. The topography of the face has first place and holds it through the practice of the vocational counselor’s profession. The vocational counselor will soon learn to see these relations in the signs of the face without much reference to the mental organic plan. Yet when climaxes of difficulties arise, as they do in every considerable vocation, the basic principles are the resort for solutions and answers.

Through the course the study of the faculty relations and interdependence is aided much by this present study, as are the vocational selections. Year after year these basic principles will be found adding to the certainty and expertness of the counselor. As the “high peak” of vocational ability travels around the circuit in the selection of a vocation to suit a particular individual, or to find an individual to fit a particular position, the faculty relations are the absolute determinants.

In each case some particular faculties must have the needed power, or there will be a record of failure. Many people demand encouragement or opportunity to do what they cannot possibly do well, or nearly as well as they can do other things. The counselor must know and stand his ground. He cannot tamper with the truth nor with his skillfulness, or he will go down, as he deserves, to failure. The counselor is assuring his client against great loss or toward great loss, and must realize the responsibility.

It will be true, however, that circumstances, as age, means, previous experience, education, family responsibility and many other less frequent causes may compel the selection of a second best or third best vocation. This can be determined by conference. Advice to the counselor concerning these phases will be given in a future study.
The student need not now go through an elaborate analysis of the mental requirements of the vocations, but should have in mind the main regional relations of the faculties and be able mentally to see the relations of dominance and support in his analysis of the individual mentality. The Merton Method of Vocation Analysis required an acute analysis of the facial regions and comparisons of these in a large number of successful and unsuccessful men in each vocation, along with a study of the work the men were actually doing, and of the mental processes needed to carry on the vocation. Many of the results of the analyses made are summed up in the vocations described in this course and in "How To Choose The Right Vocation."

It is often well to note the incentives to action in the person being analyzed. These may be personal or they may be social. The personal incentives range through the whole mentality, as the appetites, the aspirations, or the various ambitions, all of which will be treated under the Will faculties.

The vocational counselor will realize that the names of differential vocations are much less numerous than are the names of the occupations, or positions, growing out of the vocations. As an illustration of this fact, we have been able to differentiate about 1400 vocations, including the industries; but there are about 8000 occupations having names or compound names. In the textile and clothing industries there are fifty-six listed different kinds of tenders, sixteen kinds of cutters, many kinds of sewers, knitters, and in all, about six hundred occupations. Some of these are confined to the textile and clothing industries, others are duplicated in other industries; some are distinctive in specific ability ratios, others simply in the particular use of the same specifics or in the use of the same kind of information. Men using the same tools, say as carpenters, vary in the expertness of their work much more than in the specifics required; the same facts are true of many vocations, but the place of work, as mill carpenter, store carpenter, house carpenter, etc., is often listed as a vocational name, when in reality it is an occupational designation, its characteristics depending chiefly upon the place of work, character of the industry, of the specialized effort needed, of degree of experience required, or of the degree of fineness of quality of the individual that the grade of vocation demanded.
MERTON COURSE

VOCATIONAL COUNSELING

and

EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

BY

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Author of

"Descriptive Mentality" (1886), "How to Choose the Right Vocation,"


LESSON FOURTEEN

The Regional Influences and Products of Amity, Reform, and Sociability

New York

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by
HOLMES W. MERTON
In this study we shall treat of three faculties instead of one, because of the more general distribution of their action and effects, and because they do not create, in themselves, a large number of vocations, nor are the subfaculties so specifically active in their effects upon the vocational relations as are the great majority of Intellect and Will specifics.

The Regions and Products of Amity:

The facial region of Amity is in the middle of the upper lip, along its lower margin, extending slightly above the red tissues, and nearly a third of the length of the orifice of the mouth toward the corners. This is the region marked A in Fig. 183. It blends with Reform at its side. Its index depends upon two characteristics: its size in fullness is to be depended upon always, but there are conditions, due to its closely surrounding faculties, under which its expression may be an index of value, when its size is not large. This index is the mobility and evident aliveness of the region
when it is not full, because thin and small surrounding faculties make a full region hardly normal in contour. In such case the middle section has uncommon flexibility and expression, though its fullness is not great. If the lip has the appearance of being thin and drawn, tensed over the teeth, or, as one might liken it, a leathern expression, the index is small.

Generally the student can readily determine if there is a restriction of this sign by the surrounding faculties, and so rate it at its actual value.

The cerebral region is in the top-forehead above the region of Inspiration, and sometimes extends somewhat under the hairline, and this can be noted, since Amity, Reform and Sociability occupy the upper part of the forward one-third of the brain length. Amity, however, does not extend backward over the forehead to the regions of the Aspirations, but occupies the forward crest-position. And the student must depend upon the facial regions for all the signs, except Language and Memory, and except when making a comparison of the active with the potential ratios.

When the brain region is large and the facial region smaller, the facial faculty
sign can be raised by intensive action, sometimes within a year, sometimes only after a considerable time. When the facial region is somewhat larger than the apparent brain region, it is certain that the faculty has had prolonged intensive activity and that the mentality region has been unable to develop the cranial cavity fast enough to accommodate freely the change in cerebral mass to correspond with the increased local stress. The blended contours of the cranium do not admit of highly specific determination of local regions; particularly is this true of the parietal and occipital regions of the cranium and of the top forehead regions.

Occasionally variations of facial and cranial regions as great as fifteen per cent in difference are found. These differences are usually in the faces of youth in prematurity, but are sometimes found in adults. In many instances in our experience, by a change in vocation, or at the suggestion of intense cultivation, these variations were reduced to almost equality.

The subfaculty, or specific, signs of Amity running outward toward the corners of the mouth in the order given in the tables are, candor, kindness and mutuality. These blend very closely with each other, but are often very easily distinguished from each other, especially where there are marked differences in size.

The Influence of Large Amity:

When Amity is large, as seen in Fig. 186, it sustains friendships and fraternal interest, even at the expense of much personal advantage. It expresses itself by appreciation of others' work or of their personality; it creates liberality in dealing with the faults or failures of friends; it suggests encouragements
where there is despondence. In these, as in its other activities, Amity is free from selfishness and from the impulse of compensation. When Amity is large it often sustains strong friendships among those who differ widely in opinions and purposes.

In the individual Amity may be excessive as clearly as it may be deficient. It then may lead to over-sensitiveness, or to reserve from contest; it may trend toward loss of effort by overdoing for others, thus cultivating selfishness in others by indulgence; it may endure abuse or depreciation until there are depressions and melancholia from these causes. The wider field of activity will be taken up in our consideration of the whole group.

Small Amity:

When Amity is small, it is an indication of a lack of buoyant friendliness or of generous expression of congeniality, of the appreciation of kindly relations or of genial companionship. Small Amity or even below-moderate Amity is not apt to give one a disposition toward frankness or confidential attitudes, nor does it easily gain these from others.

The disposition created by small Amity, unless supported by large Sociability, is generally selfish, disposed to negligence in regard to other people's convenience or desires, and not inclined to put others at their ease.

Bluntness and harshness in manner and speech are inexcusable in even common social or industrial relations; these mental attitudes are frequent sources of vocational failure.

Amity is a counter indication to the expression of sarcasm which so many people are inclined to substitute for both wit and humor. Sarcasm is not an alternative for either, and is a very general source of disagreeableness and antagonism, arising from self-esteem, Aversion and Destruction.

Tentative Analysis of Amity:

Amity is the chief faculty from which arises the desire for cultivated associations, from which grow frankness and sincerity.

As one of the high region faculties of the Intellect it differs markedly from some of the other mental sources of companionship. Several of the Static faculties, as Patriotism, Reverence and Devotion, create the desire for companion-
In the instance of large Amity there seems to be a radiance of energy or a sensible expression of mental disposition that neutralizes all forms of antagonism; it aids in establishing good will both in matters of forbearance and toleration, and in matters of gratitude or of compassion wherever these can in themselves bring happiness.

In general, the world of industry is more clearly recognizing the benefits of what may be called the associations of good wills. Wherever these conditions largely prevail there is a greater return for effort, a greater accomplishment in proportion to the nervous wear and tear either of supervision or of productive labor.
It is being clearly recognized that antagonism, dislike, hate, distrust and social jealousy are vital poisons, that they consume vigor as well as enjoyment, and bring about states of destructive disposition. This statement is not a figure of speech; it is a statement of exact fact. Every man who has ever worked under a state of anger or hatred knows, if he compares results with his condition of fatigue, that anger and hatred, distrust or appreciable dislike, reduce his energy, his resistance and his ease of recuperation.

Amity and Integrity:

The relation of Amity to Integrity is often apparent in the dispositions of people who have both faculties large. The faculty of Amity and the influence of the Aspirations may not intervene in the exactions of the Will faculties where there is a belief that one is being treated unjustly, that advantage is being taken of one's good nature and generosity. The matter of confidence in industrial relations is more important now than in the past. Corporation ownership, agency management, and control by department heads have in them less of the elements of personal understanding and knowledge of relative values than where there was direct ownership and personal employment supervision.

Industrial relations based upon a salary compensation and interest as incentives and retainers are less confidential, less personal, less revelatory than they were in the older forms of copartnership, ownership management and more direct supervision. We are reiterating the fact that the employment manager must strive to take the place of this personal function, that he must represent in the minds of employees and employers the personal interest link in mentality that stands for the fact and attitude of a square deal, a personal security that the bargain is a just one, that the contract of employment, interest, loyalty and vocational security is not a one-sided affair, or a contract so nearly unilateral as to make sabotage, negligence, indifference, or shirking in any way justifiable in the mind's eye if not in fact.

The employee may not be blind to the advantages accruing to others from his work, nor on the other hand may he be able to realize the hazards of the enterprise of which he is a part; he may highly overestimate his importance and work as a part of the enterprise, or he may flounder along with only a desire to secure or keep a position. Some of these problems
of his mind are not here in question. But his confident satisfaction, his good will and earnestness of purpose, his fitness for his work and his enjoyment in it, are essences of his contract of employment and of his remuneration.

Questions of Amity, Reform and of vocational Sociability are much more important in the matter of their understanding, application and productive value than they are usually credited with being; not so much from the "service" standpoint, but from that of equable and equitable relations. The cultivation of and the comfort of working under equable relations is as important as the matter of equitable compensation. Where so much is dependent upon chance, upon narrow margins of profit or of advantage, upon orderly procedure and the certainty of accomplishment, the even tempered mutual progress of work being done is a distinguishing fact that should not escape the attention and efforts of the counselor, employer or employee.

Another reason why Amity and the Aspirations are entering into the industrial world as a power much greater than ever before, is the fact that these are powerful polar faculties to the selfish interests and impulses of the lower Will faculties of the individual. The presence of any force of reciprocity that can play harmoniously among sometimes conflicting interests is a force to be recognized and encouraged.

The Regions and Products of Reform:

Reform is a mutual faculty with Amity, but it is more directly under the in-
fluence of Reason than is Amity, just as Amity is more in sympathy with intuition. Its region is next outward to Amity in the upper lip, and has seldom as large an index for an equally large faculty, since the upper lip tapers normally toward the corners of the mouth. This is shown in Fig. 183, a, at R, and a smaller index in the same region of b.

In Fig. 186, a and b, the faculty of Reform is very high and the tact and conservation high, the specific progress being lower, and the lip diminishing rapidly toward the outer part of its middle third on each side. These are illustrations of the rapid diminution of the features from high subfaculties to lower ones, or, as often the case, of rising signs in the subfaculties of a single faculty. The specifics thus stand out with differences quite as marked as are the whole faculty regions. These differences are readily distinguished in the mentality and actions of individuals, and constantly prove their truth.

The differences in the man with only moderately intense friendship, but with much social tact, are almost common experience; the man with high friendship but small policy or sense of graceful action is often seen. Both are readily distinguished by this art.

In Fig. 188 a, Reform is nearly as large as Amity, and in b both signs are very small. In this last illustration b, the mentality must depend upon the Aspirations and upon Reason, Laudation, observation and intuition for its elements of reform.

Tentative Analysis of Reform:

Reform, combined with imagination, is the intellectual side of commercial vision, just as utility of Industry is the dynamic side of commercial vision, or of what in practice becomes industrial vision and fore-
sight, all of which we shall properly treat under the executive faculties.

The relation of Reform to Reason, since it is social and in a manner interdependent upon conditions, gives Reform, as its subfaculties tact, conservation and progress imply, a more prosaic, more prophetic, and more reconstructive nature than Amity or Sociability create.

Its incentives are toward fundamental relations, the betterment of the state of society, the progress of the community, the intellectual status of people who are in relations of intercommunication.

Reforms are first mental before they are physical, before they are changed in fact. As such mental fact they must have the quality of a desire for change, the quality of advance or of benefit to some one, in a manner over and beyond the condition or thing that exists. Utility creates changes, some suggested as repetitions, some as new impulses or purposes, and some of them as due to exigencies. But Reform takes cognizance of these or of social concepts and urges rapidity in betterment.

Reform and Decadence:

The effect of large Reform upon the disuse of old methods or old machinery is important and raises the question of renewal of methods or of plant machinery. Men with small Reform and large Economy are very loth to make changes in either the processes employed in the mental side of their industries, or in replacing old, obsolete, wornout, or slow working machinery. Such men are usually driven into making changes by their competitors; they are brought to a standstill by superior methods or machinery.

From the point of radical departure, the executive should study the elements of his faculties of Reform and of the Will that have a bearing upon changing conditions in both labor relations and the processes of production, transportation and other industrial factors. The various manufacturers and industries that have to do with greater efficacy in production, the experts in engineering and management, in salesmanship and problems of distribution, may be ubiquitous in their urgency for change, but can only make progress when opportunity is given and when there is an audience. To avoid extremes in either radical or ultra conservative actions, but to attempt to be aware of the possibilities of every probable utility, to sort the good from the bad, replace the old by the
new, make venture in safe amounts, all under the exercise of reason and industrial sagacity, seems to be the best formula for progressive enterprise.

**Small Reform:**

A large **Reform** strongly inclines a man toward an interest in discoveries and in new concepts of life and human advance; so, adversely, small **Reform** inclines one toward indifference to change or general betterment.

Small **Reform** has a distinctive vocational aspect in allowing a man to be indifferent or negligent to all kinds of progressive effort in his own work, or in the improvement of conditions of life and production around him. It is not merely in its lack of control of appetites, but in its carelessness toward progressive views and self-improvement that small **Reform** fails in the broad outlook that raises mankind as a whole. New methods of thought and action are essential to individual progress. When a man ceases to care for these, to take an interest in his own progress, he is at the end of his vocational rope, at the end of his promotions, due to earned gain. A man should be charged to change his disposition when this group of faculties is below the medium of his mental range.

**A Composite Factor:**

A factor of considerable importance to the vocational coun-
Amity, Reform and Sociability

Amity, Reform and Sociability

Selor is brought into prominence in relation to the faculties specifically considered in this lecture. This factor is shifting in its nature. It is generally closely related to the dominant faculty, although often it is the result of a combination of strong faculties that may determine the use of one's success rather than the nature of one's success. In one of the early lectures was the following statement: "The Intellect is formal and receives information from all of the senses, and organizes that information into directive knowledge and intentional choice." "Intentional choice" is the factor referred to above. It might be paraphrased as the "most constant intention of the individual," or as the process of making acceptable choice of one's life accomplishments. Again, in an earlier lecture we stated the rule that "the dominance of power is usually the place of the dominance of vocational ability." To this statement we can now add, the dominance of power usually works with the dominant intentional and expressive choice.

This aim, or constant intention, or dominant desire as to what one shall do with the product of one's work, frequently grows out of powerful groups of faculties that support the dominant instead of growing out of the dominant.

To make this proposition clear and to point out one of the highest forms of constant intention, we have grouped the faces of Fig. 189. On this figure are shown three particular phases of constant intention.

Amity and Reform Not Specifically Directed:

Face a. Fig. 189, has large Amity; the upper lip is full and has some intensity. Reform, slightly outward from Amity, is not so large as Amity. The same proportion of power between the two is shown in the rather narrow and high region of the top-forehead. The indented forehead at Attention, Memory, and Inspiration restricts the volume of these faculties to about 76. The end of the nose is relatively short, fairly thin, smoothly carved, but not highly modeled. There is evidence of lack of acute Attention and of lack of sensitive intuition.

The septum of the nose responds to the restricted region of Reason in the forehead. From that region the forehead broadens toward Construction; consequently, the nose gains much in the upper margin of the alae, where imagination and skilfulness are indicated.
This topographic line of analysis indicates a mentality that would be dissatisfied in any of the numerous vocations arising from the perceptive or retentive faculties. In following one of those vocations the mentality would not work through its dominant, but would be forced to find its chief expression through its secondary or its supporting faculties. This would rob one's vocational activity of all spontaneity, and would, moreover, require that one should have a higher quality in order to succeed in such a vocation than it would be necessary for a person to have whose dominant was one of the perceptive or the retentive faculties.

A woman having this order of mentality often drifts, because of her Sociability and her generally hopeful attitude—due to well balanced self-control and good vitality—and her congenial love of children, into primary school teaching, a vocation where the greatest success demands large Language, Form, Attention, and considerable imagination.

Good Constant Intention May Be Futile:

Face a has the constant intention toward kindness and mutuality, but this intention is not clearly defined; it has no recognizable object, no aim in view, and it is not expressed in any definite direction. This face has no strong range of directive or executive faculties to enforce a life work of activity toward a specific field of effort. Many genuinely good and well-intentioned persons whose accomplishments are almost negligible quantities have mentalities of this order. It is the duty of the vocational counselor to stimulate any one having this kind of a mentality to make the greatest possible effort to intensify his or her directive activities.

Social Betterment Intention:

In face b there is directed constant intention toward organized welfare. This face is at once dynamic and reflective to a marked degree, denoting a highly balanced mentality. Amity, Reform, Sociability, and the Aspirations are powerful faculties superimposed upon an otherwise high line of abilities.

The long nose has sufficient Defense to push forward any program in which the mentality is interested. The executive faculties, seen in the cheek and in the mandible, are powerful enough to take up industrial management and intensive efforts. Notwithstanding these facts, the ethical and philan-
thropic faculties predominate in directing the line of activity and of energy distribution.

In labeling this face as that of a dynamic welfare worker, we find that the mentality is that of an organizer of men rather than that of an organizer of industries. This is determined largely by the shallow ridge from the cheek to the nose—the moderate Economy shown in the thinness of the nasal base—and by the presence of high Integrity as reinforcement of the dominating regions. The choice between the management of men and the management of industries as shown in this face is rather a matter of ethics and of social propensities than of contrast between intellectual and executive faculties.

**Constant Intention—Universal Welfare:**

Face c has the cast of many of the great Roman faces of the middle period. It has the powerful Roman nose, the highly modeled cheek, the alert eyes, and the mobile mouth—all forming an exceedingly interesting and attractive face. The line of analysis is uneven, as one would expect the mental indexes to be of a face that is exceptionally long, inclined to narrowness rather than to breadth, and which has a remarkable nasal angle.

The particular regions of this study—Amity, Reform and Sociability—are not predominant in this face. All the upper lip faculties are strong, but no one of them is the predominant faculty of the face. Amity, Reform and Sociability in the colored part of the lip all have noticeable size and marked intensity. Faith, Love and Hope are still stronger. These six mutual faculties, combined, are powerful enough to hold their sway in the mentality and to establish their constant intention against the influence of all other faculties. They are, moreover, well supported by Inspiration and Reason.

**A Half Century's Constant Intention:**

In 1824 David Naismith of Glasgow gathered a group of people, who were not particularly religious, for the study of morals and the study of the established church. The society spread somewhat as an adjunct of the church.

Later, George Williams, face c, a cotton merchant in London, in the year 1844 gathered from among his employees a group of a dozen or so for the purpose of mutual study and mutual welfare, the only condition being that the members
should hold some form of religious belief and desire to lead a moral life.

George Williams, as his face proves, was an aggressive man. He crowded his ideas of a morally intentioned, locally governed, socially free, non-sectarian religious association over the world in the movement which grew into the Young Men's Christian Association. It started in America before the Rebellion. During the war time it went down almost out of sight, but that royal fellow, Robert McBurney, Secretary of the New York Association from 1862 until 1898, urged forward the social, the educational and the physical development phases so sturdily that the American societies outran in numbers the parent societies. George Williams and Robert McBurney were fine specimens of the possessors of a constant intention of the higher order, as many men are examples of the constant intention of the lower orders, of selfish efforts.

Miss Robarts and Lady Kinnaird, independently of each other, started in 1855 the societies which in 1877 consolidated as the Young Women's Christian Association.

A rational intention to accomplish something of a serious and unselfish nature is a stimulant to vocational success. Such an intention is an index of the possibilities of steady effort toward mutual advantage and executive growth. It furnishes a basis of confidence that is just as fundamental as is that of a confidence based upon Integrity.

Specific Location of Sociability:

The regional influences of Sociability are in the forehead above Construction and in the lower margin of the upper lip from the corner of the mouth reaching fully one-third to-
ward the midline of the lip. The region rises somewhat above
the red surface of the lip, and is shown by the fullness there
in the same manner as Amity and Reform are shown, with the
latter of which it blends.

The location of the region of Sociability somewhat restricts
the physical size of the sign, but its relative size can be clearly
read, though as a whole the region is seldom as large actually
as are the regions of the freer signs around it. When very
large it may puff the lip out somewhat, or may curve it down­
ward in an intensive bow shape, as seen in Fig. 190 b (Be­
ranger).

What Sociability Is and Is Not:

Loquacity or the habit of idle or egotistic talking must
not be mistaken for indications of large Sociability. The
expression of Sociability is the mental attitude of urbanity,
the tendency to constant cheerfulness, to mirth and con­
geniality. A man may have large Sociability and not be
much of a talker. His social habit may be to draw out the
opinions of others and to stimulate their enthusiasm and to
make people feel at good advantage. To do so is good busi­
ness psychology.

Large Sociability makes one considerate, an agreeable com­
panion, and a "good mixer." While it often gives spontane­
ousness in expression, it also gives one ready discernment—
tactfulness—regarding what not to say in order to avoid of­
fense or wounded feelings. In association with intuition and
observation it gives keen perception of what is the fit, right,
and kind thing to say or to do in most phases of social
commerce. It makes one a good listener and makes one
quickly responsive to the wit and humor sallies of others.

Large Sociability leads to a sympathetic but not intensive
interest in the welfare of others—in their ambitions, desires,
difficulties, in their business, family, and social affairs,—to a
ready appreciation of their efforts, and to genuine and un­
stinted praise of their accomplishments. It leads one, almost
unconsciously, to shape one's habits and personal expression
toward the winning of the regard of others. It is the social
urge of this faculty, coupled with Dignity and Laudation, that
frequently holds one to careful consideration of one's personal
appearance even under discouraging and stressful conditions.
In this it becomes a necessary supporting vocational faculty
for any dominant faculty.
In scores of ways Sociability incites to actions that make for good fellowship and that are helpful in gaining business, friendship and professional advancement. Good humor, appreciation, and friendliness tend toward vocational success in that they make for general good feeling and for health, and that they often lessen tense situations.

Sociability, even in the realm of small affairs, does not need to fall to the level of old women’s gossip, though even that is much preferable to the cynicism and hypercriticism so commonly indulged in by people who have a dearth of good humor or a scant fund of originality. Sociability has its place even in large affairs, since it leads to understanding and good temper, furnishes its quota of enjoyment, and often establishes lasting friendships and mutual recognition of meritable qualities in others.

The Reciprocity of Cultured Relations:

The presence of fairly large Amity, Reform and Sociability is the basis of reciprocity in the strenuous phases of business life, especially in those industrial relations that call for what is often spoken of as personality. Since the main foundation of cultured relationships is the presence in the individual of the qualities of intellectual dependableness, these high Culture faculties do more to sustain the attitude of mutuality and dependableness than any other of the mental groups; they stimulate dynamic actions arising in Dignity and Stability; they arouse Integrity and Industry to the responsibility of making the most of life and opportunity.

In the matter of habits the Culture group is directive toward the most agreeable kind, and there are uses for agreeable habits and their easy flow of good manners.
In daily life the good humor of Amity and of Sociability has a marked effect upon the health of the individual, upon the amount of endurance he can get out of a given amount of nutritive power, and upon his forces of resistance against adversative conditions and social troubles.

Many conditions of nervous prostration and mental breakdowns result from the depressions of Amity and Sociability, especially when the Aspirations are only moderately large and when the Defension or the Impulsion group is below the medium range of the faculties.

The vocational counselor and the employment manager, both in individual practice and in the control of his employee forces, should make careful note of these conditions—the atmosphere of his personnel—in order to keep up the enthusiasm, courage, and the firm spirit of those with whom he is dealing. Nothing so depresses the mental and industrial atmosphere of the business as does the appearance of vital and social indifference on the part of the elements of executive control. On the other hand, those who engage in employment for compensation have within their own purviews the self-care and the responsibility of keeping up the spirit of enthusiasm in their work and agreeableness in their manner. These are part of their contract, implied by acceptance of their positions and their tasks, due themselves as health keeping and social beings. This obligation cannot be offset by the intention of the employer to provide such conjunctive benefits as the individual worker cannot himself so economically secure.

Social morbidity in employment relations depresses accomplishment as seriously as does malnutrition; and no one, acting as if friendship, reciprocity and kindly social relations were absent from his mentality, has a right to engage in employment where others must pay the penalty of his moroseness and angularity.

The vocational counselor is remiss when he neglects to direct attention to this state of mind or mental attitude in his subject, and where it is a part of the employment policy it is equally pertinent to base the fact of welfare activities upon the grounds of economic saving to the employee. If all employers carry out these social and amicable provisions to the greatest possible extent, the value of these provisions as employment regulators or conservators of employment turnover will be neutralized, and the contract of employment will again revert to the wages basis.
Amity, Reform, and Sociability Moderately Large:

When this whole function is moderately large, as shown in Fig. 188 face a, these faculties are apt to act most normally to meet the "happy medium" in the real sense of the term. This is particularly so when the regions (Aspirations) within the parentheses of the mouth are full and well balanced.

There are close relations between the Aspirations and the friendship faculties, though their basis of action is different and their results are different in effect upon the individual, as is clearly demonstrated in the instances of the religious hermit and many forms of religious zealotry.

Thus a man may have great enthusiasm in religious matters, even in social reform movements where his idea of morals enters into the problem, and yet have but little intensive friendship or companionship interests.

We have an illustration of this last general disposition in Fig. 188 face b. In this face there is great suppression of Amity and of Reform. Kindness, congeniality, and the intensity of personal companionship are small in volume; the signs indicate a lack of wide personal interest in others, and but narrow or few intensive friendships, to which he may hold tenaciously. If the analysis stopped here it would fall short of justice to his mentality. It does stop in this particular. But other factors enter into the equation, not as Amity or Sociability, but as the much more impersonal and generalized feelings, as parts of the emotions and affections, of the
faculties of Faith, Love and Hope, summed up as the Aspirations. The indexes of these are all fairly high in this face, indexes situated above and slightly outward from Reform and Sociability. The vocational counselor must not neglect these when considering the attitude of the individual toward problems of welfare and social procedure, when these are separated from the facts of a personal friendship or of personal social relations.

The exceedingly good fellow personally may be a hard taskmaster in impersonal relations, as an employer or judge or business associate. Sociability large and Aspirations small with only moderate justice may make for this disposition.

Amity, Reform and Sociability Small:

If large Sociability inclines one toward entertaining manners, sense of mirth and elegance, clear and vivid expression, small Sociability trends toward the opposite.

The absence of praise and compliment when deserved, the disposition toward avoiding companionship and fraternal interest, the cold calculation of benefits weighed against real social attitudes, are often found, and the relative loss to the individual noted. It does not follow that the individual with such a disposition realizes either the state of mind or the loss. If he is given to trenchant speech and abrupt expression in his manner, the other party is looked upon as being the cause.

Usually in this kind of mentality there is a blunt indifference coupled with personal cynicism in conversation, frequently with egotism and uncontrolled temper.

When Amity and the Aspirations are large, they trend toward modifying the above characteristics and disposition.

Amity is much broader in its fundamental good fellowship than is Sociability. If Amity is large and the Aspirations small, with moderate justice, the taskmaster may be less severe in his disposition.

When Amity and Reform are small, and Sociability and the Aspirations only moderate, as in Fig. 190, face a, there is certain to be a rather severe and critical disposition. Many people have the straight lips that are called severe and unemotional. This judgment, however, must be cautiously given, since the region above the margin of the mucous membrane of the lip, in the space As, may be full and the Aspirations powerful enough to modulate the character into impersonal generosity, but generally of a cold and unsympathetic nature, sometimes carried into bigotry.
In face b, all of these regions are moderately full, and are evidently untensed by the muscles of the face that pull upon the orbicular muscle of the mouth. "So poor a man has rarely been so rich in good actions; he was always ready to receive help from his friends when he was in need, and always forward to help others."

In this face the regions, marked as in the face above, are full and expressive, and add to the Culture group great serenity, conscientiousness and emotions of good will.

Amity and Sociability in Vocational Failure:

It is a notable fact that thousands of people fail vocationally solely through the deficiency of reasonably active faculties of the Culture group. In these instances the deficiencies often outweigh superior vocational ability and culture. Sometimes a disagreeable disposition prevents associates from giving assistance or responding to the comities or to the forebearance the occasion warrants. The trouble may be in a large measure a lack of animation or geniality, or it may arise from indifference and lack of responsiveness to vocational and working requirements.

In many instances the fact of these depreciated or low volume faculties is not realized by the individual. As the miser usually thinks himself the most liberal man in his town, so the unsociable man is generally certain that he is ex-
tremely social and accommodating, and that others are the origin of his disagreeableness.

**Optimism and Congeniality:**

Optimism of the rational kind arises from several mental sources, and its quality varies with its source. Very strong **Amity**, or **Sociability**, or Aspirations, or **Industry** may be the chief source, with support from some of the other faculties. This disposition adds much to the enjoyment of many of the vocations; in some of the more variable vocations, as salesmanship, medicine, industrial engineering and nursing, optimism is a necessity to success. It furnishes the element of recovery from the "downs," it neutralizes all kinds of disappointments and depressing conditions. Various forms of superintendence have in them considerable demands on good temper which a rational disposition of optimism and congeniality can aid in maintaining.

In a crowd of salesmen and sales managers very few men will be found with thin upper lips, possibly one in a hundred, provided that one has a large group of Aspirations—hopefulness, confidence, serenity, and generosity of spirit.

In Fig. 193 we have the mouths of four extremely successful sales executives and managers. The whole parenthesis region is full and well modeled. Face a has the Aspirations high along with Amity and moderate Sociability; all of the various forms of friendship, enthusiasm, mirth and serenity are combined with compliment, firmness and confidence. Face b has many of the indexes of face a, but Sociability is somewhat larger. In face c Sociability and serenity are appreciably smaller than in faces a and b, and in d Amity is noticeably larger. These faces are chosen from among over two thousand successful sales-
men and sales executives as representing closely the ratios of this phase of mentality of practically ninety-nine per cent of the faces. Their dominants varied greatly, as did the lines of their industries, but the essentials and supporting faculties ran closely to the following succession, namely: observation, vocabulary, object-form, imagination, synthesis, Amity, Sociability, the Aspirations. The sales executive needs in addition to the above the high range of operative executive faculties to be studied in later lessons.

The employment manager and the welfare worker as well as the more strictly religious worker need the Culture and Aspiration groups highly rated, not perhaps as dominants, but closely ranging with the dominant. An extended observation of workers in these fields will at once prove this true and also the fact that those who are successful have this range of mentality.

Some successful employment managers and production managers are not so pronounced in these indexes as are the sales managers or welfare workers, their tasks being more executive in nature and critical from a technical viewpoint. In general the same conditions are found true in the case of controllers, where there are often found indexes of severity, unyielding firmness, and the attitude of resistance growing out of a persistently defensive and precautionary disposition, and out of situations where in heavy transactions personal inclination might prejudice judgment.

In Fig. 194, the face of a powerful controller, the emotions, the friendship faculties and the Aspirations are moderately strong when compared with the smaller faculties of the face, but are so powerfully dominated by the executive faculties that they are always held in abeyance. The whole face seems proportioned to demand unimpeachable facts and to resist any form of hy-
poetical enthusiastic venture. Blandishments and blue sky balloons have as much chance of success in gaining the attention of this mentality as the desert of Sahara has of becoming a forest.

Qualities of Mobility and Expression:

The qualities of mobility and expression add somewhat to the regional power in the upper lip, but cannot make amends for thin, canvasslike signs. Sometimes the forward overset of the upper teeth is great enough to thin down a fairly full integumentary region, a fact which the vocational counselor can readily see and from which equate the signs at their actual power. The fact that the superior maxilla projects from other causes and actually modifies the upper parenthesis regions can be taken into consideration, but too much allowance either way must not be made because of this fact of maxillary projection.

Fig. 195 treats in outline the regional influences of Amity and Reform.

Face a gives the regions in dotted lines at the top of the forehead and in the upper lip. In this face these faculties are extremely large and dominant, with Reason second.

Face b is a marked contrast to face a in the size of Amity and Reform. The forehead is comparatively low and turns back abruptly. The central region of the upper lip is thin, somewhat drawn and flat. In this face friendship, kindness and progress would always yield to the demands of personal advantage, and become subject to the contemplative values they could be put to by the other faculties.

In face c Amity and Reform are seen to be moderate in size, but the dominance of the bridge of the nose and of the powerful mandible makes the various phases of friendship secondary to the executive purposes of the mentality.

Face d is a peculiar combination of moderate faculties of the intellect with dominance over the whole intellect resting in the faculties that govern the dogmatically heavy mandible and the cheek regions. The character is evidently crafty, taciturn, and hard; it possesses elements of unrestrained ruthlessness the origins of which will be treated in the next part.

Face e has average Amity, but Reform is small. It will cultivate useful friendships but will demand that social and
political affairs stand as they are. Nearly all of the surrounding regions are as strong or stronger than Amity; the face is powerful, broad, and balanced.

Face f has relatively extreme Amity and Reform, but the outline of the nose indicates lack of power in several important regions.

In Fig. 196 the lip margins are not large, but have deep fullness in all of those faculties we are considering, and considerable mobility and expressiveness.

This is the face of a poet, the liaison officer of English and American authors in the establishment of greater mutuality in interests. The long full forehead, the highly carved nose, the modeled mouth and cheek, the highly organized chin contours, tell a story of careful thinking, extensive and facile vocabulary, intense and selected friendship, dynamic force, and clear social vision.

Fig. 197 has an intensive interest in human social welfare, and Fig. 198 has an intensive interest in the financial and economic order of affairs, but not in these from the viewpoint of ethics or the Aspirations. This difference is revealed in the
regions we have been studying in this lesson, and in the Aspirations which will be treated in a later study. It will be noted that the faces are much alike except in the upper lip and the upper regions of the forehead. In Fig. 197 by both the forehead region and the lip region the intensive interest is shown to be that of *Amity and Reform* in matters of personality, in individuals, rather than in masses of people or their general conditions. The latter interest is shown by the Aspirations and Economy of Fig. 198; there the forehead region is not so long nor the margin of the upper lip so full or expressive.

**Orderliness and Greatness:**

At this part of our studies, in closing the treatment of the specifics of the intellect, we may well devote a little time to the problem of the orderliness of the mentality.

There are few great historical faces that have not had in them parts of features that have been extreme in size, that have not widely departed in some regions from what may be called an average feature, or Harmonic face. But the most striking fact in connection with these faces is that they still preserved the quality of orderliness; there was the expression of mental power in what seemed to be an intentional way. The departure from the highly equalized face had the indexes of definite and orderly power, apparent at once to the analyst by the Merton Method. There are many of these faces throughout the text, and we need not illustrate this fact in its relation to mentality and accomplishment.

**Disorderliness and Mediocrity:**

On the contrary, however, when we look for disorder in a
face, we find we must omit the faces of those who have been in some way distinguished by their work.

This fact compels us to resort to faces, as illustrations of disorderliness, of such mediocre or common accomplishments as not otherwise to be worthy as exponents of any vocation.

In Fig. 199, face a, we have considerable disorder, but of such a ratio that it gives us the possibility of an iron worker or coal digger of the most common order. Yet this face, balanced by the dominant regions of the upper forehead, has possibilities of normal citizenship, of a somewhat unbalanced simple culture.

Face b is that of a fairly advanced Eskimo; it is disorderly and mentally ill proportioned. The broad flat bridge of the nose, the loose, flabby mouth, the flat and unmodeled cheeks, the purposeless chin, the low flat and untensed eyelids make up a combination of features that are disorderly, because under disorderly control, that no one can imagine could ever be made capable of an average human intelligence, not to mention higher forms of accomplishments.

In face c there is another kind of disorder, but it, too, is the disorder of uncultured and untensed mentality.

In face d we see an orderly face, but there are lacking the evidences of culture or of intense application. The ratios and apparent quality of the faculties of this mentality are subject to considerable culture and development. It is quite harmonic, though the nose and lips lack quality and clear modeling.

Face e of a South African Bushman seems almost the limit of low humanity and of low disorder in mentality. He lives a nomadic life, can count hardly beyond two, has the animal's sagacity in hunting, but has learned to use poisons on his arrows. No amount of educational effort on the part of others has ever succeeded in giving a common amount of intelligence to these tribes, except possibly where there has been a long ancestral mixture with the Hottentot and others of higher grade. Yet what there is of mentality, and the ratios of these faces—their very disorderly proportions—follow the regional locations as specifically as do the features of the most cultured men. The irrational proportions, the low grade quality, the cramped and undeveloped high planes of mentality, are the prime evidences of the kinds of ability and the grades of life they lead, individually and as parts of the race.
In Fig. 200 we see an orderly face, but the faculties vary so extremely that the mentality has great eccentricity. The aggressive, hypercritical nose almost devoid of imagination, the extreme upper lip regions above the orifice of the mouth, the bulging mid-forehead region, the massive angle of the mandible, all show the extremes compared with the sidehead, the lower regions of the mouth and the frontal regions of the chin and mandible. The upper cheek beneath the eyes and the orbicular regions of the malar bone seem to fall away from the eye sockets, leaving this part of the face unsupported and indecisive in the elements of Caution, and Economy.

These partly explain why he should be a philosopher of his times, a Dominican, an acceptor of Copernicus, a student of the Renaissance, and finally the searcher in nature for some secure basis for unity and its expression through nature to man in forms of evident truth.
FIG. 200-A
A
RECONSIDERATION
of
THE REGIONAL INFLUENCES AND PRODUCTS OF AMITY, REFORM AND SOCIABILITY
through
QUESTIONS AND ANSWERS.

Question: Where are located the regional influences of Amity, Reform and Sociability?

Answer: In the margin of the upper lip, including the dry mucous membranes and the margin above it. Amity is on each side of the central line and Reform and Sociability in that order toward the corner of the mouth. Each faculty occupies about one-third of the distance, Amity having a little less than one-third and Sociability a little more.

Question: What are the indications of capability of these faculties?

Answer: Chiefly the comparative sizes of the regions, but sometimes the expression and mobility of the lip must be equated with its size; this is due to the natural facts of these locations, their mobility and the blended regions surrounding them.

Question: What advice should the vocational counselor give a client or employee who has less than average Amity and Sociability?

Answer: He should advise him to cultivate the expressions of these faculties as described in this lesson. He should point out the fact that these dispositions lead to mutual assistance and increased enjoyment in vocational effort; that good-humor and kindliness are mental and nervous tonics; that phases of fundamental agreeableness are elements of personality that attract because they radiate their own kinds of energy, sensible to many people as a kind of personal atmosphere. As kisses and business go by favor, both are enhanced by good intentions.
MERTON COURSE

VOCATIONAL COUNSELING
and
EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

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LESSON FIFTEEN
The Historical Growth of Man

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If we study the history of the race and of its ideas, feelings and purposes we find that the progress of the race from its historical infancy to the present time has not been an erratic succession of incidents and fortuitous circumstances; we find that the succession of historical phases has been one of orderly events under the control of universal laws, and that these universal laws were expressed, in so far as they could be, in each stage by the mental nature of man.

This procession was a progression governing man's ascent, mentally and physically, by the natural necessity of the order of his growth and development.

Function and Dominant Power:

This order of growth and development required that one function after another should arise to dominant power. Each new function added the product of its own dominance to the products of the mental and physical past. The course of mental growth was upward; it began in simple abilities and grew toward complex abilities. It began in the appetites and other sensations, and finally reached reflective culture and the high ambitions.

The regions of mental dominance followed the paths of mental growth from infancy to late maturity, unless that dominance stopped at some function along the path, and function succeeded function as a mental necessity.

Progress and Cessation:

The most remarkable fact of the whole history of mankind is that in each branch of the race, whether arising in the his-
torical mists, or through the conquests of conquerors and their hordes, its rise to grandeur came to a comparatively brief climax. In all of this change it reached its mental peerage in the new dominating faculties, then, when it might have been expected to go on to the full maturity of complete mentality, it began a recession, sank back, though still appreciably above its predecessors, and for centuries has continued to bear its hardly changeable mental fruit. Here and there the great men of the branch and age stood out as formulators of the accomplishments of the branch. The mass, satisfied with, or unable to create newer advances, stood almost level with their mental range, until in some other root stock the awakening of higher range powers brought a world neighbor with products and discoveries they might imitate but could not equal or excel.

Grades of the Living and the Dead:

We still have these various functions of mentality dominant in living segments of the race. The progress and the products of these functions of mentality in the various parts of the race living to-day agree very nearly with the historical progress and products of the stages of the racial growth of the past. This is added evidence that we are not dealing with hypotheses, but with organic facts.

Furthermore, we find that the dominant characteristics of the historical ages and their development agree with the dominant characteristics in the growth of the individual of to-day from his infancy to his early maturity. The difference is in swiftness of advance rather than in the course and disposition,

Historical Ages and Faces:

Furthermore, we find in these historical ages' growth that the faces of the branches under consideration changed, and that the cranial vaults changed; and had we the means to study the facts, we should doubtless find that the relative structures of the bodies of the masses of individuals also changed. What has befuddled the anthropologists was the fact that these changes were local regional—facial and bodily—changes, and not, as their generalized conceptions seemed to necessitate, mass changes in accordance with the old fashioned ideas of the pumpkin-headed dwarf and the apple-headed giant. They have counted the scales on the sides of the fishes, but shifting ounces of brains have made but little difference
to their philosophy. We are still regaled with the "Dark Continents of the Brain."

If we keep in mind the fact that the individual is governed by natural laws, then we must realize that the life of the individual is a miniature of the life of the race or of such segments as run the course of the individual. This is true because the race, like the individual, is under the control of the same natural laws. Whatever mental function at any period is dominant as the Will or Intellect of the majority of power, will govern the form of Intellectual, of Industrial, and of Social action; each change in such government is the outgrowth of a group of three faculties acting as a group in functional activities. The infancy, childhood, youth, majority, maturity, old age and senility of individuals and of nations—political grand divisions and segments of the race—are the outgrowth of functional activity; hence, we have historical ages. These ages have concurrent stages of mental development in great masses of their individuals, and have their rise, maturity, and fall.

**Childhood and Potentiality:**

The child of advanced civilization and the childhood of the race differ in one respect of great importance. It is in the fact of potentiality, the power existing in untaught or unawakened faculties. In the individual child or youth of an advanced civilization, the higher ranges of faculties are present in quality and quantity, but quiescent or dormant, or unstimulated through experience. But the regions above the senses are full and prominent.

In the peoples of the immature races, the faculties are all present, but are small and unpotential; they
cannot be aroused or stimulated beyond a limited degree of activity. In these mentalities it is not a matter alone of not yet having had ideas, or information, or fundamental knowledge presented to them, but of incapability of understanding or of elaborating the information received from nature or from others.

In the childhood of the individual of advanced peoples the higher ranges of faculties that are relatively dormant or quiescent can be aroused, and may become the dominant faculties of the individual, but in the race progress the dominance stopped with the advance of the age and only here and there an individual rose beyond that mass, his very lonesomeness making the progress of his higher ideas impossible.

Thus with each of the following ages; each mass continued to live the life, ideas and disposition of its age and stage of development, just as to-day many people stop at these same phases in spite of the fact that they are surrounded by a culture and elaborated knowledge far beyond them.

They of the older days had no mental maturity around them to educate, command and develop them away from their mental childhood, youth or immaturity.

New regions of mental faculties coming into power through the advancing centuries worked out and discovered those satisfactions, arts, conducts and sciences required to gratify the newly awakened regions and their desires and purposes. Just so the youth and man of to-day, seeing the possibilities of higher or greater ideas, of finer desires, or more ambitious or useful purposes, struggle for the mental and physical means for their accomplishment.

As in the mass of the individuals of the race of the past, even yet the old dominant power faculties cling to their
The Historical Growth of Man

rights and methods. Then as now those faculties modulated the face, the body, the social and industrial life. They tried to invest coming generations with their own predominance. They pooh-poohed at inventions, innovations and progress. The foghorn "it can't be done" of those days was even more determined than to-day.

Necessity and Power:

The necessity of every age, as that age sees necessity, grows in advance of its mass, just as the faces and bodies of maturity exhibit powers and needs beyond youth and childhood. Each rising power stimulates some activity in the growth and potentiality of powers above and beyond, or that respond to it; or the sway of time elaborates in the mental atmosphere of the race a capability of discernment unexperienced before.

As the mental dominance advanced from faculty group to faculty group, the facial regions reached maturity from region to region, the bodily ratios and requirements paralleled the mentality and the face, in the segments of the race as in the individual.

The range of ideas, of feelings and of purposes was worked out in kind, always finding some source of advancement derivable from the awakening potential faculties above, faculties that in some individuals were markedly in advance of those of the mass; markedly in advance either in quantity power or quality power or range of elaborative ability.

It is notable that the brain quantity contours of the individual child express the potential characteristics and abilities of the individual adult much more fully than do the quantity contours of the child's face; that as potential faculties become active, the face gradually reaches ratio proportions, keeps regional pace with the developing faculties, is moulded and modified under the stresses of accomplishment, and steadily remains the most highly organized criterion, not of particular ideas, emotions or purposes, but of the relative faculty powers. Going far beyond the phases of particular ideas, emotions and purposes, we are to study throughout this course the means of measuring these relative faculty powers that in their varying proportions and degrees of ability are the origin of all human action and vocations.

It will be noted that the faces of children in the cultured divisions of the race are much more orderly than are those
of the aboriginal or the less cultured branches. Thus we realize that the children of cultured races have not only greater potential powers and a higher range of possible dominants, but also greater balance and ratios of faculties. In Fig. 205, the faces a, b and c are of living branches of the race, the mass of which is in a medium state of development. Compare these faces with faces d and e, children of cultured ancestry; notice the orderly relations of all parts of these latter faces.

Infancy of the Race:

In the infancy of the race, or of the early branches of the race, the mass was governed by sensations of impression, feeling, and appetite. This phase of life was in the main prehistoric—there were no historic methods. It was savagism and cave life. The nomads wandered where other nomads let them wander. Polydemonism scattered demons everywhere; hecastotheism was the religion in which every object of nature at one time or another was given its kind of godlike powers. Myths and superstition were the forms of intellectuality. Finally, pastoral life, tribes, and war-castes dominated.

We still have in Africa, in South America, and in the Philippines remnants of these stages.

Facial Characteristics:

Now if we glance at the faces of those who belonged to this age, or who, living to-day, represent them in character and stage of de-
velopment, we shall notice great specific resemblances in similar mentalities.

Beginning with a heavy low backhead, broad at the base, wide under the ears, heavy zygomatic arches in the cheek bones, low and short retreating foreheads, flat nasal bridges, protruding upper jaw and full heavy lips, we have the cast of the prehistoric savage and nomadic life. These same characteristics, both mental and physical, are found to-day, as nearly as contact with the civilized world allows, in the Bushman of Africa, in the Bontoc Igorots of the Philippines, in the Eskimo of the Arctics, in the Hottentot, and in the South American Indian.

A glance at these faces informs us of the fact that it is futile to expect a civilization of any intelligent degree from these characteristics. They are in the infancy of mentality; the dominants are the appetite and low sensations, with sight, in the Intellect, and Impulsion, in the Will, as their guide and Executives. The civilized infant, with higher potential faculties already powerful but dormant, soon outgrows these lower regional dominants.

Childhood of the Race:

The next form of—shall we say—civilization, was a childhood age, illustrated by the early Egyptians. Apparently this was dominant about 3,000 years B.C.

Impulsion, expressed by Aversion; Destruction, and Mobility, were the chief mental impulses. There were many gods; even thus
FIG. 208

Note the forward projection.

Seti and Newton same cranial lengths compared. The actual lengths were not the same.

Ramscall (Scoropust): Ramses III: Meneghtah I: Ramses I.
early, monarchs were credited with being gods, sometimes by their own authority, sometimes after they were dead. The forms of rulership now became monarchial, and hereditary chiefs came into play; thus, men of high estate began to have ancestors, though they built tombs for themselves and not for their ancestors. They also left orders to have themselves mummified. Our illustrations are from photographs.

There were at this early date state wars and ages of conquest.

An important intellectual advance happened in Egypt about this time and perhaps in other countries—iconographs, in the form of crude picture writing, were invented. These were much like the first communications the child of to-day would write, although considerable clearness was finally obtained by the fact of their becoming specific symbolism, and conventionalized.

There were slavery, crude commerce, and equally crude agriculture. The Egyptian single tax of the Nile valley probably came later.

The Egyptian age—the age of Impulsion—is exactly typified by the faces preserved for us in their mummies. Old Seti I, already then counted as the Nineteenth Dynasty, and his son Rameses, who sat on the throne thirty-one years with his father and thirty-six years after his father's death, are marvellous exhibits of Egyptian mentality and life. Beside the figures of mummies, there are thousands of sculptured faces on the monuments and tablets of Egyptian history that reveal the same order of mentality. The full, heavy mid-cheeks, the arched short nose, the retreating forehead and the low tophead, all clearly indicate the almost unopposed mental dominance of the heavy, low backhead—the region of Impulsion.

Youth of the Race:

From the Egyptian's low Will region of Impulsions the mental pendulum of dominant power swung forward in the Mongolian race to the low Intellect region of Perception. This was the early youth of the race, the Mongolian age. Now at least began the Chinese influence on the world, and no age has influenced it more; about 2800 B. C. Form, Color and Number were dominant in the intellectual expression. Hieroglyphs were invented to take the place of pictures; sculpture and painting took the field of iconographs; and ceramics, the
finest the world has ever seen, replaced the sarcophagi and scarabs of the Egyptian age.

In religion spiritualism of a transcendental nature succeeded polytheism and anthropomorphism, and other religions of the preceding ages. There were no more many gods nor human-being gods; in fact, there were powers but no gods.

Of the Mongolian age we have less portraiture and no preserved subjects. They were not so much interested in the physical life of their future as in the spiritual life, and they believed that the spirit could find a new physical body if one were necessary. Yet we have sculptures and Chinese ink drawings, perpetuated by redrawing, still in a sufficient state of preservation to prove the ascent of the perceptions and the depreciation of the impulsive, and the greater intellectuality of the average of the race segment.

The fathers were the rulers—fathers that were old and kindly and peaceful; fathers that were ashamed to do anything that would disgrace or displease their “ancestors beyond the sunlit mist.” So paternalism became the system of government, and a free competitive system of trade based on an orderly table of weights and measures.

With the Mongolians at this time came another great invention, the discovery of number symbols. Their inauguration of private schools for general study and the arts antedates the Greeks some 2000 years.

Notice the face of “The Teacher,” who doubtless has influenced the lives of a greater number of people than has any other man. He was an advanced mentality somewhat ahead of his age and probably of the culture of his day. “The true doctrine consists in having the right heart, and in loving one’s neighbor as one’s self. Reciprocity is the one rule of practice in life. What you wish done to yourself that do
to others.” In Lun Yu, 15.23, Lao Tze, 604 B. C. had said, “The wise man avengeth his injuries with benefits.”

In Fig. 210, the Manchu of to-day, the forehead has grown longer and higher, the malar and zygomatic arch is still heavy and high, but the mandible and lower side face is weaker, the mouth coarser, the nose modeled along even lines.

In Fig. 211, face c, of Kwan Yin, we see the exquisitely modeled face of the ethical teacher and ruler. Face a is that of a cultured youth, faces b and d the low orderly and disorderly faces of the common life of Pi Hsien. These faces still hark back to the early ages.

The Semitic and Sumerian Age:

The peoples of this age were those comprising what we may call the Arabian world. Out of that world of contest of the Semitic nomads and the Sumerian urbanites sprang for a time the Babylonian dominance under the Semitic Hammurapi about 2100 B. C. It lasted until overthrown in power, though not in total impulse, by the Iranians and Aryans, the Indians in the East and the Europeans in the West.

In Figure 212, face a is from a bronze coin or medal of Astarte, and b from a
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FIG. 212

tablet supposed to be of Hammurapi. It is a curious fact that the Semites and Assyrians could not draw the face in front view. The projection of the body required a profile of the face, and often a front view of the body. It is also evident that these figures are not conventionalized any further than the styles of the day demanded. The enormous nose responds to the dominant Defense.

In this age the mental pendulum swung backward to the Will region of mentality. Its notable power began about 2300 B. C. and declined about 1500 B. C.

The intense faculties of Caution, Economy, and Defense were then dominant. The age was distinguished by its mixture of absolute monarchs, patriarchs (probably influenced by the Mongolian forms and ideas), prophets, and gentiles.

The age was noted by its use of captive slaves, by its instituting wage-labor for profit, and by usucapion—legal ownership conferred after adverse occupancy for a given length of time. Out of this kind of ownership our prescription and statute of limitations have grown. Before that time ownership rested in adversative occupancy.

This segment of civilization also introduced idealistic gods and brought into use iconographic and consonantal syllables, each syllable also representing a number.

In Fig. 213, faces a, we have two Assyrian soldiers of importance. One of them has the pure Semitic-Assyrian nose; the other has a less dominating Defense and larger analysis. Face b is that of a captured Elamite soldier. Faces c represent two musicians in the court of Ashurbanipal; their noses
and malar bones are less prominent, the cheeks are full and fleshy—they are evidently well fed musicians of the time. Faces d and e are those of Persian soldiers, guards in the King's palace. These faces have less destructiveness and their noses prove them to be portraits, since both were probably made at the same time and are not conventionalized.

In this age we find the protruding eyebrows of the Mongolian early age, the full low-middle of the backhead, the rather narrower sidehead and the low tophead still persisting. The nose, fairly long, is high at the top and bridge. The cheek and mandible are well modeled, and for the first time they are comparatively expressive. The upper lip is rather short, is full in the middle, but thin and compressed at the outer ends. The forehead has slightly advanced beyond the Egyptian and the Mongolian, as theocracies, prophets, gentiles, and the use of alphabets and conceptions of usucapion would necessitate.

**Hindu Civilization:**

The balance of power now swung forward again to the Intellect regions of mentality in the Hindu. **Attention, Memory and Language** were dominant and led in expression, though the reflective faculties ranked high in a few individuals, as was the case among the Greeks. The Hindus were probably a very old race, but, historically, their records are the most indefinite ones that we possess of any civilization. We can go back to about 2200 B. C. in their history.

This branch of the race now began to turn from the heavy needs of life toward views of civic policy, to reflective re-
ligious thought, to the useful and elegant arts, as well as to
grope for the fundamental basis of the sciences. At that
early day they had discovered number places, and had
thought out much of geometry. They were the greatest
writers of poetic literature, and, perhaps, though Reflection
was powerful only in the few, the greatest reasoners in
speculative thought the world has ever known. They were
the first to discover the atomic theory, the indestructability
of substance, and the ceaselessness of force. “That which is
can never not have been; that which is not never can be.”
They were the first to discover the revolution of the planets,
the declination of the ecliptic, and variations of solar latitude.

In Fig. 214 we see the early Hindu ideal of the hu-
man face. It has the oblong wide eyes, level lidded and
wide apart, the evenly chis-elled nose and chin. The whole
face is highly harmonic in
temperament.

This face, however, in-
clines toward the South In-
dian or Mongolian root
branches. But in the Aryan
roots there were other domi-
minating characteristics and abil-
ities. These ran through the
ancient Hindu faces; the long
head and face, the tall and
lithe mentality and body.
Among these root stocks was
the old Aryan, the Sanskrit
speaking North Indian. Out
of this stock probably grew
the Indo part of the Indo-
Europeans, from which stock
arose the non-writing and monumentless hordes massed and
guided by the Iranian Medes and Persians in their descent
from the great steppe east of the Caspian, who overran what
became known as the Iranian Plateau, finally in contests and
conquests conquering the Semitic Chaldean world.

The Hindu age fell under the dominance of the Retentive
regions and the early forms of speculative thought. The fore-
head was broad and fairly full in the low middle, the brow
still full but not predominant as in the Assyrian. The nose was almost Grecian at the forehead, somewhat higher at the bridge than the Mongolian, but not nearly up to the Semitic nose of the immediately preceding age.

The facial angles were still longer, and the chin, mandible and jaw better developed in proportions and more highly modeled than in the still earlier Mongolian age. The zygoma were still large, indicating the cautious, unaggressive disposition of the Mongolian age. The eyes were wide apart and seemed to be reflectively passive.

Their government was, at an early date, chiefly by village communities, with a superficial very limited monarchy. Public land rents based upon use and productivity, a highly equitable system of supervisory laws and home life, the rights of childhood, and the equality of sex right were elements of their civil forms. There is no history of any form of slavery among the early Hindus.

Later the element of caste had begun to set its hand upon the orderly life of the Indian people. On the one hand the nobility and the scholars, forming but a narrow band of humanity devoted to literary culture and the philosophy of life, existing in the quiet of centuries undisturbed by internal or external strife, built up a structure of exclusive knowledge and a substructure of poetic, romantic, and ethic concepts unapproached by the world at that day.

But the individual of the great mass was circumscribed in his mental operations inside a narrow sphere of cultural learning; unlike his superior in the world of thought, he made no effort to direct his energies and his impulses toward a high degree of eminence in the world of philosophy. The orders of society as the early Aryan saw them were for the common comforts and common needs of the mass; long centuries must pass before the whole could be raised to a higher part in a brilliant destiny.
For these purposes of subsistence, of security, of common happiness of all communities, the superior executive powers set apart in series the various vocations, to have them descend from father to son in general castes, and as the human mind bends to necessity with much more pliability than we are apt to conceive, in so far as its wishes and labors are concerned, however much the special talents are distributed, so in general the variety of dominant abilities of that age of late youth found a fairly wide distribution.

Attention, Memory and Language were the faculties that drove the Hindu mentality to expression in its poetic literature and symbolism, as it does the youth of to-day, in the romance of words, of the story, the literary predicates of what is to come.

Their cultivated dominant Attention gave them great powers of observation both in the fields of nature and in the wonderful technic of their hand-made manufactures, in which they have never been equalled even to this day. Their dominants, as a mass, were just above Form, Color and Number, and this near relation proved invaluable, when so much depended upon hand skill and accuracy.

As in late youth, also, the faculty of specific Memory was in its prime. It was treated as a means of record far beyond common usage among later peoples who had greater facility in the uses of writing materials. Education was based very largely upon verbal teaching and its memory; the history of the past, of the family life, the incidents of a non-migrating society, of the idealized monarchical reigns, were handed down from old to young in modeled memory tablets, much as grew the mythology of the more Western peoples.

Their epochs were not those of the military chieftain, of the distribution of plunder, the leveling of cities, nor the wailings of many things gone wrong, but rather of a new whirl in the wheel of universal destiny; a pilgrimage to some long revered shrine, or a deadly famine that had left few to rebuild the life of the village community. Their cycles were cycles of memorized incidents to which here and there in the course of time were gathered accretions to replace those that had vanished from lack of potential interest.

From generation to generation the Indian conjured his mind with the attainments of his station and his vocation, developed the habit of doing with ease and pleasure the work of his father, trained his mind and hand for that work, acquiring such expertness and delicacy of handling, such grati-
fication in the small changes he could make, that knowing no greater life, he found happiness. Not only found happiness, but since the great mass worked directly to the end of supplying common wants, found them quite sufficient in a densely populated territory.

But Indian institutions became permanent and settled, an immutability cast its spell over the country for centuries; the cultured classes rose high in thought and esthetic appreciation; they moved mentally in an arc above their mental region and approached the sphere of enormous reasoning in many lines, needing only the practical, concrete and interwoven energies of Construction to have carried them twenty-five or more centuries beyond their historical realm.

But it was a fatal cessation in growth; it found also a fatal recession from the great attainments that produced the Vedas and the Mahabharata, and the thousands of beautiful and brilliant intellectual concepts that were so long hidden in the complex mazes of Sanscrit, or that have perished through the very tatters of their materials of record.

Unsaturated by the aggressive and impulsive spirit that drove Egypt and Assyria into incessant war, slavery and despotic conquest, India with its hundreds of millions, bounded by the Indus on the west and immobile China on the east, the mountains of Sayan and the Tibetan chains on the north, the vast indentures of her ocean on the south, rested, with dynasty after dynasty of her own, her great wars the conflict only of slow moving ideals.

The Greco-Roman Age:

Two great ages had arisen with dominants in the Will, in the backhead,—the Egyptian, and the Assyrian-Chaldean in the name of the Semitic and Assyrian Age.

The great bulk of China and the Desert of Gobi had
apparently stayed the sweep of the pre-Aryan and pre-Iranian human floods from the steppe of northern Asia. Westward, from far beyond the eastern verge of the Caspian, from along the Arctic facing slopes of the Sayan and the Himalaya, from beyond Sogdiana and Bactriana, dipping their feet in the northern reaches of the Indus, on the backs of horses these Iranians flung themselves as reinforcement into the phalanxes of the Medes and Persians. Joining the barbarians of the Balkans, in the fifth century B.C., all moved under their power; Egyptian, Syrian, Assyrian, Hittite, Ægean, Cretian, Median, Persian, Cilician, Lydian and many others were moulded into parts of another dominant people with another dominant mental range coming into power. The vigor of a people whose ascent came from an infancy whose history we little know, grasping the mental products of the African and Arabian ages, changed the civil as well as the mental faces of Chaldean empires, and moulded the Greco-Roman age.

The dominance of mental power in the Greco-Roman age rested in Co-action of the Will, the faculties of Integrity, Liberty and Industry, supported in the Intellect by Perception and Retention. It was the period of the early maturity of this part of the race.

The Europeans had grown up out of the historic
mists of many centuries. They did not write, as did the Africans and Asiatics, their history and order of growth in either iconograph or hieroglyph, nor did they pass through the stages of the cuneiform of clay or stone. Rather, they adopted their alphabet from the Phoenicians, modified to the easier writing, though still read from right to left, turning some consonants to vowels, as we should still further do with some of our consonants and digraphs, saving labor and dubiety.

General Regional Changes:

In the Greek we see the rounded, full forehead of prematurity, the full middle-upper backhead, the wide middle-upper sidehead, the highly modeled straight-bridged nose, but a trifle short, except in individuals of a higher order. The mouth was fully developed, marvellously carved and sensitive, showing body freedom and physical sensibility, adaptability to free art and to unrestrained religious choice, and the dislike of astringent emotional dogmas. They had various forms of spiritual hierarchies and many qualities and varieties of gods, as had the early Hebrews and Sumerians, being the religion of even the cultured classes. Here and
there throughout the Greco-Roman age there were, as in earlier ages, men of the extreme long-headed mental temperament, as illustrated by Aristotle. But these were exceptions to the mass of even cultured men.

This age was noted for martial laws and false republics—pretended republics—interchanging into and from empires. It still upheld its rulers by the importance of their confiscations; it inaugurated the systems of perpetual rents. Most of the population were held in common poverty.

The Greco-Roman age partly redeemed itself by free art and freedom of speech. It added greatly to empiric science, and in philosophy of social relations finally led to jurisconsults and constitutional laws.

The Hindu had reasoned metaphysics out of the arena of logic and thought, but the Greeks and Romans, less able logicians, reasoned metaphysics into a blind cave of abstractions out of which the metaphysicians and many psychologists have never since been able to climb.

The Greek, exercising largely his faculty of Liberty, with his temperate clime and rich fields, began the glorification of the body instead of the appetites and of wealth, and brought to the world a heritage of art beauty unexcelled in its expression and in its harmonic proportions. Centuries later the Roman partner of the age travelled the same mental path but never reached the heights one might have expected under its interwoven interests and communion.

We have stated that the Greco-Roman dominance rested in the faculties of Integrity, Industry and Liberty, as noted in Fig. 202 in the upper backhead region of the Will, and as seen in the maxillary regions of the face. In theIntellect the perceptions and retentions, the six faculties preceding the reflective faculties, were still the intellectual dominants.

Notice in the seven Greek faces and the five Roman faces
of Fig. 219 the remarkably heavy full brows, extending full half way up the forehead, thus showing the advance of these regions of **Form, Color, Number** (the last much less marked), **Attention, Memory and Language**. Note the inclination toward retreating foreheads above the line of the retentive faculties, the narrowing at invention and **skilfulness**, and along the regions of the Aspirations and of **Amity and Reform**, and the equivalent shortening of the upper lip from the base of the nose downward and the thinning of its red margin.

The lower jaw is generally heavy, the regions around the mouth are full and the malar prominence heavy and sharply marked. The nose is generally high and long, narrow at the end, and has a short or imperceptible septum, without real marked **analysis** and with highly tertiary **synthesis**.

These, and other illustrations of Greeks and Romans throughout the text, confirm the indexes of specifics, and, taken from historical faces were among the great faces, the advanced faces, of their time.

The common faces of those days are much less familiar to us in the historical records, but we have every reason to believe, considering their vocations and conditions of learning and common thought, that they were inclined toward the more aboriginal and low dominant faculty regions.

The transitions of cultured and uncultured mentalities during the centuries, transitions that threw the aristocracy of learning among the plebeians of wealth and culture, and that raised from the plebeians dominating characters among the aristocrats of wealth, mixed the indexes of both kinds of faces somewhat generally throughout Europe. In the general growth toward the then coming age there sprang up, here and there, orderly and powerful faces, some of which moulded the destiny of man by vivifying his knowledge, by preparing an approach to science by awakening reflective powers that had played with the elements of that kind of knowledge, but had not been able to fathom the involved relations of the material and the organic sciences.

But the Greek and Roman age was to accumulate such a mass of dynamic power and such a volume of intellectual force close to the boundary of elaborative **Reason and Construction**, that only a few centuries were necessary to sway the mental focus of power from the Will again to the Intellect, and there release the reflective faculties to build the intellectual temple of the sciences.
The Christian Age; and The Age of Science:

About eight hundred years after the Roman segment of the Greco-Roman age had begun, the Christian age started. It was a reflective and aspiring protest against the ultra-brutality and licentiousness of its day and past. It crept slowly through the writhing mass of intemperate passions, degenerate ambitions and verbal sophistry, seeking to turn back to a supposed era of purity of worship, self-abnegation, and human compassion. It could not transform the old; it must awaken a new mental region.

Universal commerce and the migrations of individuals (instead of tribes and masses) had given it less distinctive geographical boundaries than preceding ages, but the mental cast had changed. The forehead was longer from the brain centers and taller from the brow lines; the nose was longer and more highly modeled; the eyes were deeper and apparently intenser; and the upper lip was more highly expressive and the mouth more dynamic. Noticeable changes in the nose were the extended septum, the variable wings, and the inclination toward and the change to the bulbous end. We have had occasion to go into these changes minutely as we have travelled through the first part of this course of studies.

New mental powers began what has grown into our own age, an age having, we hope, an essential degree of maturity; with the dominance of mental power in the Reflective region. Reflection is a process of Inspiration, Reason and Construction; its products are the philosophies, sciences, and inventions.
The second, or present, part of this age can very properly be called, from its dominant mental regions, the Age of Science.

Throughout this development we find in ethics more or less of dogmatic philosophy; in the field of religion, many sects and doctrines; in the field of government, about all the kinds the world has ever had, and something like true republics; in the field of knowledge, physical science, great inventiveness, and free public schools.

Unlike other ages, the Age of Science arose through the cultured Retentives and industrial life of the Indo-European branches of the race, finding its immediate parenthood in the Crescent of the Mediterranean, rather than in the Crescent of Arabia, from which had come so much of the Greco-Roman inheritance, as traced in the preceding pages.

The regions of the face that were changed by the coming prominence of the Reflective function were smaller regions than any before in power. The notable marks were not so striking as was the shifting balance of the earlier ages. It was much like the trend of changes from prematurity to maturity in the youth. The metamorphosis, being in small regions, resembles in the face rather a change from dormancy to activity than a change of prominence from one group of faculties to another. Yet there is an actual change in great masses of faces. The septum, the end of the nose, the alae, and the upper lip all go through the reformation of awakened specific powers.

These changes often take place in the youth transit from fourteen to twenty-five years, and by intensive activity may do so at any age.

The Long Trail:

The counselor and employment manager will have cause to remember that however high in the realm of mentality the intensive student under opportune conditions may have climbed, there are many men whose mode of existence holds them far back in a long trail toward the mental past.

The common labors of mankind are still the labors of the mass of mankind. Information that must be gained in order to live is the first gained, now as in ancient times. If the tasks are uncultured, so are likely to be the first grasps for information. If self protection is the next order of necessity, so, too, will it be the next order of thought and purpose.
If one employs a low order of mentality, one must expect to find in it the intents and purposes of a low order of mankind, to spend the effort required to arouse the high purposes into activity, and to need the time and incessant imprint of processes of growth demanded by dormant mental regions in bringing them to those stages of fertility and mental productivity that cultured stress and refined textures are alone capable of responding to.

Hybridization and search for better social life may often have added potential powers to men who are cast in low social or industrial estate and in whom lack of opportunity has left fallow higher individual possibilities. The counselor can find the indexes of progressive working abilities in the faces of such men, just as he must expect disorderly conduct and dispositions in men who have disorderly faces.

Local, Not Mass Changes:

In this brief survey of the mental origins of history we have seen portrayed several great facts. History began in the mental childhood of the race. The acts of the childhood of the race exactly portrayed in fact and in personal facial contours as well as in dominant cranial regions, the principles of location used in this work.

In each succeeding people, the dominating series of ideas and purposes arose from an immediately higher region in mentality and a higher region in the brain. These awakened regions of dominant ideas and purposes changed the local contours of the face and of the brain to correspond to the mental change of power in their mentality. The development of each branch of the race ran a course similar to the upward mental development of the individual; the development ceased when the dominating function of the mass of its individuals was reached, as is the fact with the individual. Each new branch used the mental powers above that dominance with scattered or unsystematic success, exactly as does the individual of equal grade. Each people allowed younger branches of the race, through the exercise of higher and more complex faculties, to pass and surpass them, just as does the individual. And, finally, the older branches after many centuries, through a rebirth of aspirations, through renascence and imitation, through awakening faculties nearer the range of mental maturity, trend toward the new age ideals, desires, and will.
A RECONSIDERATION of THE HISTORICAL GROWTH OF MAN through QUESTIONS AND ANSWERS

Question: What were the predominating mental influences in the earliest historical age?
Answer: Those which to-day are predominating in the infancy of individuals, namely, the regionally low Sensations.

Question: What mental influences predominated in the next marked age?
Answer: Those which in advanced civilization predominate in individuals in early childhood, namely, the Impulsions in the Egyptian age.

Question: In what order did other mental influences predominate in succeeding ages?
Answer: The Perceptions in the Mongolian age, the Defensive influences in the Semitic and Assyrian age, the Retentives in the Hindu age, the Co-active influences in the Greco-Roman age, and the Reflective influences in the present age.

Question: What general changes in the face and head marked the gradual development of the race through the different ages?
Answer: The contours of the head and face changed; the forehead advanced—forward and upward—the nose grew higher and longer, the jaw and mandible became less projecting (grew orthognathous), and the features became more orderly and highly modeled.

Question: What two important lines of measurement of facial regions should the student bear in mind?
Answer: The distances along the nasal angle, the facial line, the angle of the mandible, the malar bone, and the backhead.

Question: What relations are stated in the latter part of the present lesson?
Answer: Only the general relations of the mental organs to the facial regions.
Question: Is there any natural or sufficient reason why the adjacent mental functions in the mentality need not have adjacent regions of influence in the face?

Answer: The regions of the face are not under intensive functional working obligations to each other, as are the faculty regions of the mentality. The face is an organ of expression as fully as it is an organ of the senses. In fact, none of the contours of the face are governed by the needs of the physical organs of the senses, but are adapted both to transient expression (as mirth, anger, etc.) and to the constant expression of the character and mentality of the individual.

Question: What organic evidences are there to prove that the contours of the face are not necessarily governed by the needs of the senses?

Answer: The faces of the animal kingdom accommodate the sense organs as freely and completely as do human faces, yet the animal faces have great differences of contours, even in the varieties of the same genus.

Question: If the face is an organ of expression, what conclusion must necessarily follow?

Answer: The regions of the face must express in an orderly way the quantity and quality influences that govern those regions, both in transient and in permanent expression.

Question: What changes the contours of the face in its growth from infancy to maturity or to senility?

Answer: The changing proportions of power of the governing mental faculties, in their stress of government, of contest for supremacy, or of intensity in the purposes of personal distinction, and as prophetic of powers that are subject to greater accomplishment than opportunity or specific direction has demanded.

Question: What course do these changes usually take, and why are they apparent as orderly facts?

Answer: The course of change, if it occurs, is generally upward in the mentality; concurrent changes in facial regions with changes in the mental disposition are invariable and a racial fact; all men have the same number and kinds of faculties, differing chiefly in degrees of power, and in particular ideas.

Question: What value in particular in relation to youth can we derive from these discoveries of the causes of Historic Growth?
**Answer:** Any study of human development that aids us greatly in understanding how to interpret what a particular youth can do, is most able potentially to do, can most enjoyably and completely succeed in, or the order of his growth, that study we must not hesitate to make, not begrudge it, if the expertness is compensating in a professional way. A dunce may be excusable for being one, but a lazy man is an abomination in any responsible vocation.

**Question:** What collateral educational and vocational value have these views of the Historic Growth of Man?

**Answer:** It presents to us the great series of facts that the intensive functional and faculty activity of the child may change from one faculty to a higher one; that a dominating disposition at one age may not continue to be the dominant in the next; that it is never safe and seldom right to predict the vocational life from the self-choice or natural aptitudes made or displayed by the individual in childhood or youth, since higher or other regions of mentality coming into greater power may change the whole tenor of desire and dominance.

**Question:** What other exacting fact of this order does this study illustrate?

**Answer:** That the change of dominance of a faculty brings against the earlier choice, or against a wrong choice of vocation, what years ago we described as the mental law of diminishing returns; that the amount of product of whatever kind brought comparatively too expensive a result.

**Question:** What does this last law determine or indicate?

**Answer:** That segments of the race, and the individual of the race as an individual, can advance most rapidly in the dominant faculties, can reach the highest volume of ability in those faculties, will virtually stop when the quality index is reached, and will suffer regressions in an effort to overreach the individual maximum.

**Question:** Does the law of diminishing returns affect other than the dominating faculties?

**Answer:** Experience seems to prove that endurance, capability and enjoyment of mental activity, when resting in the medium or smaller faculties, decrease when under stress more rapidly than the proportion of the smaller to the larger power faculties.

**Question:** Are there apparent exceptions to this fact of ease in accomplishment?
Answer: Yes. Evidently a large faculty without information cannot compete with a smaller faculty that has distinctive culture until the larger one has an equality of mental material with which to act.

Question: Given equal opportunities, what will be the probable result?

Answer: The larger faculty in the same individual will gain more rapidly than the percentage of difference between its size and the smaller one would indicate, taking as a tentative basis the production of men in a given vocation. The problem, of course, is highly tentative, but a matter of fact in experience, as when A equals the average in one vocation, but reaches near maximum in another.

Question: What do the millions of such experiences prove?

Answer: That the choice of the right vocation is the prime factor in success. U. S. Grant was a very poor success as a real estate dealer. He was never a tanner. He is considered to have few equals as a general.
MERTON COURSE

VOCATIONAL COUNSELING

and

EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

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LES S ON SIXTEEN

Charting and Rating

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in
Vocational Counseling and Employee Selection

THE ART OF JUDGING PEOPLE

LESSON SIXTEEN
Charting and Rating

In this study we shall consider more specifically the question of charting and drawing conclusions by comparing one analysis line with another and the predominance of specifics or "high peaks" in their influence on vocational judgment. This lesson is given here in order to precede the studies of the faculties of the Will and their executive relations in class and study analysis, and as a review of the specifics of the Intellect studied from lesson to lesson. The analyses of the Will specifics are also given throughout the text, in order that later studies may be carried back to those of the Intellect.

In these studies, as in the previous analyses, no special effort is made to teach the elements of quality judgment nor to reach the vocational requirements of all of the vocations, but the time must all be given to the ability to read the faculties and their subfaculty specifics.

The prime elements of quality, preparation and opportunity, of potential and dynamic signs are presumed to exist in these examples. At the end of the second part three full lessons will be given to the subjects of determining quality rating, the pitch or grade of the individual in the world of accomplishment, the path of probable promotion and of vocational difficulty from the simplest stages to the most complex sequence of a vocation, or the climb from the ordinary vocations to those requiring greater effort or greater ability. The last lesson in the following Part treats of the application of counsel, its requirements and demands, and of the possibilities and deterrents in the abilities and aptitudes of the client or applicant for counsel or position.

These four lessons are of great importance to the application of Mental Analysis. The Thirtieth, Thirty-first and
Fig. 222.

Angle-line, a.

Dot-line, b.
Thirty-second, requiring the studies and experience preceding them in order to derive the most benefit from them, are predominantly necessary to the practice of Vocational Counseling and Employee Selection.

Problems of Vocational Selection:

In this present study we shall outline some of the processes of arriving at a conclusion concerning mentalities of those who do not know what vocation to choose, and in a brief way carry out the problem of elimination. On account of the limitation of space, two studies can be carried on at the same time, either eliminating the individual as an applicant for a position, or discovering a vocation fitting the individual.

Processes of Elimination:

In Fig. 222 are faces a and b, each having concluded to become a private secretary. We chart the specifics of face a as the angle line. Instantly observe the deficient rhetoric and vocabulary, which should range at the fine dotted line. The whole range of Language vocations is thrown out of consideration. Observe the line at observation and mental focus; in these specifics the line is barely high enough without having competing specifics. At specific Memory of facts, system and time the line is again below the vocational demand of the private secretary, who must keep in memory a mass of transient incidents, times of action, and succession of events. Even were these specifics in normal volume, the powerful calculation, quantity sense and separation, combining with object-form and individuality, would demand expression, and since they have no competitors in the main line, the vocation must fall on these specifics, as bookkeeper, posting clerk, billing clerk, or comptometer operator. The deficient Will faculties exclude a great many vocations.

In face b, the dot-line analysis, the specifics of the private secretary are too low as in the above instance, including object-form, which is high enough in face a. Other specifics of elimination on the plus side exist, and would make the vocation of private secretary impossible because of executive disposition: note firmness, perseverance, freedom, reciprocity, independence, hardihood and others. Then in the Intellect, notice that analysis, synthesis, judgment, imagination and calculation are the dominants and would suffer constant irritation at their secondary opportunities.
Angle-line, a.

Dot-line, b.

FIG. 223.
Face b has the specifics of the controller rather than of the accountant or treasurer. The high executives would make the routine of the treasurer and the generally non-executive functions of the accountant dissatisfactory vocations.

In Fig. 223 face a, the angle-line analysis, the young woman studied to become a stenographer. Object-form and individuality were dominant, the Color specifics were nearly as powerful, imagination ranked almost as high and strongly opposed the exacting “routine” of stenography and its literalness; observation followed closely in power and distracted her attention from her own work.

In the Will intensity, utility, hardihood, the Economy specifics, strength and endurance, and the sense of touch were all considerably too small to sustain her in consecutive effort. The executive faculties were also too low to allow her to carry on any extended phase of management or any broad view of superintendence, even of those vocations of which her dominant and supporting faculties were the origin. Language, however, was the chief insurmountable bar to the stenographic vocation.

Form, Color, Attention, imagination and esthetics nominated her for an artistic vocation, where color, design and imaginative specifics were required, and where there could be intervals of rest and recuperation from intensive effort. In these latter fields, as a milliner and designer of hats, she made an uncommon success.

Face b, the dot-line analysis, has the stenographic specifics quite fully developed, but in this instance analysis, synthesis and the specifics of Attention and Memory were powerful and supported by an evenly balanced though not high range of faculties in the Will. These at once indicate a vocation where managerial opportunity can be found and these faculties exerted in directing and managing others in the supervision of correspondence, statements of purposes, and general office practice. The mentality has many possibilities where rhetoric, vocabulary, and a keenly active Memory of facts and system, with considerable executive effort, are required. The high line at the faculties of Language and Reason throws the executive regions considerably below the maximum; note the end of the nose and the mid-temple regions of the face. If the quality of this mentality were low, the vocation would be chosen from among the trades of a much more imitative nature.
Face a, Fig. 224, the angle-line analysis, has Number dominant, closely followed by observation, mental-focus, scrutiny, secrecy, vigilance, rest, propriety, frugality, firmness, perseverance, fortitude, Amity, Laudation, analysis, synthesis and judgment.

All of these are so close to the dominant line that the choice of vocation rests in Number and Attention. Economy, Caution and Stability are strong indexes toward banking, either as cashier or as treasurer. Large Amity and Sociability would trend strongly toward the cashiering or account securing, or the generalized side of personnel control and management.

The vocational counselor has, in such instances of evenly developed natural aptitudes, the choice of leaving the equation of several nearly equal vocations open to the client, subject to his experience or to the openings that may offer, and to the fact of the vocational differences in bank methods or in the particular practices of firms. This analysis line is given here as an illustration of the occasional mentality in which the ratios are adaptable to several nearby vocations, and in which the specifics may run quite favorably owing to the somewhat like functions to be performed.

When the quality is high, as this face apparently is, these wide range abilities make promotions through a series of positions much easier than where the specifics are high and few, and the vocational aptitudes much narrower, and consequently much less subject to variety of vocational effort.

Such widely adapted mentalities are often dissatisfied with every vocation, no particular specific being predominant enough to enjoy intensive effort under the wanderlust of the others. Such cases of the over-harmonic line are likely, if left to their own selection, to fall into comparatively secondary or easy going vocations where initiative and effort are not required or expected, and all urgency from others is taken with a good natured serenity.

When the quality is high and the incentive great enough, however, to arouse all the forces possessed, these mentalities are often capable of a tremendous amount of accomplishment, from the fact of a wide range of mental resources and the vitality needed to support intensive effort.

The vocational counselor must make both careful deductions and estimation of quality in mentalities of this order; the balance of mental aptitudes hangs quite even, but is subject to successful equations and judgments. It is exactly in these and similar instances of vocational uncertainty that the
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vocational counselor proves his expertness as well as his professional value. Generalities are always worse than no opinion. If the vocational counselor cannot arrive at other judgment than broad generalities, he had better refuse to recommend a vocational course. The vocational counselor is not responsible for the fact that some people are not highly specialized mentally, or are not adapted as well as others to a highly desirable vocation. Except through the path of intensive activity of high range specifics the unspecialized individual is at a disadvantage in highly competitive positions.

Face b, Fig. 224, the dot-line analysis, is another illustration of the evenly ranged mentality throughout the greater part of the analysis line. The exception is the relatively high analysis, synthesis, judgment, imagination and skillfulness, supported by acute observation, system, order, equity (as judgment of property values), propriety and Defense.

These specifics, standing as they do in advance of a powerful line of faculties, indicate, without much chance of doubt, high managerial powers directly applied to economic problems in property values and investments, widely distributed in kind or in regional relations, and closely dependent upon a reasoned-out constructive policy. The nearest approach to vocational adjustment in such a mentality is that of a commercial bank manager or the chief officer in the investment division of such an institution, and in the distinctive field of receiverships.

The dominance of Reason would incline this mentality to move slowly except in emergencies; the highly modeled nose would demand a constant pressure of activities in all subordinates and would influence associates in a similar intensity. The rest of the powerful Will would exercise great stability in habits of executive methods or in the manner of promotion of influence and power.

This line of face b and the line of face a are within thirty per cent of the maximum line. This does not imply equality of ability in the two mentalities. Each analysis line must be rated, as a whole, by the quality of the individual mentality. This may be illustrated by the engine which may be a one-horse power or a thousand horse power, but in either case well adapted to perform a certain kind of work, but not comparable part by part with the other. A percentage chart upon which all men could be rated in their proportions to each other would be rather an inconvenient document, just as it would be somewhat inconvenient to write a million by successive units.
Charting and Rating Vocations

Accomplishment heights charts must be rated in some other way, as instanced by the salary, the positions held, the professional credits of achievement, the degrees granted or reputations won in the competitions of human efforts. A ratio of natural ability or of vocational accomplishment as compared with all other men is also difficult and would be largely hypothetical. But to say that a man with assessable quality and opportunity can undoubtedly reach such or such a degree of success in a particular vocation, is highly within the tentative bounds of reason and an essential part of the vocational counselor's function. He has, however, the choice of direct or comparative assertion, that of reaching greater success in one than in other vocations, rating the vocations by their general difficulties and requirements, which is unquestionably a firmer basis of comparison or rating than any other standard. A more extended treatment of this part of counseling or employee rating will be made in later lessons.

In face a, Fig. 225, the angle-line analysis, the end of the nose indicates high observation and mental-focus, and equally high intuition with slightly lower esthetics. The upper lip has at the maximum line kindness, with candor and mutuality very nearly as high. Just outward from these specifics of Amity are tact and desire for progress, followed closely by courtesy and hospitality. Object-form and motion-form are vocationally near the line.

In choosing the vocation it is at once evident that with Reason below 90 the sciences are out of court; with Construction averaging 85, the constructive trades and professions are also not to be chosen. All Number specifics fall below 90; the calculating vocations, including the higher mathematics of Reason, must be avoided. The face is quite evenly balanced in the Will, but is too slender for executive life unsupported by high Construction, Reason or Number.

The range of desirable vocations falls within the attentive, observing, intuitive and friendly fields, as a combined field. Social welfare, industrial welfare, as, specifically, the management of a service department in a corporation, would supply the exercise for the dominating specifics of this face and line. He inclines to be over-kindly and generous. Should be advised to provide for a rainy day, to cultivate hardihood against disappointment or disagreeable tasks or actions; should strengthen pride and love of power; should avoid letting the compliments of others influence him into overdoing for their benefit, or in failing to demand what his services are worth. Rather
Angle-line, a.

Dot-line, b.

FIG. 225
small specific **freedom** and **independence** are apt to work against his promotion due to his own lack of equitable demands and his oversupply of forbearance.

In face b, Fig. 225, the dot-line analysis, the maximum is reached at several widely spread parts. It has “high peaks” at **observation**, **mental-focus**, **scrutiny**, and at **vocabulary**; it rises near the high line at **object-form**, **esthetics**, **imagination**, **praise**, **emulation**, **display** and **rhetoric**.

Every one of these points is a letter in the publicity vocations. Rather smaller **Color** ability would draw the choice away from the advertising color arts; the higher **vocabulary** would reach the descriptive advertising field, supported by the other specifics noted above, while fairly large executive regions would incline him toward the conservative lines of publicity, correspondence and operative activities.

There are hardly any demerits in this line for this vocation. **Praise** and **display** are a little higher than need be with the volume of optimism shown by **good will**, **trust**, **zeal** and **urbanity**. **Imagination** gives commercial vision somewhat steadied by the executives. Though the analysis lacks the evenness usually found in publicity men, its specifics are fairly true to form.

The vocational counselor will frequently find a problem of great importance in the mentality of men who anticipate following what may be called the vocational path upward, the old problem of beginning at the bottom and working to the top of what casually seems to be the sequences of the trade or art. These instances often arise from a condition of small opportunity in the early life of the individual, and where there is an ambition to study overtime, interval or part time.

Sometimes the desire to rise drives to intensive effort. The vocational counselor is appealed to for advice in matters of every description bearing upon the fields of personal ability and of vocational opportunity. In these as in other conditions of vocational direction, where decided changes are advised, or even where no change is recommended, he is under heavy moral obligation, and misjudgment and misdirection may cost his client years of wasted effort, and several thousand dollars in loss of time or money. It has no parallel with simply hiring a man or discharging a man. It is work where incompetence or haphazard judgments are viciously bad, often irreparable.

As an illustration of close parallels of such possibilities, we include here three faces of two men. Face a, Fig. 226, the angle-line analysis, was advised to become a machinist,
Angle-line, a.

FIG. 226
and resented the tacit limitation, and then the express advice not to expect to reach success in mechanical engineering or exacting mathematical work. His analysis gave Construction as the dominant in all of its specifics. Form followed closely with clear and intensive object-form; quantity, calculation and separation of Number was, one could say in the absence of other closely supporting faculties, a fair essential to Construction. The face was well modeled and indicated good quality. The question arose: Shall this young man make the struggle and sacrifice necessary to become a mechanical engineer? Attention was at once directed to the analysis required in higher mathematics, in the equations and problems of energetics and thermics. Analysis falls below 80; verdict, impossible. Firmness, perseverance and fortitude were below the average of the mental graphic line. The economics of engineering would receive little support from the specifics of Economy ranging only between 50 and 60. The specifics of orderly procedure, Memory of facts, system and time were only slightly above 70. No judgment could be rendered advising a mathematical, mechanical, or any other kind of technical, mathematical vocation.

Face b, Fig. 226, the dot-line analysis, had Construction near the high line. The specifics of Form were five per cent lower, relatively; those of Number were five per cent lower. Thus far face b has no advantage in mechanics or mechanical engineering over face a. But our attention turned to analysis and the vocational relation at once changed, for here were the possibilities of those equations of functions, properties and powers, of the heavy and continued application of reasoning to complex formulas that were impossible to face a, but absolutely necessary to the vocation of mechanical engineering. On considering the volitional regions to be studied later, the specifics firmness, perseverance, fortitude, intensity, utility and hardihood sprang up within the vocational field of the prospective mechanical engineer, and added management and executive power in considerable degree.

Under the stress of counsel and of actual practice, several specifics were later raised into concordant support, because necessary to the practical execution of the engineering plans and purposes. The letter “P” marks the positions to which these specifics were advanced in their proportions to the other parts of the dot-line, and the changes that took place in the face between early and mid-maturity are shown in Fig. 227. In the latter portrait the nose is slightly broader at the end.
above the wings, the septum a little sharper; the bridge of the nose is higher from the face, the upper regions of the parenthesis are fuller and more keenly carved. All of these show the intensity aroused by the possibilities created by the high Reason in support to Construction, where the profession led to a moderate amount of executive purpose and opportunity.

Differential Ratings:

The vocational counselor will find many instances where, in individuals fitted naturally for the same vocations, there are great differences in the non-vocational specifics. These illustrations prove the futility of attempting to judge vocational aptitudes by mass resemblances. Where the specifics required are widely scattered and rather wide in number, the resemblances of local regions are greater than in those vocations where the specifics are few and mentally clustered, as found generally more often in the trades than in the professions or industries.

Welfare Supervisor:

The dot-line face b of Fig. 228, and that of Fig. 228A, are of two welfare experts. These have a remarkably parallel analysis line, yet with variations in the specifics that in each require the presence of other supporting specifics in order to sustain the vocational rating and aptitudes.

The vocational regions rated between 90 and 100 run closely along the normally required retentive and reflective regions: at analysis and judgment in Fig. 228A, and at rhetoric, vocabulary, foresight, intuition, esthetics and mental-focus in face b, of Fig. 228. The specifics object-form, motion-form, individuality and observation have larger regions in the dot-line analysis of Fig. 228.
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Under the Rulership regions firmness, perseverance and fortitude of face a, Fig. 228, are nearly balanced by the somewhat different, but supporting, praise, emulation and display of Fig. 228A, particularly when propriety and its impulse toward production, frugality and intensity are in the vocational field.

The harmonized ranges of specifics with their Aspirations on or above the supporting line influence and quite carry these mentalities into the welfare fields.

Lines similar to these are often difficult of vocational solution, the Aspiration and Culture faculties having here great influence on the choice of and gratification in the vocation.

Considerable changes must be provided for in carrying the analysis of welfare management and supervision into a different vocational field, that of a large industrial plant, where such subjects as educational methods, factory hygiene, housing and club activities, lunch rooms, wash rooms, rest rooms, libraries and the general conditions of the industrial environment must be overseen.

In such plants there are two distinctive forms of welfare management. The first is where only a small number of assistants is required, where the work is chiefly suggestive, social, encouraging and personal in matters of health and comfort.

In these instances the welfare supervisor seldom needs to exercise direct executive powers of a highly organizing kind. There must be, as in the dot-line, a fair and firm support of the faculties of Stability, Integrity, Defense, and those of the Aspirations. The sensibilities must be high in order to appreciate the quality of environmental surroundings. These are shown in face b, the dot-line analysis.

In the industrial plants or large institutions where there is to be carried out a program of welfare under the control of
the organization, with the volume of activities requiring an elaborate force of employees and a large expenditure of money and effort, as in the case with thousands of plants, the vocational requirement is of a different kind, though not necessarily of higher order, since in this field there is a positive control of conditions and an organized staff in the department.

In Fig. 228, face a, the angle-line analysis, analysis, imagination, skillfulness, observation, enthusiasm, urbanity and serenity stand out in that order, all very high. But these are supported by very essential executive specifics so closely that the expression of these executive powers is absolutely necessary to the vocational life of this mentality.

The specifics of Stability, Integrity, Industry, Liberty and Economy, and in less degree, of Caution and Laudation, demand opportunity to gratify their abilities. Here, then, are those powers that make the organizing, managing, forceful and dynamic welfare supervisor. This face is too executive to be satisfied with medical practice, too direct and exacting to do religious welfare and promotive work, while the large sense of freedom and domination would drive him from the systematized educational field, if there were other possibilities. Hence, we find the composite of the welfare director and superintendent of industrial education. Such an analysis line is often found in the regular school work, more often in the universities and in the commercial world, particularly where some phase of personal relationship is an intensive factor. But in these vocations there is generally, for one with such an analysis line, dissatisfaction and restlessness, as noted above, and a quest for a wider range of expression or more varied activity than present systems offer.

Compare the faces of Fig. 228, angle-line a, and of Fig. 229, angle-line a. Form, Color and Number rate much alike, as also do Attention, Memory and Language. At intuition, foresight and analysis there is a variation of ten per cent, offering a highly different mode of approach in matters of personality and in the manner of reasoning. In the Culture faculties the lines are much alike; in the social Aspirations Fig. 228 a, runs much higher, is more emotional, more personal and genial, time using, sympathetic and physician-like than face a, Fig. 229, and much resembles face b of Fig. 231.

In the dynamic regions, Stability, Industry, Caution, Economy and Defense again are closely parallel in the two faces. Both are executive, both are uneasy unless exercising constructive and reflective effort. The latter face is more formal
and coolly intellectual, and less sensitive to adversative conditions of others, but highly intensive in the intellectual world. This mentality is admirably fitted to the organization and administration of university education.

In face b of Fig. 229, the dot-line analysis, there rises a high form of civic welfare and personal protective supervision. The Culture and Aspiration faculties are so high along the maximum line, and Dignity, Caution, Economy, Aversion and Destruction range so low relatively, that the whole Intellect and the Aspirations have full sway to move in any philanthropy, in any ethical ideal, in any organizing purpose they choose, without dynamic hindrances. Integrity, Liberty and Defense are the dynamic powers that sustain effort in this mentality; these are, however, hardly enough to give a commercial purpose to the whole line.

In Fig. 230 we have a comparison of the mentality lines of a jewelry salesman and a merchant jeweler. The differences will be seen chiefly in the executive and calculating specifics. As a whole, the line of the merchant jeweler is complex and elaborate; few vocations or industries require as widely ranged high abilities; this is due rather to the nature of the industry than to its variety or products, or the size of the individual business. In many merchandising industries several local mental regions are involved, but few equal in compass the regions of the merchant jeweler.

The jeweler must realize the concurrence of artistic presentation, the extended basic principles of art of many periods, and the suggestive and actual color values and harmonic relations arising in object-form, individuality, the sense of hues, tints, luminosities and diffractions of the five precious and many semi-precious stones, and of jewelry settings. In the metals he has to exercise great artistic sensibility to all the elements and suggestions of metal ornamentation, and the attractive and orderly display of these wares that are often not open to the treatment accorded merchandise that varies widely from retiring to extreme points of interest in their congregation, display and selling suggestions; hence his esthetics, intuition and imagination must have power enough to do their parts.

The distinction between art and utility must be met and their values, or the sacrifice of one to the other, considered most carefully by the merchant jeweler and his sales force. The relationship of curiosity, egotism, prodigality and poor ment in the patron must be considered. The fact that the
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public has much less ability to determine the values of jewelry, the purity or quality of gems or metals, than of nearly all other commodities, necessitates an irreproachable reputation for integrity in the merchant jeweler and his sales force.

These conditions demand the exercise of Integrity, Stability and judgment on the part of the buying and selling staff. In addition to these abilities the merchant jeweler must have fairly large vigilance, propriety, aggression, protection and commercial courage. Thus art, verbal presentation, technical knowledge, optimism, aspiration, industry and business ability are all severally involved in this business field.

The prominent specifics of the dot-line analysis of face b, Fig. 230, held fairly consistent in the mentalities of over one thousand successful merchant jewelers and did not vary markedly in one hundred and ten others who were also successful though deviating from the composite line at one or more of the faculties of Language, Number, Amity, Hope, Stability, Defense and Impression.

The retail jewelry salesman must, like his principal, rank high in a wide variety of faculties, and his selection is in consequence a difficult and important matter. His specifics should run close to the order given in the angle-line analysis of Fig. 230: object-form, individuality and vocabulary very close to par; hues and observation at 96; intuition at 94; skillfulness, imagination, kindness and courtesy at 95; the Aspirations fairly high; utility and vigilance at or above 90.

It is noticeable that the successful clerk often fails to become a successful merchant. Artistic sense, fair descriptive ability, good order and display abilities, the sense of utility, the appreciation of truthful representation, comprehension of the facts of adornment and ornamentation, are the prime factors in the jewelry salesman. These he may have and yet lack the business acumen shown in face b, the dot-line analysis.

Face a, Fig. 231, the dot-line analysis, is that of a remarkably fluent and intuitive minister, synthetic in reasoning, often judging questions by general masses of information, by analogies that convey a perspective vision of the idea or ideal portrayed by the words, not vividly imaginative in the matter of functional relations or effects, but playing intensively with the cultural and inspiring emotions of his audience. His own emotions rank high and fall with easy cadences in his speech, are carried with graceful expression and gesture, though always severely under control.
Conservation of personal energy, assertive confidence in his faith, pride, and the love of power he can wield in his cause, and a consistent firmness all mark the general tenor of his accomplishments.

In face b we have paralleled face a, except in a few specifics, some of which are not exacting in the minister, as in this instance in object-form, system, and lowered mental-focus. We have varied the line at certain faculty specifics, changes which have made vocational distinctions great enough to change the chosen work in a relatively great number of instances within our knowledge.

These points of departure are the specifics analysis and observation, at the dominant line; propriety, frugality and selfishness raised, though not to the dominant line; and aggression, protection and courage, with their self-defense, at or near the dominant. In a number of men these variations mentally forced them into educational executive work; in other instances the interest grew possessingly toward welfare work independent of sectarian conditions, and several men turned to aggressive literary fields where the defensive, economic and analytical abilities were exerted, as one expressed it, "With a compelling force I could not find freedom to assert in my former field."

With equal forcefulness, the high range of Culture faculties, the Aspirations and Inspiration, and the presence of only moderate Economy, Defense, analysis and Construction have drawn others into the ministerial field.

Specific Factors of Vocational Analysis:

Vocational analysis includes all of the varieties and quantities of mental faculties of the man and of the mental and physical work done in his vocation. Naturally such an analysis and synthesis divides into many interrelated and interdependent parts. Some of these parts are the ratio analysis of the man's abilities, of the work he is to perform, and the process or condition under which the work is done.

The word "job" now commonly used to distinguish a particular kind of work has not a very distinctive meaning, but is commonly convenient, at least. Job analysis, under its inverted meaning, ought to include a description of a regularly done thing and of the specific training needed to do it. Job or place specification (not work specification—the work is in the man doing it), may mean a specific description of the
means and the product created in a particular occupational position, since in different firms there is apt to be a varied division of the sequences of the same kind of work or process or producing method. All forms of job-analysis with which we are acquainted are descriptions of the things to be done and of the training and experience needed to carry on the vocation, and have only an inference relation to the nature of the man who is to do it; in fact, not a single instance has come to our attention of a description of the mental abilities required in the job that would not equally apply to every other job.

Take also the highly indorsed man-job specifications: “Character: Ambitious......, Careful......, Energetic......, Intelligent......, Loyal......, Neat......, Reliable......, Tactful......, Temperate......, Thorough......, Willing ......”* It is not supposed that these specifications are not required or valuable in other jobs or that experience is not valuable in judging them.

The descriptions of the training and experience required are useful as a guide to the immediate installation of the employee, especially when there is included a distinctive educational qualification delimiting the probable vocational grade. No particular ability is required to understand the specification except familiarity with the particular task described.

Every distinctive trade, art, profession or industry requires, for its highest expression, some distinction in the mental analysis line, or an equally evident variation in the quality and texture of the nervous system of the individual. To this series of facts we call attention, in order that the vocational counselor may realize that the ratios may be right but the quality much too fine or much too coarse to warrant the vocation. Not realizing these truths of mentality has been the origin of endless errors in not only vocational analysis and “character reading,” but in our whole educational system. To narrow the field of possibilities and make a choice readily within a reasonable time given to judgment, the counselor or employment manager should train his thought to the mental process of mass elimination of other vocations by selecting those that arise from the dominant faculties, or from the dominant faculty if it stands fairly alone in the mentality.

As an illustration: Although analysis enters into a great many vocations because of its constant tendency toward reflective detail and its other capabilities, nevertheless where analysis

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is markedly dominant the literary and artistic and attentive vocations can generally be laid aside and attention at once be paid to those that require a dominating analytical Reason. This is true in a comparative way with every faculty from which vocations arise. The field is then clear for an intensive local choice, with its associations of leading specifics.

In industries employing many people the tendency has been to give very little time to hiring the individual, to take more time to discover his antecedents in vocational and nativity matters, and to expend a vastly greater amount of time and effort in his training, education, and experimental adjustment to his work.

Until a man's specific abilities could be read in advance, no other way was open or practical. Local experience and his past performance, when known, were the only criteria the employer had.

In order of importance for the ultimate good of the industry, matters must, to a moderate extent, be relative. Firms and industries differ as widely as do individuals, so that any formula must be qualified to the industry or the firm. But there are fundamental elements that underlie the whole question. To pick an office boy for an eventual promotion to the presidency requires something akin to fatalism plus prophecy. That is one extreme of vocational fallacy; not so much because it cannot be done, as because there enter a thousand conditions that are subject to chance, precedence on the part of others, the drift of interest in other locations, waywardness in the ambitions of the boy chosen so far ahead of his maturity of judgment, and other reasons beyond cataloging.

To pick a man without natural mechanical ability because he has done some mechanical work indifferently well, or thinks he can do anything he tries to do, and then to expect that a few weeks' training will put that man in the ranks of fair or high grade mechanics, or in fact, to expect ever to do so, is a less irrational, but very certain mistake. Whether the choice of his prospective vocation is made in one minute or one day matters only a difference of about six or ten dollars in the cost of choosing him, but is rather expensive later on.

**Past History Method:**

If a man can prove by his experience, subject only to the peculiarities of the particular firm product or association, that he has so fully mastered his vocation that he is fit for the
place he is desired to fill, then quick hiring is logical, special training or oversight is logical, and a ten to thirty minute vocational analysis, plus equal time in conference, may generally be dispensed with, and the personal record blanks filled in by a record clerk, followed by the proper orders and recommendations. But even the successful man is often open to suggestions from the vocational counselor that are of great value to him, and realizing that he is understood gives him a sense of security or a caution that is well worth the cost to the employer.

When an applicant’s past history record is not competent as evidence, is not a vocational accomplishment record that is satisfactory evidence of specific ability and character, any rapid-fire hiring process is an expensive one for any of the more particular classes of employees, and generally for all classes or grades of vocations. The low grade employee in any grade from laborer up is an expensive employee; the misfit employee is very likely to be a comparatively low grade employee in the misfit vocation. In either case special training is much slower, comprehension of the task set is slower, control of his effort more erratic, and his turnover more subject to irritations often beyond his own moral or economic control, than would be true of a man of the same quality in a natural aptitude vocation.

Hiring in “bunches of fifty,” may do fairly well for shovelers or freight loaders who follow those vocations, or follow job bosses in gangs, because their social relations are those of gangs or neighborhoods.

Prediction the Keystone:

The Merton Method is predictive; it sets out, from its known facts of mental abilities of the individual, what that individual can do better than he can do anything else; it can gather around that vocational and character prediction the facts of greatest probable causes of failure in that vocation; it can go to great specificity in regard to the means or attitudes that should be taken to avoid or correct the danger of failure either in vocational choice, preparation, or in personal conduct. The extent to which these forms of advice or determination can be carried rests largely with the intention under which the analysis is made and in the knowledge of the counselor.

The Merton Method does not ignore the past accomplish-
ments of the individual; it does not pretend to determine the
kind of experience the individual has had, even though those
who have studied the method often do so measurably well.
It is not necessary to do this. Trade and other tests can
prove him up in his present vocational state.

If an individual has a vocational history or an accomplish­
ment record to date, it can generally be known and verified,
and experience and his desires compared with the immediate
service to be taken up. The Merton Method can at once
confirm his continuance, his assurance in the new position,
the points of his mentality to urge to greater or less activity,
and his probable growth or advancement in or dissatisfaction
with the contemplated position.

If he is successful in a vocation arising from his second
power faculties, the Merton Method can predict that he will
succeed much better in a vocation arising from his first power
faculties, and determine which faculties those are, and what the
vocation should be. His progress holds a constant ratio to the
"exponents" of his vocation; he resembles a loan at compound
interest; where his third or second power faculties increase
his vocational values as compound interest at two per cent,
his first power faculties may increase his values at six per
cent, or three times as fast. So also they will increase his
value to his employer, not only through his actual work, but
because he will not be inclined to drift from place to place,
from "hiring" to "firing," from ineptness to ineptness, from
no-pay time to another no-pay time. Nor will his employer
be in the dark as to whether or not there is any position he
is naturally fitted to fill with a reasonable degree of satisfac­
tion to both.

It is not average abilities or average success or average
benefit to the employer or employee that ought to be desired;
these should approach as nearly to the maximum as health
and enjoyment will allow. Rightly placed and surrounded,
a man should have much of the mental and physical tonicity
found in good sport, a feeling of honesty in effort, and of re­
sponse to recreation and rest. The man misplaced vocationally
and the man with a grouch carry a heavy counter-load.

It is an error held by many employers that an employee
has only the pride, egotism and sense of recognition found
answered by the pay envelope, and that he does not realize
the fact that loyalty to the firm should have a phase of loyalty
to himself expressed in other terms than wages. A well
intentioned employment manager may not be expected to gain
favor by personal intimate inquiry and solicitude concerning the well-being of several thousand employees of a corporation; but there is such a thing as a corporate personality. A partly recorded inquiry into an employee's capabilities, ambitions and desires, a proved interest in his worth, forms a sensible energy of industrial reputation and good intention, and can so permeate a company's atmosphere that, like gossip in a village, it travels to every one, but, unlike gossip, leaves an indefinable esteem and interest wholly apart from the very realistic compensation of pay day. Such an atmosphere is a utilitarian fact, one that links up with the innate tophead of even the common laborer, one that makes men boast of their abilities, one that attaches value to their personal history as certainly as does their own name. It prevents many a useless still-hunt for a "better place."

A brief recorded vocational analysis can be made, to the mind of the employee, the beginning of such a realization of employment relationship under which the employees and the firm can gain a view of each other's aims, reciprocal interests and working possibilities that will lend much to the sense of mutual interdependence that is often found in a highly intentioned fraternity.

Many years given to watching the line of accretion of accomplishment in piecework occupations, and in the clerical as well as the professional and executive vocations, have proved to us the utility of a careful vocational analysis of every individual who is to do work worth calling a vocation.

Accomplishment heights graphs of individuals extending over considerable time show that some men rise steadily and slowly to their maximum, some move up rapidly and fall back considerably, some move erratically and yet climb high, and others stop far below any anticipated performance. The rate at which men accomplished their educational preparation is so far from being a constant or a dependable indicator of their vocational performance, that it is quite limited as a criterion. This is partly due to the fact that the education is often not in the right vocational field and rates the man too low for the right one; or, being largely memorization, over-rates the productive and creative abilities.

A railroad bridge painter should be as dominantly a railroad bridge coarse brush painter as a portrait artist should be dominantly a portrait painter. To say that one needs only low quality and the other needs high quality and culture does not change the fact that both should enjoy their work
better than any other work. The natural fence painter will do his work much more easily than an equally able man who is not one, and who hankers for a chance to do something else every hour of the day. Few men can be really attentive to work they do not like.

Many men are indifferent to the work they are doing, yet do not realize the fact, nor do they suppose that another vocation would give them intensive interest and greater success. In a single somewhat varied industry we often find sixty per cent or more of the employees misplaced in that one industry, and yet often less than fifteen per cent of the same men would need to change to another industry in order to find a fairly natural vocation. Since many of these men are doing fifty per cent well, the product of the whole firm is brought down to a much lowered average, even when all are doing as well as they can. Right placement at the start would have saved a great waste of effort, much vocational indifference or unhappiness, and an enormous percentage of employee turnover, and would have automatically increased production through natural interest and ease in effort.

It is not to be supposed that the employment manager should walk into an industrial organization and dogmatically swing employees from one position to another, turn the whole force upside down and rightside out as fast as he can make analyses of the individuals of the organization. Neither can he, by the most rational advice, make over the individuals who are wrongly placed but doing their work, under whatever pressure, in an average creditable way, yet able to do something else much better after due preparation.

The vocational counselor can generally aid employees in carrying on their work by pointing out or suggesting the use of faculties that blend with the work, that are adjuncts to the mental operations carried on. It is partly for this purpose that some of the extended descriptions of specifics are given.

It is almost invariably necessary that the employment manager carefully select replacements for vacancies, gradually and judiciously build up or remodel his personnel through first choice of potentially good employees with natural aptitude for his open positions, and then calmly choose his understudies for promotion. Thus his function is to perfect the present action and requirements of personnel and gradually to reinvest or reinstate the misplacements of the past without breakage in the chain of personnel relations.

If this process is a longer one, taking time for each individ-
ual employed, and demanding a personnel director of high quality, salary and specific preparation, so also is it the only offset to the much more expensive, time consuming, discouraging methods generally pursued, and in which the personnel director often has no other choice than enforced rapid snap judgment and empirical selection, leaving to chance the aftermath of try-out, education, dissatisfaction, unfitness and discharge.

Every industry has its own special vocations, inclining to majorities in particular parts of the work, with diminishing numbers in other parts, depending largely upon the variety of the product. Often there are employed constantly a number of men belonging to the journeyman trades, as carpenters, painters, plumbers and others. These journeymen are supposed to have learned their trades in outside work, under bosses, and to have fairly mastered the use of their tools in common practice of their trade. In many instances the journeyman has but a makeshift knowledge or practice, due not so much to his lack of ability as to the lack of training, supervision or time of trade experience. His unknown possibilities are substance for the employment manager; the potential values are important.

The process employees, who in former years were generally trained as apprentices or by a period of low wage probation and direct instruction, are now the employment managers' "house of worry." Applicants for positions run all the way from inexperienced beginners who do not know what they can do and who have no preference except to get the largest wages they can start with, up to the pastmaster of his "job," who has left a position for some cause.

The applicants, especially on piecework and for jobs that can be learned in a few weeks' time, all beginners in every vocation, all those who have not fairly well succeeded, or those who are in line for promotion, are especially objects of radical turnover saving through the Merton Method of analysis.

The heavy turnover falls upon those jobs in every industry where the stress of mental or physical accomplishment rests exactly upon one or two specifics, as, in dyeing, upon hues and sensibility to tints, in machine stamping upon object-form or motion-form, in filing upon verbal memory, or vocabulary, and in bookkeeping upon calculation. These are examples of thousands of instances, where the test falls upon a dominating specific, which, if not high in the applicant, is subject to great
fatigue, error, poor work, irritability, and other defeating effects of a normal day's effort, but which are simply counted as dissatisfaction or incapability. Knowing the job mental specifics, the employment manager can predict failure in a great majority of cases, and can predict the right line in even more instances.

A knowledge of the Merton Method greatly facilitates making job mentality analysis, and with a reasonable amount of experience the interviewer can read the applicant for the ordinary run of semi-skilled or routine or operative positions in as short time as he can make any other form of vocational inquiry. The more complex vocations will require closer analysis and careful estimate of quality and disposition. In later lessons we shall consider the matter of recording both job analysis and mentality analysis, along with some other factors now successfully in use in representative corporations or firms.

While the student should master this course, learn to make as exacting analysis as he can, it is not necessary that he master the mentality requirements of all of the vocations, unless intending to enter public practice as a vocational counselor, where he will need the widest possible grasp he can get of the vocational specific requirements and the means of culture in attaining the vocations, or the preparation that most closely fits one for the particular work he is adapted to do.

On the other hand, the employment manager and personnel manager, who is experienced in a particular industrial field and has the great advantage of practical knowledge and experience in that field, needs only to take up for exacting study those vocations that are included in his branch of industry and upon which he will need to pass judgment in selection and promotion. This will generally limit his field of intensive application to about one-twentieth of the differentiated vocations; and the office vocations, and the journeyman trades which are practically the same in function in the great majority of industries, constitute another one-twentieth. While it is impractical to treat all of the 8000 or more occupations because of their duplication of function or job work (as illustrated by hundreds of carpenters and box makers in different industries), and of which about 1400 are distinctive in the mentality or quality of their work, many differentiated vocations are treated by specifics in the faculty dominant lists at the end of the lessons, others in the analysis charts, and still others in the tables.

The harmonic analysis line often runs within twenty-five
per cent, as in face b, Fig. 222, and face a, Fig. 229. The common line of variation runs nearly forty per cent. The analyst often inclines to narrower and narrower ratios, an error in analysis with regard to the person analyzed, since it does not throw into sufficient relief the high and low points. People unfamiliar with the rating of the individual counselor will read the analysis line as a line of uniform power, instead of the variations realized by the analyst. For these reasons and to make the analysis specifically valuable, the wider range percentages are best. Without the face to act as a criterion of range, another counselor could not note the relative mental variations. It is advisable that students make fairly wide range tables of their average faces, a range of about twenty-five per cent, as in face b Fig. 222, face b Fig. 223, and face b Fig. 230. When the range is hypothetically wider, extend it to forty per cent, as in face a Fig. 226 and face a Fig. 225. When fairly extreme in some considerable regions, extend it to fifty-five per cent, as in face a Fig. 223, and face a Fig. 222 approximately at fifty.

It is understood that the percentage is purely tentative and quantitative as a ratio from which judgments are to be made. A series of words of quantity or of proportion would be just as tentative and far less definite, less easily seen or equated, or proportioned. Thus analysis and protection with Inspiration of face b, Fig. 231, might be spoken of as extremely large, and solitude and hardihood as extremely small, Reform and Impression as being large, or Color, Industry and Caution as being small. But one would need to equate the differences between extremely small, very small, small, medium large, large, very large, and so on, with terms that were themselves not quantitatively definite, even in their most orderly statement.

There can be only a tentative basis of comparisons of individuals with each other. One analytical line or rating cannot be directly compared with another, except upon the basis of the quality of the individuals. This fact has been dwelt upon quite fully throughout the lessons. Comparative vocational accomplishments and degrees of ability can be more nearly rated than where the rating makes a comparison with the whole vocational field, as the problem is enormously increased when the latter comparison is made, and standards of accomplishment are, in themselves, subject to the “personal equation” in every instance. The student should have in mind the right specifics, the quality, the circumstances, and the conditions for the vocational venture.
MERTON COURSE

VOCATIONAL COUNSELING

and

EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

BY

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PART TWO

LESSON SEVENTEEN

The Energies of the Will

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Distinctions of Origins:

Nearly all vocations arise from the faculties of the Intellect. That great fact is due to the natural law that the faculties of the Intellect and of the Sensations are the receivers of information, are the chief recorders of facts, are the elaborators of ideas and knowledge, and carry on the mental activities described in Part One.

All vocational dynamic or executive efforts, of various kinds and in various degrees, arise in the Will. This fact is due to the natural law that the energies of this region arising in the volitional faculties are positive, executive and propelling; are the forces that make for rulership, and in action for cooperative accomplishment; that seek economic gain and ownership, that enjoy commercial enterprise, and generate personal and personnel control and management in individual and industrial relations.
This interrelation of the Intellect and the Will shows us clearly that vocations need more than the mental power formally to create, plan, and desire them. Vocations must be carried on by expressed power, must be executed, must be made a purpose to fit or satisfy a demand of the mentality or of the body.

**Nature of Executive Energy:**

Executive mental energy, like dynamic physical energy, is Energy at Work. It is applied power; it is applied force of a definite class; it is concerned with objective results; it is as distinctive as any other kind of known energy. Consequently volitional and executive energies must be created or generated by faculties having distinctive qualities, having ability to form or transform the energies that come to them or pass through them, into their own particular characteristics or dispositions or purposes. They are energies that are no more like—not as much like—other mental energies, than is light like heat, or electricity like gravity, or cohesion like sound, in the physical world.

Experience seems to prove that the faculties of the Will demand external or material results. In a general way they are apparently indifferent to intellectual accomplishment, except as a means toward gaining some form of executive and industrial power by using their energies to influence the world around them.

To the effects, methods and products of these faculties we shall give our time in this part of the course and a general survey in this lesson.

Our first step, then, is to realize how this power can be externalized, how applied to the purposes its demands arouse. As its first means and under its own nominal control is its so-called physical body.

**The Will and the Body:**

The study of the Temperaments told us that the Intellect was in close sympathy in action with the nervous system throughout the body; that the Affections were in close interrelations with the nutritive system and its organs of circulation; and that the Will was in a similar relation to the bones and muscles, or motive system of the body.
The Energies of the Will

This at once determines that the Will, with its governing forces, is intent upon bringing into existence the methods or processes that satisfy its purposes, that its aim is to externalize the ideas and judgments of the Intellect, to put them into practice; that the Will must act with regard to outward things. To do any of these acts it must have a body to express power through and to directly "lay hands upon" objects or persons.

The first or nearest expression of the Will, then, is control of the voluntary movements of its own body through the muscles and bones of that body; its next expression is through the power exercised by the body upon objects outside of the body, and, third, upon the actions of others through their willingness to do what we wish or command them to do as our agents.

By these methods we possess executive power, or the exercise of government over people or things. Just as a careful study of comparative mental and anatomical regions proves that local faculties exercise regional proportional control and stimulation over local muscular regions, so do the Will faculties exercise their own particular kinds of influence over the total conduct of the individual and attempt to exercise the same kinds of particular influence over other objects or individuals. This is the source of the executive attitudes. The vocational counselor, either in public or private practice, will need to realize many phases of these attitudes.

The Will as Applied Power:

As applied power the energies of the Will not only propel the organism they influence and control toward carrying out plans, but they resist efforts to stop their own operations, they resist change or obstructions as the Intellect directs, they charge the whole mentality with the energies of accomplishment.

It is clearly seen that these forces and activities of the Will are in marked contrast with those of the Intellect. Executive effects, something carried out in fact, is their primary intention or purpose.

The generally confused notions of what constitutes the Will, derived in the main from "introspective thinking," are due to ignoring the nature of mental energies and the necessary relations of the mental faculties. All notions, however vague, may stay in the court of philosophical opinion so long as they are purely academical and are not called upon to
answer questions in practice or to gain results in fact. But we must answer questions in vocational practice, and know why we answer them.

We must turn to the energies of the Will in order to find the energies of mental life that exert force through expressions of the physical body and through the use of other objects than oneself. As the Intellect is to formulate ideas of what actions should take place in order to gratify the wants and purposes of the individual, it falls as the purpose of the Will and its faculties to carry out those ideas in action. The co-ordination of the Intellect and the Will, through spider-web nerves from faculty to faculty and from brain to muscle, is necessary to the fact of physical action and dynamic expression, to the control of either people or things.

Executive control begins in various forms of self-control, and ends in the destiny of nations.

The vocational counselor will meet the question of proportionate executive ability in every assessment made of a vocational nature. The ability of the individual to develop and use executive, administrative, supervisory, controlling or resisting forces and abilities, is a part of every individual life or vocation.

In the absence of the right powers of execution, of these necessary volumes of compelling and governing purposes, the plans of the Intellect are left without support, are left without the required vigor of action, or the power of externalized accomplishment. The ideas, judgments, intentions, visions or creations of the Intellect can be only such until some other set of faculty powers puts in motion the body and the instruments of applied energy. These instruments may be one's own hands, may be other people in their kinds of work, through ordinary supervision, or other men in a board of directors, or any of the thousands of efforts of industrial progress.

**The Will Has Its Own Business:**

While John Stuart Mill's aphorism, "A completely fashioned Will is a completely fashioned character," is less than half a truth, nevertheless, the more complete the organization of the Will faculties, the better are they fashioned to carry into effect the concepts and plans of the Intellect, the better the individual is able to cope with the difficulties of any vocation, the more fully will he reap the rewards of effort and continue highly to make progress in proportion to his ability as a whole.
This is not due wholly to the fact that the actions demanded by the Will are in effect, or being done. There rests in the mentality the other fact of balanced powers, the additional control and steadiness that arises from a more constant purpose, and is in this way a moderator of the liability to excess in useless thinking, or of scattered ideas and intentions. "A completely fashioned Will" misdirected will never make "a completely fashioned character" or a completely fashioned anything else. The directive capabilities of the Intellect are
needed at every step. But neither can the most fully equipped Intellect accomplish much without the fundamental powers of the Will.

Mill’s aphorism, summing up much of the philosophy of the day, is less than half the truth for another reason.

A completely fashioned character is one that is influenced or guided by and expressed in or for a high range and worthwhile kind of aspirations and other emotions. If one cannot distinguish the difference between emotions and volitions, between the Affections and the Will, it is incomprehensible that he should distinguish differences between any kinds of action, or any organs or varieties of causes. Unless the term “Will” is set, as it seems to be in Mill’s idea, to include all forms of mental action and the organs of that mental action, it cannot be shuffled into first one exclusive meaning and then another, as Mill himself inconsistently did, even by a number of different authorities.

The organs or powers that are requisite for practical performance or for the disposition to carry into effect the directions of formulae, may include more than volitional organs or powers, but are certainly distinguishable from those that have, as their final function, no such powers.

When one frequently sees men with great intellects and known knowledge who fritter away years of their lives in mere acquisition of more knowledge of the same kind, and exercise no interest or effort or intention to make use of their knowledge, one must realize that capacity to think and capacity in practical performance are distinctly different functions. Men who can parallel the executive’s thought but cannot parallel his commands or actions, are plentiful. Deadly contrasts should, it would seem, prove something in philosophy as well as they do in practice. Men with large intellectual ability and small emotions, men with large intellectual ability and small executive ability or weak purposes or erratic governing powers, are frequently met. So are the reverses of all of these conditions of mentality. Men are found under similar environment, educational opportunities, social stimulations and causes for accomplishment, some of whom are dynamic and some who act parts under the will of others with the facility of segregated automatons. True, a philosophy of generalities can be twisted to fit every condition; when a condition arises that contradicts the philosophy, add another syllable or cut one off.
But needed functions cannot be added or cut off in mental operations without a considerable rift in the mental organs or in the resultant products. The vocational counselor will examine and utilize the specifics of the Will with great care, just as he needs to do those of the Intellect, or his judgments may frequently end in the "winter of his discontent." His advice must be such that it will not go out of style with each coming season; it often must last a lifetime. So long as a philosophy of mind floats over the heads of men, as the gloss of moonlight over the objects of a landscape, its defects are not deterrents to success, but when it compels a practice of specific life, the result must be calculated.

The Executive Attitude:

It is well thoroughly to survey the Executive attitude, aptitude and disposition, since such dispositions are largely constitutional. It is true that the Executive disposition may arise from a wide range of faculties and that its orders of predominance are not as rigidly specific as are the vocational orders. On the other part, Executive faculties are not as subject to mere formal cultivation as are the Intellect faculties. The Executive faculties have not only a manner, but a force, not only an aroused purpose, but a disposition, a disposition varying with the predominance of faculties and the intensity of the effect of the Intellect upon such a disposition.

We have noted that the common expression of the Will regions is positive in their relation to the rest of the mentality, even when they are not dominant. This offers another reason why the Will disposition is not easily changed. Parents often say of a wilful child, "I must break his will"; when doing so the spirit of the child
is often broken. The child is not simply turned into another direction with the old spirit of accomplishment, but is broken in forceful intention and strength of purpose. So, too, of men. When their Will is crushed they may "go to pieces" through loss of power of resistance to outward stress. It causes a condition of confusion in the mental field, similar to a broken up organization where leadership is lost and parts are unknowingly working against each other. The various remedies, modes of rebuilding and reorganizing cannot be considered here, but will be seen as we proceed through the coming studies.

Distinction in Culture:

The culture of the Intellect is increased by the various receptive, retentive and elaborative processes of its faculties. But in the culture of the Will or any one of its faculties, the faculty must act with regard to some condition or purpose outside itself. Nearly every expression of the Will, or volitions, has relations to other people or to other things. Among these forms of Will culture are the facts of conduct, disposition, purpose, possession and work; the action of oneself toward things, people or conditions.

In advising the strengthening of any Will faculty the vocational counselor or the personnel director should emphasize the fact of putting the faculty into action, whether the action is by nature executive or of consistent resistance. Resistance implies the expression of power. To exert Stability against aggressive action or opinions or other crowding purposes is as much the expression of mental power as is the exertion of Mobility in walking or lifting. To compel action by Integrity on one's own part can only come through the exertion of mental power, just as certainly and definitely as using one's fist in self-defense is an expression of mental as well as of bodily power. To resist spending money in order to buy a home is an expression of energy of Economy as truly as would be the acts of the body in building a home. Carried to any possible analysis of relations and results, the faculties of the Will are found to be cultivated by applied actions or resistances, some more dynamic than others, some more conserving than others, but all having the disposition to express their energies in some form of work, of mentality at work.

These are keys to the suggestions and advice, to the methods of influences and control, and to the selection of men for
positions, in the hands of the vocational counselor, the teacher and the parent. The grammarian emphasizes "the verb to be." In cultivating the Will faculties we should emphasize it as "the verb to do."

The Will at Work:

In analyzing the Will of the client, the counselor or employment manager must recognize the Will as a part of the mentality, but a part that is literally at work; its activities are energies at work, just as the activities of the Intellect are energies at thought.

The principle can be laid down that from a relatively inactive Will to an intensely active Will is a considerable mental distance, not traveled overnight, nor by any grandiose resolution to jump the intervening cultural distances. All activities of the Will and its volitions are the results of forces traveling over the nerve cells from other regions and being modified by the resident forces of the local nerve cells.

Will action thus becomes distinctive executive energy of many particular kinds, depending for its variety upon the nature of the faculty in which it is arousing resident energies, and upon the construction of habits that are taking place in those faculties. The characteristic of the Intellect in elaboration of ideas is repeated in the Will as the characteristic of elaboration of habits and modes of action.

The Topography of the Will:

In this face of the Duke of Wellington we have lettered the regions of the Intellect already studied, and outlined the faculty regions of the Will. The dotted lines are the blending margins of the faculties, within which are the specific regions. These will be illustrated and treated as we proceed with the individual faculties. These blending boundaries of the faculties vary some in different faces, and as we found in the faculties of the Intellect, the focuses of power of the specifics are expressed by some variation in location.

The variations of location of the specifics are not great enough to obscure their clear estimation, and all have determining lines or contours near enough to make their locations easily found. The student will readily observe the variations.

A series of full page faces will be included in the follow-
The Energies of the Will

ing studies, and it will be a good exercise to return to these after passing them and to mark on them the new specifics by their letter symbols.

The symbols of some of the Intellect faculties will be omitted from some of these faces, and the student should letter these in as a practice in memory and in locating the specifics or boundaries. The student will soon find, after finishing these studies, that one face is as easily read as another, and the main effort will rest in selecting the best vocational course.

The studies of the Will at work cling around the proportions of the Will specifics to each other, and of these specifics to those of the Intellect.

Two faces, Fig. 235A and Fig. 235B, are portraits of a powerful Norwegian at twenty-four and at forty-six years of age.

In Fig. 235A the evidences of great potential Intellect and Will are clearly seen. Whether the Will would master the Intellect in the race for vocational success, was a question of close and careful analysis. Whether the mentality would become highly technical in a non-executive vocation, highly executive but non-technical, or combine both phases in the pursuit of a technical executive vocation, as constructive engineering, naval or marine engineering and construction, or similar vocations, was a question for careful solution. There is hardly a feature of this face that time and effort has not improved, nor one in which there was not at twenty-four a prophecy of changing dominance or of masterly specialization. We purposely leave the vocational judgment open to the student, and advise locating the specifics as they are studied.

The Elaboration of Will Habits:

The elaboration of habits in the Will by constructing purposes, that is, by the repetition of an action or the reinforcement of a determined purpose by accomplishment, gradually builds up the powerful specifics of the Will. Thus the fact of walking is the fact of a group of habits gradually developed by "feeling out" the requirements of the muscles. So every mental Will specific is developed by the formation of local actions that become equivalents of habits, or actions more easily repeated than first done.
The Grouping of Will Habits:

The development of Will powers, of executive and controlling ability, is composed, then, of the creation of small actions and methods, and the mental effort of grouping these into more complex efforts. Each succeeding part of the mental work is that of gathering larger or more varied groups of activities, each action commanding larger results and giving greater confidence and certainty in the execution of the idea or desire that is to be carried out.

When these activities are matters of administration, the more powerful the natural abilities, the more readily, certainly and forcefully the result is attained under the conditions in which the effort is made.

When a man has large Will faculties, but when these faculties have had but little opportunity to exert or express themselves, we say they are potential; they have power that is not active; they may work awkwardly, even in small affairs, and disconnectedly attempt methods or command actions, except such as those that control the already mastered muscles of the body. In order that we may understand the term "potential" in this respect, since we are not dealing with chemical or physical facts, let us restate it in other terms. We may say of such a man, or of a youth without much experience, that certain faculties are quiescent, relatively dormant, unaroused, or unexerted to their majority amount of activity.

The mentality of man, whatever its organs are, when well and rightly acting, is a very economic organism; it is designed by its laws to do all the work it can do with the least amount of waste. Reasonably, then, when there is no particular demand upon a mental region, however small, to perform a
task, the region will reserve its energies for the possible necessary occasion. It is then relatively inactive, dormant, quiescent or, in fact, potential. It possesses increasing power to act when the current of direction or of association runs through it and calls for results.

The more powerful the region, in mass or quality or position, the greater its possible effects upon the proposed action. The largely executive mentality has, then, an advantage over the lesser executive mentality in all of the functions that are large or need to be large.

**Experience Versus Potency:**

The large executive faculties that have not much experience, that are quiescent or potential, may not be able spontaneously to compete with lesser volume executive faculties in another mentality that are experienced or that have been under duress of intensive exertion. But the man with larger potential Will faculties, working like the faster and stronger horse in a race in which it has started under a handicap of time, if the distance is long enough, will overtake and rapidly pass the lesser endowed man.

The potential mental regions may be likened to the unused or uncultivated parts of a fertile farm: they have potential power, they are ready for produce, they keep fertile because it is natural to the quality of their substances; but as in the case of the farm if the farmer has more than he can attend to, is intensively working other fields, there is no demonstration of fertility in the uncultivated parts; the hills and valleys are there, but are not productive except in minor ways.

The farmer knows by actual observation what parts of his farm are under cultivation, production, and vital exhaustion. In the mental fields an owner only guesses at the regions that are being productive; he can only suppose that other regions are or are not productive, or fertile, or cultivated. He cannot necessarily tell what regions are being cultivated simply by examining the produce "in the granary or the barn."

The Merton Method is the only one, so far as experience proves, that can determine which mental regions are producing, by knowing their crops, or which ought to produce better, by knowing their size and fertility, or which can be most agreeably cultivated, through examining their contours and kinds of preferred products.

If each part of the farm produced only one kind of farm product, the farmer could tell where it came from, and by wide
enough rotation could finally tell where best to plant, which was the richest soil, which the deepest loam, and best for intensive farming. Having learned by experience the local disposition from the nature of the land, he could tell other farmers the facts. He would have indexes of local qualities, quantities and adaptability. By asking his neighbor what product he had raised, he would know what part had been farmed, and judge the rest of the farm possibilities accordingly, or the farmer's ability as the result warranted.

The individual might rotate the vocations, each one of the seven hundred worth while ones, a period each of three to seven years, over the whole mentality until he finally found the best vocation!

It is the essence of the Merton Method to measure the present status of power of the mental specifics by their indexes in the face; if these indexes have changed in one year or in ten years, they will necessarily indicate not their old size, but their new volumes. There are some means by which the increase or decrease of power or activity of the specifics can be noted, but that will be treated in its proper place.

Our problem here is that of understanding the nature and the culture of the dynamic, or executive, forces of the Will, and of preparing to pass judgment on their size and probable bearing upon the vocational life of the individual. The vocational counselor's value rests largely in what the individual under the analysis and judgment does not know about himself, and cannot know certainly from experience or inexperience; he cannot know what he has not experienced, nor can he often realize even the mental values of his experiences. The counselor's basis of judgment is founded upon his ability to compare, in a few minutes in each case,
the lifetime results and indexes of two or more individuals. The face of a great executive may have taken a lifetime to form, that of a great artist another lifetime, and of a great surgeon still another lifetime; knowing the essential history of the three men and comparing the essentially dominating features of their faces may take only a few minutes. The sculptor takes weeks, months or even years to hew out of the marble block the image his mentality conceives, but it does not follow that an artistic onlooker cannot see both its forms and its ideals in brief hours.

Hence the counselor can take a fourth or a forty thousandth face and compare it and its experience with the others. The vocational counselor by the Merton Method—the comparison of specific powers with the specific signs of those powers—has an enormous advantage over the individual's self judgment of himself in the matter of his relative mental powers and aptitudes. Comparing the past experience of the individual with his present indicated ability often throws into remarkable contrast the readable measure of every other kind of vocational experience of which the individual is capable under normal and reasonable conditions and opportunities.

Since a man cannot exercise all of his abilities in every direction at the same time, any more than he can walk in all directions of the compass at the same time, the vocational counselor can determine what abilities he can exert with the greatest probable result and happiness under known conditions, because the counselor has back of his profession and judgment the knowledge of many similar combinations of abilities and qualities that have succeeded in a particular vocation and that have failed in others.

In a like way, the presence of previously unexerted executive powers put to the test of experience proving their natural aptitudes, is a criterion of the predominance of very similar natural aptitudes in another man.

Knowing the regions of the mental indexes, one has but to stand before a convention of successful merchant jewelers, or an association of clothing designers, or of mechanical engineers, or of state bankers, to know that the members of each of these associations, however equal in quality, were never vocationally transitable to the others, and to have proved to himself conclusively the dynamic regional influences of mental specifics, and as conclusively to have emphasized the fact that the stress of competition "weeds out" the vocationally
inept—so indicated by their absence—whose potential abilities were in other fields of endeavor.

If executive power is that quality of mentality that has proved ablest in organizing, managing, controlling and directing men, or is the exercise of a commanding attitude in the development of an industry or business or even many of the professions, or in the arts or trades, then these indexes of the Will are subject to the culture of exertion, and are relatively powerful in these matters in proportion to their quality and size.

Men are influenced by the presence of these powers in other men. There is an effect that is not explainable by the obvious facts that transpire in the contests or conflicts of such possessors of large executive faculties. One may not be able always to see in the conduct of the executive the source of his power. But the indexes of that power, of its particular or peculiar kind, of its predictable effect upon others or upon his own mentality as a whole, are readily seen and assayed. This relative ability as compared with his other abilities can be assessed by the Merton Method because the indexes are as clearly defined as are those of the Intellect of the same man. The fact that under inexperience the regions may be large yet potential, is evidenced by the effect, under cause and opportunity for expression, that they succeed, while they rise still higher, become more acutely modeled, and express, as permanent expression, a greater volume of power. The vocational counselor, by assaying these volumes of potential power as they are registered at the time, and by a comparison with their possessor’s experience in the near past—knowing that he has not urged them to exertion,—can predict a reasonable and normal increase in power when the abilities are placed under effort by choice, chance, or purpose.

Will Order and Disorder:

We have stated how fully the Will is the criterion of the disposition in general and of executive management and other motive actions, whether industrial, personnel or personal relations are involved.

Any condition of disorderliness, ranging from an uncontrolled temper to a lazy and shiftless disposition, is of great importance to the vocational counselor or employment manager.
Such disorder may be due to a badly balanced ratio of faculties that are not excessive, but not well arranged in their various volumes of power; or it may arise from extremes in particular faculties, which become deterrents to a successfully acting Will as a whole.

Order or disorder in the line of power does not mean that it must be even or that it must be only moderately full to be orderly and somewhere balanced, or that it cannot vary considerably without being confused or disorderly. It means that an orderly line of the Will must have those faculties fairly well developed that are required to lead to good personal conduct, and that in other ways control one's actions in the pursuit of a vocation.

The vocational counselor will find a large sprinkling of men who are good mechanics, or good artisans, or good operators in all the various positions, in so far as their intellectual abilities are concerned, but who are erratic or careless or indifferent in their responsibilities as expressed by the Will; that is, their conduct as employees will not be satisfactory. As long as there is surplus help of their vocation in plenty, they are under the compulsion of the pay envelope to keep at work more or less of the time, or to act civilly to their fellow employees, or to do their own work above the line of discharge criticism. But when there is a counter demand for their services, the grade of conduct and of personal responsibility at once shows irritating and unprofitable deviations; they become sources of distraction of attention and causes of excessive supervision.

This condition of mind is not wholly irrational; they are in no position from positive knowledge to judge their own value or their warranted income except by comparison with their fellow employees and the general labor market. Their mental analysis line may indicate excess in local regions or the lack of sufficient power in local regions. The demerits work as much havoc in vocational conduct as in personal relations.

In such cases it is a part of the regular procedure of the counselor's work to give advice or conference suggestions, describing the probable penalty. It will prove to be subject to the regular forms of analysis and judgment, just as we have found and noted in Lesson Sixteen concerning the variations of the Intellect.

The reason for treating with particular care the irregularities or variations in the Will, when of a somewhat erratic
nature, is the fact that these have a bearing not only upon vocational aptitude, but also upon conduct as independent of vocational aptitude, often when not having a vocational value in themselves.

In giving ratings and advice either in private practice or employment work, it is necessary carefully to consider the dynamic influence of the Will faculties as constitutional "speeders up."

**Constitutional Speeders:**

When certain of the Will faculties are powerful enough, they "speed up" the journeyman mechanic, the professional man or the laborer no less than they speed up the business man or the executive. In the former instances it may be that the means of expression or the results of the dynamic impulses are farther away, mentally, from the direct action than is the case with the business man or the executive who is dealing with the dollars and cents directly; but persistence in doing rests largely in the Will faculties.

When there is a lack of these forces of accomplishment, or some are overbalancing in quantity, the counselor is warranted in suggesting more effort in any particular direction indicated, or in urging restrictions on the faculties that are ex-
cessive. It is his professional business to be as exacting, direct, and hardheaded as the analysis indicates as being necessary. In employment matters anything correctable that conflicts with good service it is his privilege to deal with.

It is an astonishing matter to note the many failures among men and women who have really superior intellects; but the careful counselor will plainly see in nearly all such cases that there are woefully ineffective Will faculties somewhere along the line of personal conduct or of executive effort; somewhere, for example, there is disagreeable bombast, deficient industry, fawning subserviency, carelessness of property, lack of or excess of economy, over- or under-aggressiveness, or one or more of those deterrent mental factors that load up the language with nearly half of its non-technical words—words that cannot be tabulated in a rational scheme of knowledge.

One may talk loyalty, perseverance, punctuality and other general states of the disposition until doomsday, without inculcating these qualities, if the specific causes of disloyalty, negligence and indifference are not recognized and replaced by normal activity, or there is not instilled the sufficient reason and incentive to their correction. In many instances there are really no recognitions of the presence of the demerits, of the constitutional defects and deficiencies, on the part of the individual.

One finds meandering minds that credit themselves with being wonderful observers, misers who rate themselves the most generous men in town, people so constitutionally sour they seem angry at their own faces, still professing serenity except for somebody's ill treatment, and unobserved geniuses who will sometime do wonderful things if they ever have time. Just quaint little egotisms which they call upon the counselor to encourage. The counselor should estimate these at their right length, and prune them according to their true value and use.

On the other hand, the counselor will not forget that few great works in new fields of thought or of investigation have found recognition without greater struggle than the work itself entailed, and will therefore be very chary of criticism or free from ridicule of what he has not carefully studied and weighed. He will note that condemnation, like gossip, grows in appearance of certainty as it is passed along, and that many hypercritics appropriate to themselves the ability critically to
estimate subjects they know very little about, being them­selves importantly busy with something else.

It is noticeable in the blank forms of employment man­agement that part of the Will mentality is almost all that the record is adapted to show; that loyalty, honesty, energy, perseverance, punctuality, or similar parts of the disposition are about all the examiner hopes to be able to pass judgment upon and make of record use. The same statement holds true with much of the character analysis of the day. Sometimes the general degree of intelligence, source of education, and trade experience have places for comment.

The Merton Method must go much further than these gen­eral ratings. If there are conflicting or depressing indexes, they must be taken into vocational account and a value or correction placed upon them as far as the counselor can de­termine their consequences.

Conduct and Contract:

The employment manager and the prospective employee of every grade will realize seriously that the attitude of con­duct is a part of the contract of employment, that not simply the return of tools, or the appearance at working hours and the run of the day in the specified work constitute that con­tract, but that also the personnel relation that forms the basis of conduct and of companionable, dependable relations is an element of force, and of the substance of compensation. The cycle of wages, cost of living, and productive profit becomes, during all distinctive changes, a mass cycle, and the conces­sions of co-ordinated work are necessarily subject to applied and implied agreement.

It ought to be true that the employment manager is always a counselor of the employee in the purposes of the employee as well as in those of the employer, and so recog­nized and valued by the employee. It is becoming so more and more every day. Understanding the ambitions and aspi­rations properly belonging to each other as factors of indus­trial growth and benefits, can certainly add to the ease of accomplishment and to the gradual elimination of waste effort and of erratic action. Mutual conference, therefore, is one form of encouraging the bracing up, or leveling up, or modify­ing irregularities of the Will specifics, just as wise office or factory supervision has the same effect upon the irregularities
of the educational, trade, or business information or practice of the Intellect.

These conference conclusions do not necessarily mean that the counselor must go to the trouble of charting the man, as it is just as possible to draw conclusions from equations from the face as from the charted analysis, the latter form being a record of and for the employee, or for the employer, as of the date made.

The Will and Crime:

In so far as the antecedents of a crime spring from an opinion that it is right, it rests in the Intellect and is executed without question by the Will. It is a proper idea and is carried out by the Will as an idea. All crime is both an idea and an act.

A crime may arise from the sensations, the emotions, the Aspirations or the Will, as a cause of intention, desire or want, but its formulation as an idea, we repeat, is an opinion, or idea, to be developed by action, and thus far is not a contravention of the Will.

When the result of an idea is contrary to the laws or conventions of society and is so recognized as an injury to some one or to society—that is, as a criminal idea, something that ought not to be done—the Will is equally involved in the matter as a crime.

Only part of the faculties of the Will, however dominant, carry in their impulses or purposes incentives to any of the species of crime. Neither Stability, Integrity, Industry, Caution nor Mobility dominantly generates criminal intentions. For this reason neither their over-development nor their under-development in the mentality or in their regions of the face create a cast or a type of criminal constant expression.

There are other faculties of the Will which, either by overdevelopment or by under-development, in the absence of the right idea and the control of restraining faculties, may create incentives or condone various species of crimes. These faculties are Dignity, Economy, Defense, Liberty, Aversion, Laudation, and Destruction.

Thus Liberty may seek freedom of choice that is not gratified by conditions satisfactory to the pro-criminal, desire for display may urge its own gratification, and so obviously of the other faculties cited.

The contrasts of these regions in the face with small re-
gions of small Stability or Integrity or Caution, and their evidence of deficient restraining powers, can modify local regions, can be read or measured when their locations are known, but since these are not necessarily contiguous, they do not make a generalized featural cast. They make the criminal type of face somewhat of an anomaly, a combination due to variations of scattered regions of the features, sometimes depressed in size and sometimes increased in size over non-criminal ratios of the same regions.

When the scales of the Will are quite evenly for or against a species of crime, in the presence of opportunity or of added incentive, the equations of the faculty specifics will necessarily be too close to warrant a conclusive or a prophetic judgment against the individual, or taking such action other than protective and preventive as will jeopardize his rights or his happiness.

An obsessive idea is a subtle fact; the influence of such an idea is not easily described or measured, even when it is known. Courts are at all times careful that even when a known motive is shown to have existed as the basis of a criminal idea, its connection with the sequent crime must still be established by competent evidence,—the fact that the opportunity existed, the act followed, and, as far as can be determined, that no other alternative conclusion ought to be reached.

But, while Stability, Integrity, Industry, and Caution, by their individual or joint dominance in the mentality, may not create incentives to crime, or to the conditions that may stimulate crime, their considerably reduced powers, as relatively small faculties, may not act as the necessary restraining organs. These faculty regions are not everywhere contiguous in the face, do not wholly occupy single features fully enough to determine a featural type, and must therefore be judged by their own regions.

The play of the Culture and Aspiration faculties against criminal intention is another reason why the various criminal dispositions cannot be arbitrarily outlined or depicted at wholesale, and why their possibility or probability must be equated in the same manner that the vocational faculties are equated, by the merits or demerits of specific regions. Sometimes these demerits are of a highly disorderly nature, inclusive enough to arouse a suspicion of liability, or if frequently seen, noticeable as non-restraining regions, or as stimulating factors, to crimes of various kinds or degrees.
The Energies of the Will

The additional fact that crimes are various, unlike in nature or in cause, personal or impersonal, passional or material, is in itself an evidence against the theories of a generalized or composite grouping either of crimes or of their indexes. Hence, criminologists are, perhaps, not at immoderate odds concerning the means of recognizing, reforming, punishing, or preventing criminals.

Diffusion of Nervous Energies:

Nerve forces, Will forces, can be scattered and diffused in a manner that is non-dynamic and non-productive. A man working on a useless undertaking, or on one where he knows he is at great disadvantage, or where there are depressing surroundings, may unconsciously waste much dynamic energy. Sputtering and fuming over matters of little consequence—much-ado-about-nothing anger—is a common source of vital waste.

Moroseness, doubt, melancholia and despondence are specimens of diffused or diffusing mental action; their effect upon the body is the production of toxic activities, untuning the motive structures and the tissues of the nutritive system. In the circle of effects the depression soon reaches the mental organs again in renewed autotoxemia. The vital change modifies the whole organism. Under these conditions people say a man has "lost his nerve."

True, one often finds people who greatly enjoy morbidity, melancholia or grief, particularly in the presence of others; one would be cruel to destroy their happiness were it not for the rights of others. About these the vocational counselor need not be concerned, because the immunity is present in their consciousness of having important matters concerning themselves to dwell upon and to occupy their time. The poverty groans of the miser are of a similar order. The phobia impecuniosis of the rich man or woman is a common mania, and, like many other phobias, may arise in the Will, in the Aspirations, or even in the Intellect. Probably there are few antidotes, but a large dose of ridicule or of truth concerning themselves sometimes acts as a temporary corrective. In some cases where family, fellow workers or friends are the objects of the categorical self commiseration, the go-off-and-stay-by-yourself remedy, rigidly enforced, has salutary and convalescent effect.
Personal and Impersonal Power:

Many men are full of intellectual decision, intensive energy and self-direction, who, when asked to exert these qualities of mentality upon the actions of others, or in directing others, or even in critically suggesting lines of action to others, at once become diffident, or negative, or confused. The relation of personal exercise of power to the exercise of that same kind of power on others, is determined largely by the faculties we are to study.

The man who has great personal courage may shun intensely the expression of courage in directing and controlling others. The division of faculty powers is thus expressed in a great variety of ways, and, as words are spelled out by changes in the order and relations of the alphabet, so the counselor spells out the expression of Will abilities and their specifics in the expressions of their power as units combined with other units.

Kinds of Executive, or Volitional, Abilities:

The Will faculties, as earlier defined, are interested in every kind of applied mental power, or, one may say, of controlling energy at work, in forms of rulership of some kind. It is convenient to use the terms, positive, executive and dynamic, in expressing the qualities of Will energies. The original meaning of dynamic, as possessing power, strength faculty and similar qualities, was very broad, and the basis of its meaning in "dynasty" is much nearer than the present technical interpretation of the term, just as the expression "executive faculties" does not broadly cover the whole class of motive and volitional powers exerted in self government, in business, in the fields of superintendence and industrial management. We note this here under The Energies of the Will, because we desire to survey in general the scope of studies given under the particular faculties and their specifics in succeeding lessons. It will be found that from the smallest element or purpose in self control, working gradually up through the whole course of personal and industrial progress, every contingency of motive power is provided for in the nature of the faculties. It will be found that whatever kind of power is necessary to execute, perform, or carry into effect the plans or conceptions of the Intellect, or, through that Intellect, the desires and emotions of the Affections, the Will has made preparation for. Whether that preparation is competent will depend upon
the quality, experience and proportions of its various specifics.

As an expression of the remarkable modeling of the Will in combination with an enormously broad forehead and sidehead, where especially the Intellect is called upon to support every executive necessity, we have included, as Fig. 241, two views of Lloyd George. By covering up the forehead the face discloses many powerful Will regions, especially Industry, Caution, Integrity, Stability and Liberty, to be treated of in later lessons, our aim being simply to show these relations in general regions. The orderly modeling and wonderful relations of the faculties to each other are clearly shown in this powerful face. The counselor will certainly have a task in narrowing the face down to a single vocational choice. Whatever this mentality does will be driven with every ounce of energy possessed, though its many possibilities are inclined to defeat a satisfied self-choice of vocation.

**Required Proportions:**

The little business of the low quality man requires as large a percentage of business ability as does the big business of the high quality man. The ratio of power to the job is the factor of vocational judgment.
Comparatively few men possess executive ability in sufficient degree to be capable heads of big enterprises—manufacturing, transportation, construction, or heavy distribution—but every one should, by cultivation, gain some appreciable degree of this ability, as a large proportion of all vocations, other than common labor vocations and the trades, requires somewhat of its initiating and administrative qualities, and all require the motive support of a moderate Will.

Nevertheless, executive and administrative ability, like other kinds of ability, is subject to the mental law of diminishing returns. Beyond a certain point in the mentality of every individual in any struggle of the secondary faculties, the stress of gain is at a loss to the whole, and at a loss to the larger faculties that could gain under the same effort a much greater accomplishment in their own kinds of ability.

We wish again to emphasize the fact that the amount of success, under given conditions, which a man may reach in a vocation arising from his secondary faculties, will depend upon his natural quality and texture. The counselor will know that if a man succeeds well in a secondary faculty vocation, he will do much better in a dominant faculty vocation; if he can raise a secondary faculty a reasonable amount under pressure and effort, he can raise a dominant faculty very much more, and the vocational mastery will be in proportion. This is often a key to quality; success of a measurable kind or amount with a second or third power group of abilities will predict a much greater success in the right vocation. Culture in these secondary or lower power faculties is absolute evidence in favor of the larger faculties and of their ability to gain under a reasonable stimulation. Our experience has proved many times that able men who have made merely mediocre success in following their poorly chosen vocations, were able to surprise themselves and their friends when set at the right ones.

The common conceit that any man can make anything of himself he desires to make if he struggles hard enough, might be true if he could work hard enough and long enough and well enough, and had the right dominants, quality and texture in his mental faculties. Under such circumstances Alexander the Great would still be trying to conquer the world. It is a glory-I-am-it doctrine, good as an occasional tonic, if too large doses are not taken. Little streams no more than large rivers rise higher than their source.
Variations in Executive Faculties:

When we class the whole Will as being executive, we do not confine the meaning to the vocation of executive; we are interested in the class of powers rather than in the positions occupied by individuals who have powerful faculties of this class.

If these faculties carry into actual execution the judgments and the purposes of the mentality, obviously they are executive in their expression, but the nature of their expression differs in the various regions. To say that a man is an executive implies that he has more than usual ability to determine and to control the activities of others. This expression of the higher Will faculties is co-active, or social in its nature, whereas the executive commercial ability, which is the vocational product of the lower Will faculties, is usually individual or personal in its nature. Practically all “big business” men and “captains of industry” are generously equipped, mentally, in both lower and higher Will faculties.

If we study this fact in practical life we find that a well ordered or endowed individual has the faculties out of which grows every element of every enterprise, that every intellect faculty has its own peculiar kind of addition to make to the creation and conduct of the enterprise, and that not alone the ideas, thought and knowledge hold an orderly relation to the faculties and their uses in the enterprise, but that the faculties and energies of the Will create their own relations in government, possession, distribution, utilization and executive functions, as expressions of mentality at work.

The high range dynamic, or Will, faculties may be expected to take the attitude of enlargement of and increase in power, and by extending their field of influence, control, or government, to reap from the multiplied power and product of many men an increased harvest of personal or economic benefits.

Men, therefore, represent the faculties of an enterprise. If one man is weak, the enterprise, like the individual, suffers in that faculty—in that facility, that department of accomplishment. If the faculty of the enterprise is represented by a hundred or a thousand men and these are only average or are too variable in performing their function, then again the enterprise suffers. This is not analogy, but actual fact. For each man performs his function, large or small, chiefly with the faculty his function calls for in his part of the enterprise, and that
faculty is only supported by his other faculties as adjuncts to it.

An analysis of functions performed in an enterprise and of the mental faculties proves these relations true. It determines for once and for all the differences in the energies and functions of the Intellect and of the Will. It sets out clearly, to one who has gone to the care and effort such a subject requires, the succession of normal steps in mental procedure and vocational analysis that an enterprise and its individuals require; it displays for us the normal course of events in the mental creation and production of the actual product as well as the prediction of its mental requirements.

The physical machinery and order and products are but sequences of the mentalities that produce them. So far as the steps or functions are concerned, there is no essential difference between the combined action of many individuals and the other kind of action wherein one individual carries through all of the processes from inception to final utility.
LESSON EIGHTEEN
The Regional Influences and Products of Dignity
Specific Location of Dignity Influence:

The regional influence of Dignity moulds the inner slope and roll of the cheek that is artistically spoken of as the "parenthesis of the mouth." This region crosses the insertions and mobile ends of several pairs of muscles that blend with the circular muscle of the mouth. The region is, therefore, very mobile and changeable under transient expression, but it is highly modeled under its own energies when it is quiescent. The muscular regions are seen in Figure 184 of Lesson Fourteen.

The region of the faculty may vary somewhat in its location, since it must provide room for the expression of the faculties of the upper lip and must also blend with those of the cheek. These changes do not defeat the clear definition of the faculties or their specifics. The analyst has only to use reason in noting the contours of the face.
In many faces the parenthesis is not easily discernible; the cheek falls away from the wings of the nose and from the upper lip in a smooth sweep, as seen in Fig. 243 a, which indicates a small faculty relatively when the surrounding parts of the face are only moderate in size, and a very small faculty when these regions are large. The index must express its size by comparison with the rest of the face. In the illustration the mouth, upper lip and end of the nose are only medium in size, and the index of Dignity to be medium in its own volume should rise around the wings of the nose and the upper lip.

In face b the index of Dignity rises slightly and the face is moderately full, but even in this face Dignity is not quite an average of the upper lip and rest of the features shown, because these also are larger than in face a.

A small fullness in this index, in its proportion to other faculty sizes, can only indicate a small faculty. A low smooth cheek being a small index of other faculties, can only be a small indication of Dignity when that faculty does not rise, and as the cheek and mouth regions rise in size, the region of Dignity must do so also to maintain its proportion. This will be easily read by contrast.

Thus in Fig. 244, a and b, the regions around are nearly the same size, but Dignity is shown larger than in the last illustration and larger in b than in a. It is probable that Dignity in b is near or at the dominant line, unless some other faculty not shown rises very high. The sharp line in a starts the faculty abruptly from the parenthesis, but it does not rise high to the cheek level, as it does in b, where the oval swell carries considerably higher before it reaches the crest, which measures
the specifics as seen later.

In these faces the nose seems slightly sunken at the wing; this does not diminish the specifics of the nose, but lowers the regions of the upper lip somewhat. The upper lip has the appearance of medium thickness and is not, apparently, tight drawn and thin, which would reduce the signs to small proportions. To the medium thickness there is added a wide territory that counts a few percentages in their favor.

In the faculty regions the focuses of the specifics have their own local places, and as the counselor must read these focal points, they are given in all such regions. Any method so general that it cannot indicate these specifics is practically useless in vocational counseling or employment management. Such general methods may seem much easier to learn and to use. A sickle is easier to handle than a reaper—and, a sickle did cut grain.

The focuses of Dignity hold their places near the crest of the region, and the region ranges in an orderly relation with the bodies of the muscles inserted into the margin of the orbicular muscle of the mouth. When the parenthesis is evident, it very nearly borders these bodies of the muscles, which in turn swell the region and the signs when contracted as in a smile, and the signs are then too large; when normally measured the face should be relaxed or placid in this part. In some faces the margin forming the lines around the mouth, the parenthesis ( ), is not clearly indicated, but the curved region is easily located, as shown in Fig. 243. In later illustrations these specifics will be treated fully.

The outer or imaginary line of Dignity should be noted, as it is the boundary of other faculties.
Quite often, in fairly thin faces, the ridge of Dignity falls into a hollow behind it, as seen in face a, Fig. 245, and this hollow may be quite broad, sloping downward and toward the ear. This slope from the ridge is the territory of other faculties, unless the ridge is very narrow and close to the mouth.

We will now describe the general nature of Dignity and follow with a description of its specifics.

The General Nature of Dignity:

In its normal proportions to the other faculties Dignity gives one the impetus toward loyalty to either individuals or causes that have distinctive merit. It must depend upon the Intellect to determine the existence of this merit, and it is the first faculty to which the ideas and problems of the Intellect must appeal for action, for the purposes of putting opinions, plans or desires into effect, when these ideas or plans or intentions are of a high social or industrial order.

As Dignity is generally the first faculty of Ambition, to which these energies of the Intellect appeal, the result must be one of turning the directive energy of the Intellect into executive energy of the Will, or reforming one's thinking into one's acting.

We see at once the beginning of the power to act, a basis of the revealed personality as distinct from the quiet thought that precedes the act.

Our bearing in regard to industrial and vocational life is to be modeled by Dignity and other following Will faculties; our fitness to carry out our ideas, to carry on the results of our thinking and our desires, rests very largely in these faculties.

It is useless to think out great executive plans without the energy and willfulness to put them into action. It is necessary to balance the Will against the Intellect if one wishes results.
In this balance loyalty to one's own qualities and purposes is a requisite to success, secondary only to one's loyalty to those persons upon whom one must depend either for aid or reciprocity in effort. **Dignity** is an executive force, it gives an executive and dynamic attitude within as well as in outward expression; and so loyalty is an executive force as well as an executive expression.

**Approaching the Will:**

As the execution of one's own purposes requires that the Intellect should, in part, create methods and determine values, so that the Will can use these, so in like manner it follows that one's ideas, thoughts and interests should appeal to the Intellect, and then to the Will, of others; these should establish confidence and desire in the mentalities of those one wishes to influence or seeks as assistants.

The degree to which we are able to carry out our own plans in our own Will has a direct bearing upon the influence we can exert in reciprocal leadership among other men. **Dignity** in this influential power is not alone; it has its part with the whole. We shall see that its size has much to do with the bearing of the individual. No college crew would expect to win a race with a dead weight dummy at an oar. Neither should a man expect to win among his peers with some of his prime faculties acting in an obstinately erratic or incompetent manner.

As a desire for distinction urges the Intellect into intensive effort toward the creation of new works of art or letters or science, or toward the culture of esthetics and ethics as elements of happiness or of progress, so also the same desire arising in the Will urges the faculties of the Will into intensive or prolonged activities in the mastery of the industries, the control of conditions, the gratification of one's wants, and the successes of enterprise.

The distinction of possessing power in the executive world is no less productive of enjoyment to one who has natural aptitudes for that world than is the distinction growing out of the intellectual aptitudes. The employment of a man possessing such aptitudes, in a position where little or no distinction is possible, is to him a source of discouragement and a cause for aggressive irritability.

Large **Dignity** stimulates a purpose to command; it is the most personal of the Rulership faculties, but its outlook is
toward the mastery of difficulties when there is discouragement or doubt, even in its influence on the individual intellect.

It is evident that in a normal volume Dignity exercises self-authority as well as puts stress upon the accountability for one's own acts. A man of low order is as apt to have comparatively large Dignity as is a man of high order, and to be affected by it in the same manner.

Much of the effort of the prevailing inspirational and optimistic writing and speaking of to-day is an appeal to the specifics of Dignity as nearly as it is an appeal to the personal aspirations. It is an effort to arouse men to personal accomplishment, a flow of encouragement and pragmatic advice, both toward greater product from effort and better self-control in matters of welfare and reciprocal service. It urges action, but does not direct the manner of accomplishment, the direction of effort, or the path of growth. To the extent that it stimulates men to activity in any or all of these directions it is useful. Action is the fundamental basis of culture of any Will specific; the intensive application of effort to the kind of Will to be aroused is the chief source, which must be determined as a specific and answered as a specific fact in order to effect culture.

The executive who has the power to stimulate success in others necessarily adds that much to the quantity of his own success, that much more gain to the total of human enjoyment or the possibility of happiness.

The pride of doing well, the enthusiasm of conquest, are dynamic stimulants to brain and muscle. But misdirected enthusiasm is a waste, and misdirected vocational activity is a source of enormous ineptness, of great loss of energy and its product. The general application of the Merton Method in vocational selection and direction corrects both conditions by the creation of enthusiasm through natural aptitude and ability, and the saving of waste energy by saving misdirected effort.

Subfaculty Regions:

The subfaculty, or specific, regions of Dignity are easily located; the territory being long and narrow it is capable of great apparent variation from one specific region to the other, and the specifics can readily be rated. The student should learn to read the proportions with as much accuracy as is possible, not that he may always need to do so, or to read all
of the specifics, but that he can do so with certainty when it is necessary.

The faculty of Dignity expresses itself through the specifics pride, love of power and self-esteem. These have definite dispositions just as the specifics of the Intellect have, and their effects are clearly noted, especially when at the extremes of size.

In Fig. 246, face a, the region of pride is marked Pr. and is indicated as very moderate in amount; the cheek falls away from the nose with a low ridge, and the sign is much smaller than in face b, below a. This face a has fairly moderate pride, but not as small as described under Deficient Pride. The upper lip region, the space within the parenthesis, rises higher than the cheek in this part of the face, and pride is here compared only with the nose and mouth.
In face b the specific is very much larger and can be so, rated, but it is not large. The cheek is full before the malar bone and just back of the wings of the nose, giving the general characteristics described as fairly large in volume under the analysis of pride. In this face the nose and mouth hold the same relation to each other as in face a, but the upper region of Dignity is much larger.

Analysis of Pride:

The specific pride when fairly large, with good quality and fineness, gives the Will the desire for attainment, for the expressions of loyalty and valor, and for the exercise of such purposes as will lead to credit and distinction in one's vocation and in personal relations.

When large and exerted it consciously seeks renown of some kind, to make worthy struggle for eminence in the world of affairs.

We realize in studying the purposes of this specific of Dignity that, like the rest of the faculty, it is individual and personal, it has the advancement and advantage of oneself in view. Yet in its broadest expression the products of its action are gallantry or courteousness, some form of good manners or good will. Having as its basic energy the modifying or stimulating expression of the individual in habits or ways of self rulership, its excess or deficiency is clearly revealed in the social and companionable life of the individual.

Deficient Pride:

Deficient pride, as a specific, unless highly supported by Amity and the Aspirations, generally leads to over-humility and sensitiveness, to times of dejection and despondence or similar feelings. In other combinations, particularly when the whole faculty is small, or when Stability and Liberty are below medium, there is a disposition toward irritability, changeableness in mental attitude, and lack of confidence. This disposition does not hesitate to blame everyone else for its condition or failure.

The physical expression of small pride, and particularly when the whole faculty of Dignity is small with small Laudation, is much inclined toward stoop shoulders, forward sag of
the neck and head, and the general attitude of mental fatigue, even when this is not the case in fact.

There are general mental attitudes that are encouraged by small pride that are also the outgrowth of other small faculties. Small Defense with small or below medium pride tends toward timidity, undue deference and a constrained habit of action or of expression. These vocational deterrents have a depressing effect upon one in any kind of work. The employment manager should suggest a more confident, buoyant and aggressive spirit; he should advise a proper self regard and more practical view of life and its possibilities, because it is better to have a live “kicker” than a dead drag in one’s positions. When the employment manager can give a definite reason, a known incentive for the acceptance of his advice, it will be much more effective than blank suggestions. In the same manner, the direct assertion of a superior ability in a particular vocation, because of peculiar specific abilities, is a far more potent incentive than any amount of generalized encouragement. A sales manager at a meeting of his salesmen has no other choice than that of general enthusiastic encouragement, of stimulating their ambitions, their confidence, their general courage. To this he adds all of those suggestions of ways and means that his own talents command. He is not electing men for particular jobs, nor touching the individual faults of individual men. He is treating the whole force as an average, hitting the over-enthusiastic man with as much enthusiasm as the under-enthusiastic man; he is adding pride and egotism to the man whose fault may be too much pride, as certainly as he is adding it to the man who has too little of these qualities. As long as he is working with his group he has no alternative. And so of all the phases that one must turn upon a group of any kind of men in any vocational line.

The sales manager may or may not take the individual salesman’s reason for any failure as a true statement of the facts; the salesman is giving the true reasons as he sees them—his honesty and pride will not let him do anything else. But if his reasons for failure were the real reasons he would either know how to remedy the trouble or would know that failure was inevitable under the conditions. On the other hand, if the sales manager knew the specific mental ratios of the salesman, and by individual specific advice could aid in harmonizing these with the conditions necessary to success, or the salesman knew the real characteristics, interests and purposes, aside from the local pride and apparent ambitions, of the buyer,
a much easier road to accomplishment would be found. These suggestions apply not only to sales managers and salesmen, but to all other executives, agents and personnel managers, and not only to this specific pride, but in various ways to the mass of specifics of the Will.

The Specific Love of Power:

The specific love of power is located about midway of the faculty region of Dignity, as seen in Fig. 247. The index swells the region forward and sometimes crowds the line of the parenthesis closer to the mouth, though the region when full and farther back, if close to the valley of the parenthesis, is still Dignity and must be read as belonging to that faculty.

In face a the index is small, the line itself is quite far back, and the face fulls out farther back of the region.

In face b the index is quite large and is directly active. This indicates a purpose to exert authority whenever opportunity offers; it gives directness to action and to speech, confidence in carrying on one's intentions and in the mastery of difficulties when there seem to be heavy obstructions.
Dignity

This fullness in the sign is often seen in the faces of executives and of men who are willing to shoulder responsibility in management. Its presence, however, is not invariable in the executive mentality. The presence of high Stability, Industry, Economy and Defense may offset to some extent the absence of fairly large specifics of Dignity, though the difference in the disposition is noticeable and the qualities of Dignity will be lacking when the indexes are small.

Love of power when large adds to the general disposition a certain tinge of audacity in attack and of compulsion in carrying out one's plans that other faculties do not have, but that resembles some of the phases of aggression. The effect of the specific upon the personal bearing and upon the sensibilities of other people is noticeable; it gives somewhat of the executive bearing noticed in men of affairs, an attitude of supremacy over conditions, a cast of severeness particularly noticeable in jurists and principals of institutions of learning, and, sometimes, through habits of discipline in abnegations, in the operating surgeon. In these instances it often inclines toward austerity.

Small Love of Power:

When this index is small it inclines the disposition toward unassertiveness that is retiring rather than indifferent. It must be equated with the other Will faculties; in some of these relations it weighs against executive obligations and desires, and its lack of force is a factor in preventing one from succeeding in business under one's own control and responsibility.

People with small love of power often move along fairly well under the influence of the other Will faculties until it comes to a crisis of control or of extreme effort, and then crash down to failure. By urging active Stability, Industry, Defense, and Aversion (as a commercial force), the small specifics of Dignity may be protected and the stress of heavy attacks may be withstood even when they are continued for a considerable time. The warning to the client enables him to exert other faculties in methods of control and mastery.

The Specific Self-Esteem:

The location of this specific influence is in the lower end of the region of Dignity back of the line of the parenthesis around the corners of the mouth. In many instances
there is a small fullness of serenity around the corner with a curve around it, and a larger curve outside of this, in the fullness of which is the index of self-esteem.

In some faces, found throughout the text, the lines are not apparent, the whole region being smoothly retreating from the mouth. In such cases the student must gauge the location by a relative distance from the corners of the mouth and the contours of the chin and nose, then rate the specific accordingly.

Large Self-Esteem:

In Fig. 248, face a, self-esteem is near the maximum of the mentality, but balanced by a series of controlling specifics in the upper lip, the side of the face and the end of the nose. These allow the specific to express itself fully but not questionably. This specific under these conditions inclines the mentality to loftiness of purpose, with considerable reserve and coldness in a business matter, with considerable audacity, or perhaps boldness, when there is occasion or necessity for these disposition.

When upheld by Defense and Stability there is apt to be a tendency to express superiority and haughtiness when one's purposes are opposed or when criticism is offered. In dealing with this kind of a mentality it is necessary to offer evidence, to submit propositions without any appearance of demand, and to act as though one deferred to the judgment of the party approached. When this index is not modified by other strong Will faculties and by large friendship and aspirations, it invariably leads to egotism and a disposition to boast.

When very large, self-esteem is one of the foundations for self-conceit, bombast and cheap bravado. One finds it dominant in many ordinary people, people in whom the stable faculties are only moderately large and so do not act as
moderating or controlling influences. With **Laudation** large or very large, coupled with large **self-esteem**, the display of self-conceit, boastfulness, and vanity is a frequent cause for failure, not alone because of its influence upon other people and supervisory authority, but because it affects the actual value of industrial conduct, and has a direct bearing upon the effectiveness of the individual’s work.

Under these conditions the person is slow to take advice, thinks his work perfect, and that he is under no obligation to try self-improvement or to work toward advancement. Whenever there is defective work or a cause for criticism, “the other fellow” is always at fault. With such mentalities all mistakes are either passed up or down. Generally the result of effort at correction, applied to one so constituted, is an erratic activity, sometimes turning into sullenness or else into a revengeful intention to get even. The swagger and pomposity of some fairly successful men does not disprove the fact of a general depreciation found resulting from excessive egotism, and the counselor or employment manager is warranted in urging control of these extremes and their moderation to a point where they are not social or vocational obstructions or deterrents.

**The Mental Products and Relations of Dignity:**

Fig. 250 is a diagram of the mental products and relations of **Dignity**, of the same order as were those of the Intellect faculties. These relations are useful in noticing the strongest lines of influence of the faculties, and illustrate the fact that faculties have preferred friends among the other faculties, and that there are other mental regions toward which a faculty may be neutral or opposed. The tables of tentative analysis
and those of products and relations are very important studies.

These mental regions are fundamental and held as such in the diagrams throughout the text, and the student is already familiar with their places and with the places of the indexes of the specifics of the Intellect in the face. The tracings of the order of dominance in Figs. 182 A, B, C, D and E, in Lesson Thirteen, are methods of tracing the vocational order of specifics, not of the relations of the faculty, as these diagrams of faculty relations are.

If we were to transfer this diagram of the products and relations of Dignity from the mental regions to the face, as seen in Fig. 251, the lines would be twisted and involved, probably confusing until the whole face had been mastered in its location of specifics. Some of the specifics reached by the lines have been studied in past lessons. Others of the specifics have not yet been studied.

We have advised the student not to attempt to read the untreated signs, or specifics, until they are reached in the regular order of presentation. The thorough mastery of each faculty and its specifics is a matter of greatest importance.
We have included and shall continue to include parts of illustrations that are not described, in order that when the new faculties are studied the student can return, if he desires to do so, and review the relations that have been passed.

After some practice in the use of the work the apparent complexity and possible confusion of some of the diagrams will disappear. Some students can use one method to greater advantage than another, and each student will incline to the form of mental representation that is clearest to himself, as an adjunct to the analysis tables.

**Percentage Analysis Preferable:**

The percentage analysis charts in these lessons are frequently given in double tables in order to save space and to make comparisons. In practice the counselor will have but one line of analysis to consider, and the reading will be much more clearly presented. In that case, too, the counselor will carry mentally an evenly balanced or harmonic face in mind.

In Fig. 252, the average of the rating of the face is very near 88 per cent, and Dignity, Liberty, Defense, Caution, and the specifics motion-form, intuition, display and invention, are very nearly on the line of 90 just above the average. Any specific in the line can be read at a glance and the vocation readily determined.

In this face observation as the Intellect dominant, perseverance as the Will dominant, skillfulness and imagination supporting observation, directly followed by object-form, then Number, Integrity, Industry, propriety and Defense, spell out as it were, the superintendent of a shipping department of a heavy product industry, dealing with a country-wide trade.

The Construction specifics, except as to uncommon "ways and means," do not need to rate quite so high; Construction and Number should trade places if there are considerable rate comparisons to be remembered for convenience or calculations to be made by himself. These, however, are not so far apart and both are useful to that vocation, a vocation not highly distinctive except in its generally requiring a man of good quality and temperate disposition.

This face is so evenly developed that the analysis line varies only about twenty-five per cent on a normal line of variation. The vocational judgment is proportionately hard to make where a selection that is quite distinctive is not indicated, and where one of several similar vocations might be
chosen, if conditions were prohibitive of one or another. The regions marked by the lines on the face are those interested in the superintendency noted. The regions one, two, four, six and the temple five have been studied; the other fives and the three belong to the Will.

Dignity in this face is but moderate. It gives a fair working influence along with the other mid-range Will faculties, none of which is seriously depreciating. There is but little opportunity for critical vocational suggestion in this face: foresight, judgment and vigilance should be raised by attention to their action and requirements.

The Vocational Relations of Dignity:

The most powerful vocational relations of Dignity are probably those of the specific pride in its influence upon Integrity and Liberty in the Will, the feeling of nobility in effort, in accomplishment and responsibility. Integrity responds to the demand of pride for honor in social and industrial relations; nothing more quickly breaks one's pride than the necessity for bearing injustice, nor do many purposes so arouse the ambitions as those that are known to impose upon one's liberties. In an employer who has Dignity, Integrity and Industry small,
there is no other source of appeal in the Will, except the selfish specific of Economy or the fear element of Caution.

A suggestion toward winning fame and recognition through increased effort seldom reaches the "lazy bones" of the man with small Dignity, Integrity and Liberty, unless the Aspirations are very large.

Through pride the Aspirations and the quality of a man's friendship may be raised, his modes of social manners changed, a better outlook upon life made to take the place of low intentions, and a wider control of the appetites instituted.

Through love of power, Dignity often exercises a controlling influence upon energetic and constant work in vocational effort, particularly where executive powers are needed, where there is required the mastership of employment and productive methods, the control of personnel and stimulation toward good conduct, orderly procedure and enthusiastic co-operation.

The specific love of power stimulates the faculty of Defense in aggressive and protective habits, and arouses Caution where the matter of one's rights is concerned. In a similar manner it appeals to Reason for processes and authoritative direction, to Reform for choice of ethical manners.

The operations of these specifics are traceable in the conduct of the individual in whom they hold dominating positions; there is nothing hypothetical about either their indexes or their influences upon the conduct of the individual. Men with certain specifics relatively small shun responsibility, though known to possess the intellectual abilities necessary to the tasks; others with these executive specifics large, covet responsibility, even though convinced that they lack a working grasp of the information required for success. One can prove these specific relations by prophetic as well as by post-facto instances; time records and experience will prove the first, and declaration of past success or failure prove the second.

The relations of Dignity to conduct brought through the specific self-esteem in excess or when extremely small tell tales of loss, failure and disappointment, and when in reasonable proportions speak of success, constancy, elegance in personal appointments, long association, and vocational progress. To keep one's promises and agreements has a triple bearing; its first influence is upon oneself, upon the ease of expression and surety of intention, upon the bearing of the body as an attitude. Many agreements are implied and tacit, they are not stipulations by exact expression nor matters of contract, but matters of expectation and good conduct. The man who does
not rely upon himself to carry out the essentials of good conduct, either in social life or in his vocational activities, must expect other men to avoid placing confidence in his doing so. For a time the attitude may be hidden, but not long nor deeply, because it is an expression in conduct and in influence, neither of which is easily imitated, except transiently. The second bearing is in the credit created by good conduct in one's vocational relations, a good conduct implied by the conduct or principles of trade and work. Under Integrity we shall have occasion to refer to the attitudes and purposes of people in judgments concerning integrity. At this place it is the bearing upon oneself that is in question. Self-esteem is a working energy within us that in moderate or normal volume has an effect upon other faculties and their attitude toward the world at large. Our own Intellect acts with greater surety when the Will has respect for itself; the face responds in volume as well as in transient expression.

The conduct of labor is easier; there is a rule among the mental organs that they shall work honestly or the mentality will be deceived against itself. When Dignity and Integrity try deception, the others are at bay, they are deceived and in a state of that much disorder. Disorder and dishonor are very close friends when confined in the same mentality.

Large Dignity:

Face a, Fig. 254, is that of a learned and successful physician, well known in his practice as having a very dignified and reserved, though kindly, disposition. The regions of Dignity are up to the 100 per cent. line, along with observation, synthesis, intuition and esthetics, while protection, self-defense, object-form, motion-form, Amity, firmness, and Reform follow in that order. The very moderate imagination as a constructive index had the effect of creating indifference to surgery, as also did some of the smaller regions of the lower Will. His moderate faculty of Language gave him somewhat of a disposition toward taciturnity, and he seldom said an unnecessary word. His intuition made his diagnosis sensitive and responsive to his observation and object-form; he saw the clinical picture clearly and quickly; his aggression, protection and intensity gave him great alertness and responsiveness to changed conditions, and still sustained great calmness in judgment. A wider forehead might add to his memory of specific formula, give more imagination and constructive mental vision,
more sociability and perhaps good humor. But the large Dignity, full in all of its specifics, would hold much of the social interest in abeyance.

**Very Large Dignity:**

Face b has also very large Dignity, but without large Amity, Reform or Sociability. The upper lip is severe. It deals with facts as essentials, rather than with friends as such. "Business is business," lurks around the corners of the mouth, prods up the high nose, and fills out the executive regions of the cheek. The heavy nose end and wings are constructive and industrial in their very corners from pure balance against the Will. The face is that of a manufacturer, controlling many processes and methods, protective and severe in the extreme, and reserved in even social attitudes.

The salesman who approaches this man will do so with due deference and good arguments, with timely products and careful statements; or, transit facilities will need to be in good order. The presence of so much Dignity, Defense and other Will faculties is a warning against presumption on anybody's part. As an executive this face is exacting, quick, never
dilatory or procrastinating; it compromises only when it must.

In partnership large **Dignity**, if evenly balanced in the specifics, is seldom a disagreeable faculty, though much depends upon the dispositions of the other partners. When they have only moderate or less **Dignity** and are inclined to any serious expression of ridicule toward the **pride or self-esteem** of the other member, there is apt to be trouble; or if the desire for power is pressed too much toward having its own way, a clear division of duties and functions is usually necessary or advisable. A partner with small **Dignity** as often causes trouble by indifference to his surroundings or his appearance. The counselor is often called upon to adjust or pacify partnership troubles of a personal nature, just as he is called upon to counsel in financial or other difficulties, or in prospective changes.

The counselor should study every phase of commercial prosperity or industrial condition that his time will admit, and he will find that the exchange of confidential information, often running into several hundred incidences within a single year, will add greatly to his knowledge and judgment. He should make it his rule never to advise except upon as secure information as his opportunities can provide, and if the problem is beyond his basic fund, to refuse to offer opinion or suggestion.

Natural laws are orderly when the conditions admit their action; upon these the counselor can rely in proportion to his knowledge of them. But industrial problems are open to the variations of many intentions, purposes and hidden factors, and so require a much wider particular survey than do specific factors under natural laws where these have been found operative. In firm counseling concerning those elements that depend upon the mentality and the elements of its faculties and dispositions, the counselor is not dealing with problems of unknown factors except as these may rest in ideas or opinions, to know which he has a right. It is a habit of people who seek vocational counsel to "sit mum," fearful lest they reveal themselves to the counselor, and to make him reveal his art in their cases, since they are unlike any one else. He need not worry over that fact; anything the individual could say would be past experience, but no evidence of potential or unexperienced abilities. His experience would rate only the combination of faculties he had used or educated, under the conditions he had used them.
Firms Are Still Individuals:

Firms are composed of individuals and the eccentricities of the individual members may make or break the firm, just as the faculties of the individual may make or break the success of the individual. In the case of the firm, the counselor will realize, just as he will realize in a working force or personnel, that the members sometimes restrict, sometimes liberate, individual abilities. The individual with powerful egotism and small judgment may exercise a control wholly out of proportion to his real value; the man with the egotism, aggression and political cunning may mislead, even honestly, the whole working force of an industry. The good sense of the individual members, in either firm or personnel, may be compelled to yield to a majority of bad judgment, either because of the latter's mass, or its persistence, or its intrigue.

Disposition versus Intelligence:

We call attention to the above facts here under this faculty because in experience so many instances of firm failure have been found to arise through adverse dispositions, rather than through lack of intelligence or experience. The personal equation of disposition may fall heavily upon excessively large or deficient faculties other than Dignity, but this faculty, in our estimation, can be credited with the largest proportion. These are instances of good powers gone wrong from over-plus or from deficient proportions.

In the two faces of Fig. 254, the powerful nose and upper lip region of a, the powerful nose and mandible region of b, are indexes of stabilizing faculties; reduce these regions to an average of the faculties of either face, and the dispositions described as theirs would change to serious faults.

In Fig. 255, the above suggestion is carried to face a, where these faculties have been notably changed, and Dignity made a strongly predominant faculty of the Will. In spite of the long Intellect, the face is in no way equal to face a of Fig. 254.

Face b, Fig. 255, has Dignity dominant, followed closely by Reason, Defense, Memory and Stability. The forehead is long, and the nose is high and long. The region of Dignity in the parenthesis of the mouth is full, indicating pride, love of personal power, of personal opinion, and an almost self-congratulatory self-esteem.

This mentality is saved from uncommon severity by a fairly high Sociability, Inspiration and Attention. Faculties
that we have not yet studied give it some executive powers; but it is chiefly noted for judicial ability, for the analysis and construction of opinions, and for its ability in harmonizing the divergent views of others. The face has changed but little since early maturity. Smooth out the wrinkles around the eyes, and it at once assumes a boyishness that shows the influence of high social organs and the balance of the Intellect with the Will. The face contains, dominantly, the judicial faculties; but other faculties so modulate it that it is not a typically judicial face, an evidence that vocations require typically related faculties, but need not otherwise be "typical" faces.

The purpose of including this face in the study was to make clear the fact that has obstructed the view of generalizers and expression readers. Unless one can select from the mass the regions of constant influence, one cannot often distinguish the combination of several faculties that are necessary to a specific vocation; in all other regions the face may vary from the preconceived type. One might as readily expect to pick out words from "pied" type, or understand the text of the broken sentence.

In Fig. 256 we have the faces of two executives, in
both of which Dignity approaches the maximum line, though held back by synthesis, judgment, imagination and tact in the angle-line face, and by analysis, system, vocabulary and calculation in the dot-line face. The angle-line face, remarkably even for an intense mentality, has larger Culture and Aspirations, but the Co-active, Wealth and Commerce faculties rank considerably the larger in the dot-line face.

Face a is that of a great French statesman and administrator, noted for his high claims to generous effort and to noble humanities.

The highly modeled nose, full upper lip, the moulded mouth, and intensive brows create an analysis line full of evidence of struggle and accomplishment. This is a good specimen of the demonstration of fine quality through modeling that is purposeful and orderly. The bridge of the nose would be slightly deficient in power, were it not supported by the solidly moulded and set mandible, the full chin and fairly firm cheek. These give indexes of such power that the slight sag in the mid-section of the crest of the nose and the hollow above the wing are not marked deterrent to success, though it is that of a technician rather than of a business man or of a merchant. It is rather the Will of the publicist and philanthropist than of a commercial manager. In fact, with Economy, Caution, Aversion and Destruction so low, and not well supported by Industry as a commercial force, it would have been highly inadvisable to have advocated a commercial life and to have drawn this mentality away from the life of a constructive legislator.

Notice the transitions that take place in the lines a and b. Face b is a banker and public spirited man of broad learning and sympathies, but capable of sustaining his decisions against any odds when his judgment is formed. This face has the specifics of a conservative financier; his analysis is capable of long and careful activity, his calculation gives him control of masses of numbers and quantity volumes, and the high vocabulary and the even mental cast undoubtedly allow him to express his thought with great exactness.

Face a, Fig. 257, is one of those good-looking faces the counselor finds difficulty in placing in any vocational field with particular prospect of success. The dominant analysis and supporting observation and facts are not well ranged for the higher professions; the Will is too small for good industrial positions; the nose is high and finely carved, but is not supported by economic power or purposes.

Vocabulary is not large enough for a technical secretary-
Dignity

ship, law, or other verbal or literary occupations. By obscuring analysis, a clerkship in a drygoods store might suit, the lack of intensity being substituted for by Amity and Sociability, by Laudation and aggression.

If we trace further down the line of analysis, we find Dignity and Stability small; the parenthesis of Dignity is almost level with a flat, shallow mid-cheek and a thin lower jaw. The Will, with the exception of Laudation and Defense, is too small for any commercial management or the expression of executive force.

Face b has altogether a different line and mass of specifics. It is intellectually highly constructive, with powerful Reason, Number, observation and vocabulary. These are all held away from the line of dominance by the powerful imagination and skilfulness in the Intellect, and the equally powerful series of Will specifics: note the region of Dignity; the parenthesis of the mouth swells out to a full and solid cheek, a wide face and uncompromising jaw. The line at Caution rises high in vigilance; Liberty is almost as high; Stability falls but a trifle; Industry holds its own, and solitude, rigor and severity hold level with the greater part of the broad Intellect.

The face is dominantly executive; it is capable of social and commercial vision, management, and of the application of all the kinds of force and power “the law allows.” Reduce the whole Will ten per cent. and it would still balance the main regions of the Intellect, would still be in the executive realm of activity, would still exercise a persistent, dynamic, commanding force wherever its quality placed it.

There are parts of the face, noticeably the temple regions and the regions of Form and Color, that have modeling that indicate fine quality and textures, giving a high index of power to the whole, in spite of its ruggedness. An acute observer would never expect face a to compete in accomplishments of any kind with face b; not because of size, but because the tonicity, texture, or quality is not present. Face a is not of low quality, but it lacks that intensity and constitutional fineness that responds to opportunity even of its own class of accomplishment.

Dignity versus Inertia:

Among the faculties that overcome inertia, Dignity probably ranks third, Defense and Industry normally ranking ahead of Dignity. The insistence on “doing something” of Defense
is in sympathy with the individually governed business and the actions of production on a personal scale, as in farming and the arts and trades. The insistence of Dignity is more inclined toward organized effort and associated competition, though like Defense it is personal as well as commercial. The depressing effect of small Dignity is most keenly seen in proportion to the diminished influence of other faculties that create what is often of late called “personality”; what on the farm used to be called “stamina.”

Comparative Regions of Dignity:

In face a, Fig. 258, the region of Dignity is outlined by the shaded line. In this face the heavy roll around the mouth indicated a rugged self-esteem, more inclined toward egotism and its self-satisfied purposes than toward austerity and cultured self-expression. Compare the region of the lower part of Dignity with that of face c, the rest of that face having practically the same outlines as those of face a.

In face d, Dignity is small and is hardly traced by the parenthetical line; the face has much of the cast of studious seriousness, due to the absence of Dignity and to a reduction of the region of the angle of the mandible.

Face b has large Dignity, chiefly prominent at the upper part of the region, the part where pride and love of power are indicated. This face has a fair amount of sternness, of reserve, of disposition to use compulsion, with a sense of renown and distinction.

Face e has relatively small Dignity. This face depends upon its intellectual conceptions of pride and self-esteem; consequently these are more largely imitative than the real impulses. Other Will faculties furnish characteristics of energy and determination toward accomplishments.

Compare the region of Dignity in face e with the region of face f. Notice that the muscles around the mouth in face f appear as though they were contracted to set the jaws. As a matter of fact, these have little to do with setting the jaws; they are here expressing a mental attitude.

In Fig. 259 we have analyzed the faces in the studies preceding this lesson, adding Faith, and Dignity. The aim is to indicate the difficulty found in assigning vocations when the Will is not fully considered, when one must depend largely upon the educational rating or upon the choice made from the formulating faculties in the Intellect.
These two men worked in the same enterprise, held positions that each had struggled to attain and had given a number of years to. Starting at the same level at about the same age and with no other advantages except that of potential differences in their mental specifics, they paralleled each other for a considerable time during the years when the similar specifics were required most intensely. But there finally came a division in the ways and one moved on to places where the other could not travel, though rated the higher of the two in the position from which the promotion took place.

We leave the vocations to the student, the question of who was promoted, a or b, and omit the telltale index of temperaments, and the rest of the Will. The fact of the part played by the Will in these two faces is not as marked as is generally the case, because these faces are both quite heavily endowed in all of the mental regions.

If we were to take faces resembling these closely in the Intellect and reduce the Will regions in particular specifics as yet unlocated or undescribed, the problem would be much harder, as the irregularities in the line of analysis of the Will would be increased. The question of what kind of an enterprise and in what division the vocation should be taken would be widened greatly.

Take as an example Fig. 260. The forehead, the end of the nose, the regions of the mouth and chin are very near face b of Fig. 259. The analysis line would run close to that face; if the quality were equally fine the Intellect might, on its own account, compete with face b; but the result would be markedly different, however twin-like the Intellect. If there were no indexes of relative power of specific abilities, why not expect these two faces to compete for the same positions, with equal chances? One legged men do run foot races and men with
two paws do work at benches. So, too, men with various Wills successfully follow various vocations, but not any kind of a Will with any kind of vocation, nor any kind of face with any kind of Will.

In Fig. 261 we have the same nose end, mouth, forehead and upper lip, approximately with high Dignity, and some other faculties of the Will variable. This adds to the vocational power over the kinds of abilities possible in Fig. 260, not only in Dignity but in other faculties that may be larger relatively to the Intellect. The powerful mid-cheek regions may or may not indicate the vocations of face a or b of Fig. 259, or indicate some other vocation where Dignity, Caution, Industry or other faculties are required as supports to synthesis, imagination, Number, observation, candor or tact in the order noted in those faces.
MERTON COURSE

VOCATIONAL COUNSELING
and
EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

BY

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LESSON NINETEEN

The Regional Influence and Products of Stability

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The regional influence of the faculty of Stability is in the lower side of the angle of the mandible, beginning about three-fourths of an inch from the acute bend in the jaw and extending toward the chin about one inch and a half, as marked in the illustrations.

As the faculty region is surrounded on three sides by other faculties, the influence of Stability and its specifics must be able to demonstrate its power without detracting from the freedom of the other faculties in their efforts to respond to their own constant, or molding, influences. It thus becomes necessary that Stability should indicate its size in one or all of three ways, none of which is confusing to the student.

In its development the region may grow broad in a wide spread of the jaw, or long downward from the ear opening and the zygomatic arch (cheek bone), or long forward and downward from the angle. Any one of the three directions may indicate the percentage, which, as in all signs of the specifics of the faculties, depends upon the relative size of the faculty compared with the whole face.
The Great Muscles of the Jaw:

Underneath the faculty of Stability is the insertion, or movable end, of the great muscle of the jaw, the masseter, and this muscle is under the influence of a number of Will faculties; but its chief expression is that of Stability, either in its transient expressions or in its constant influence upon the face.

The foci of the specifics are near the margin of the mandible, which is quite broad upward from its lower margin and under the muscles of this part of the face.

Figs. 263 and 264, of the muscular regions of the face, are intended to give a view of the substructures of the regions influenced chiefly by the Will, except those within the parenthesis. These do not explain the regional margins or blending of the specifics or even of the faculties, but indicate how local regions can be developed by mental influences playing upon the different parts of the bones, muscles and intervening tissues. The masseter muscle is dissected from the jaw bone to show the broad, slightly hollowed side and lower angle of that bone. The bone can develop backward somewhat, and outward, downward and forward, with considerable curve in any direction.

This development allows for any possible required expression of the signs in the lower part of the face without conflict with each other as indexes and without sharp margins of the local regions.

An Harmonic Stability:

In a harmonic face the faculty would form a well modeled region, neither large nor small, making an average of the percentages of the analysis. The size of the specifics is rated above or below this as indicated by its ratio to the maximum, or dominant. The harmonic or highly averaged face does not indicate an absence of the various abilities, but their uniform development.

Such a face is shown in Fig. 265, a face so unspecialized as to be almost vocationally inert, and yet it has evidences of high quality and fine general culture. The student of vocational counseling will be interested in discovering in what this face has the greatest natural aptitude.

Turning from Fig. 265 to Fig. 265A, we find a contrast in many specifics that is due largely to the broadening of the
various regions of the face. Some specifics are lowered relatively by the fact of others having been raised in power. The region of Stability in particular is broadened, hardened, and made forceful. The jaw is only a little longer, but the power is exerted in width and fullness. The upper lip specifics are actually larger in this face than in Fig. 265, but are relatively smaller when compared with other regions of their own face. The analysis line would vary much more widely, though not many regions are much depressed.
Compare a list of acquaintances with Fig. 265, and see how many are so regular in facial proportions.

Sometimes when the regions of the chin are powerful under the combined influences of other faculties and of Mobility, and hence the chin is long from the nose and ear opening downward, while the cheek is fairly slender, the specifics of Stability are lengthened whether large or small. In Fig. 266 we have an illustration of a fairly large Stability, rating at 90 when compared with some specifics of Reason, Construction, Form and Mobility. Attention is higher, and Language, Number, Aversion, Destruction and Economy rate between 60 and 90. Some other specifics fall to 60. In this face Stability is in competition with the long high forehead. This youth is tall, lithe, strong in the forearms, thighs and hands, is long chested, and narrow in the lumbar regions of the back. The influence of the strong chin gives locomotive endurance, while the dominant mental temperament adds intellectual endurance.

One Great Quality:

Some of the prime forces of Stability and of its addition to the executive life, are the forces of discipline. This distinguishing power of the natural executive demarks
his characteristics from every other class of powers and forms a natural barrier to those who do not possess this aptitude. It is not only that it is distinctive in its corrective and compelling nature, but in the manner of its accomplishment. It has the quality of being free from anger, antipathy, aggression or oppression; it has the nature of orderliness and force; it takes on the quality of self-action as well as that of the control or direction of others; it responds to Dignity in attitude and to Amity in quality, but differs from both; it multiplies its effect by the number
of people it organizes as the operating body it controls, and normally reaches its climax of power under the climaxes of its stress and need. The counselor will watch for this aptitude in the indexes of firmness, perseverance and fortitude.

In its attitude of discipline and control Stability thus differs radically from the angular or harsh or punishing disposition of Defense, Aversion or Destruction, attitudes where one vents his temper in anger as expressions of antipathy.

In the higher forms of executive expression, Stability ranks as the first faculty in importance. It is the stabilizer of the higher Will purposes, in whatever forms of expression those intentions may run.

Stability and Youth:

One phase of Stability is particularly of interest. It is the condition of the faculty in youth. In the upward growth of dominance of the faculties in the years of youth Stability is late in its arrival as a natural aptitude; this we noted in The Historic Growth Of Man. In youth and early maturity the defensive faculties are more intense and apt to be more quickly set in action; these faculties are often mistaken for the actions of Stability; even when their actions are changeable and spasmodic this is still true. The parent and the teacher and the counselor must be guarded in this substitution of origins. To "nag" an individual into defensive positions and then treat the matter as a stubborn resolution is a falsity of mental conception. To expect a set and severely determined disposition in a youth is not rational unless he proves consistently to possess the faculty of Stability awakened, aware and constant.

The process of arousing and strengthening a small or medium faculty is one needing careful thought and action. These elements are treated under various parts of the text. The counselor and employment manager will find many instances of low Stability accounting for misaction, inaction, changes in sentiment and conduct, and these often without malice or apparent causes. It gives the individual a feeling akin to wanderlust, a tension of unrest, and to some men an "unaccountable" uncertainty that defeats most of their promises, appointments or expectations.

Relations of Integrity to Stability:

The reputation for being untrustworthy is a common one springing from a too small faculty. Keeping promises, finish-
ing a job, fulfilling a condition, doing by natural inclination the right thing to do, are ordinarily considered matters of Integrity. To a great extent Integrity is the basis of such right actions. But Stability is part of the mental force that compels these right actions and that has to exert power when we may not even think of the matter as honest or dishonest, when a common habit gets to be negligence of the finer shades of reputation. Passing our faults up or down to the next man, laying the blame on others, shirking responsibility, are common habits that arise as much, perhaps more, from lack of sufficient Stability than they do from lack of sufficient Integrity. Many people do these things who would scorn being called dishonest; they drift into doing them because it takes "backbone" to face the results of acknowledgment, of owning up. High Integrity might prevent the fault, but it might not be consulted as having a bearing upon the facts. Sufficient Stability will carry its own load.

The Specifics of Stability:

The specifics of Stability, read from before backward along the jaw, are firmness, perseverance and fortitude. These terms, like several other terms of Will specifics, do not as clearly define the regions as do the names of the Intellect specifics. However, a tabular analysis may give approximate sizes of the words and an extension of their meanings.

The Specific Firmness:

The specific firmness gives Stability all of the phases of resolution, the desire for effectiveness, the persistent self-will that resists encroachment or opposition, the tendency to venture against odds of advantage, and the set positiveness that can mentally hold its own without the characteristic depression that follows attack and resistance when Stability is not large. These purposes often give the faculty the cast of austerity that commands obedience without much effort and that adds so much to natural executiveness and command of men.

This specific is not generally as large as the others, particularly in people who are not in positions where it is aroused to resistance by opposition of an aggressive kind. When large—usually so rated when between 90 and 96 in a moderately wide analysis—it inclines one to calmness and leniency, to the avoidance of haste in action, to reserve in the expression of
opinions that have not had time to mature, and hence it leads to considerable forbearance. Unless aggression and protection are large, this forbearance is one in manner as well as in act.

When this specific is intensive, as shown in Fig. 267, b, where the whole face shows indexes of years of intensive application to executive actions, the sign carries with its calmness evidences of positiveness, continuous exertion, fearlessness in judgments or opinions, and a disposition never to shirk responsibility.

Analysis of Firmness:

Large firmness, with large Aversion and Destruction, often approaches unrelenting harshness when it has found cause for severe disapproval.

When firmness is below the medium of the other faculties there is apt to be considerable vacillation in general conduct, irresolution under conditions of distress or opposition, a disposition prone to unreliability or to executive changeability. The counselor naturally will be cautious in placing men so endowed in positions where one's attitude should be resolute and steady. Other incentives might keep a man at work, but would not be so apt to make him resist the encroachment of opinions or of methods of a contrary nature. The other extreme, excessive firmness, carries with it the liability to stubbornness and lack of progressive habits of thought and action. This is often detrimental in private life as well as in vocational life; it is apt to incline other men to shun the chance of wasting effort in trying to modulate a dogmatic disposition. The moderating effect of the Aspirations, of Amity, Reform, Industry and Laudation on the extremes of firmness should be considered.
When the lower face is heavy and broad around this part, the Stability is inclined to its more personal side. The executive phases are often less marked, partly because the tendency of the heavy lower face is also toward individuality in business, and the go-it-alone idea.

**The Specific Perseverance:**

The specific perseverance is in the central region of the faculty, and, as its name implies, relates more closely to continued action than it does to resistance. This specific is often large in men who are noted for dogged intensity in effort, for the disposition to urge themselves and others into incessant occupation, for holding steadfastly to a problem or piece of work until it is finished. Along with other small specifics—especially those of Economy, Integrity, Industry and sometimes of Defense—it is usually small in lazy men or those who incline toward mental sabotage, who are willing that others shall do their thinking for them if they themselves can get credit for it, and where endurance is apt to cause fatigue. When small it is a large part of the failure's "If."

Sometimes when perseverance is dominant or one of the 100 per cent. specifics, it overdrives, and by keeping a man in a state of constant fatigue, prevents his reaching climaxes of power that would be possible under normal rest and effort. When men are on the verge of nervous breakdown from overwork, the counselor should watch this specific carefully and suggest the establishment of intervals of rest or recreation that may act as times of recuperation.

Self-will and the desire for effort in the mastery of an art or a science, a trade or a profession, is just as laudable as it is in the mastery of a business or an executive position in industry of any kind. The trade journeyman should be as proud of his trade as the works manager is of his mastery of production.

**The Specific Fortitude:**

The location of this specific is in the hinder part of the faculty near but not on the angle of the mandible.

Fortitude is the power to endure oppression, adversities and defeats that one feels are necessary under the conditions, or that one would rather bear than compel some one else to carry. It gives power to revive under disappointment and
states of depression, to suffer delays in receipt of expected benefits or accomplishments. It supports patience, courage, mental endurance under stress and duress, gives steady nerves in confronting danger or hardships, and resistance to temptations arising from organic demands of the feelings and appetites.

**Very Large Stability:**

Very large Stability is not as decided a deterrent to success as one may find in some other extreme Will faculties. It does, however, tend to excessive stubbornness, dogmatic action and resistance, persistent opposition, and inflexibility in opinion. It is often dictatorial and domineering when in power. In personal affairs it gives perversity or obstinacy that is unreasonable.

In dealing with this kind of a mentality, either in matters of trade or of opinion, one can expect to reach it only on the basis of its own necessity; what such a man needs he will take, and he will try to take it in his own manner, rather than in a spirit of mutuality or equality of right. Financial or commercial punishment sometimes unlimbers such a disposition; sometimes it is necessary to use a large dose of Laudation and compliment, to avoid opposition directly and to meet the problem as a condescension on his part. The ratios of the other Will faculties will do much to determine the most favorable mode of negotiation.

In counseling, it is generally best to suggest that so much resistance and dogmatic determination, or such setness of purpose, is expensive to one’s energies, and not a particularly distinguishing disposition; that this disposition is found in men of low order of mentality as often as in those of high order.

**Small Stability:**

People with small Stability are in direct antithesis to the disposition arising from a large faculty. The uncertainty of course, the tendency to vacillation, the habit of unreliability under pressure of purposes, are all bad vocational characteristics. Irresolution is quite an impossible condition of mentality in an executive or superintendent, and in the man who expects to reach a place of power. Eccentricity may be due either to excessive or to small Stability, and is usually a vocational detriment.
The Mental Relations of Stability:

**Stability,** through its powerful executive and governing quality, has a profound relation with the nearby faculties of the Will and with the faculties of **Reason** and **Construction** in the Intellect. The force relations of its specifics, however, are each widely scattered. Through **firmness** it reaches toward **synthesis** and **skilfulness,** because anything that is to stand, that is to resist pressure and the attacks of dynamic impulse, must have solidity of structure, some kind of tonicity, whether it is an attitude, an opinion or an idea, no less than if it is a substantial structure. The executive often needs as much power to resist as he needs to compel, and as much argument and evidence to sustain his position as is required to attain a position.

**Firmness,** too, requires a measure of freedom in action, a place to stand in of its own, a settled mode of progress.

Then in many men the lack of **Stability** makes them weak in resistance, in taking their own, in demanding and then compelling compliance. The counselor must remember these matters of demerit as well as those of merit.
Often, when a man is at the point of breaking from some overburden, the Aspirations may hold him steady, or his Dignity restore him to equipoise.

Perseverance is also a specific of Stability that has wide relations; they are particularly close with Integrity in order to hold one's honor, or fill the impulse of justice. With Economy it realizes the use of property and the security that wealth or means gives; and in the lower region of Destruction there is a relation between endurance, stressfulness, strictness and the purposes of perseverance. Often the unconscious play of these energies sustains the body where a less powerful Stability would give up in the contest, would yield through despair.

The specific fortitude receives support from the Aspirations and from Dignity in patiently bearing oppression, or trouble; from Amity and Reform in matters where heroism is required; and vital support from the Sensations in resistance to pain or physical depression. These give Stability the personal encouragement to carry an effort against the more depressing adversities.

Some Vocational Relations of Stability:

We have already noted some of the executive relations of Stability, but there are relations that are less in the field of observation, that are not considered executive in their nature. These relations are those of personal conduct, the range of self-control of the individual.

We have seen a good mechanic change from employer to employer, drift around and back to the same position, with a restlessness of purpose that was unaccountable by any ordinary reason. Observation of his Stability, however, at once accounted for his employment meanderings. Large Liberty, small Stability, told the story. Thus small Stability is a source of the expensive habit of squandering time.

The workman and the skilled mechanic should exercise Stability just as much, in proportion, as the executive does; he needs its virtues just as truly in his vocational life, if he is to get out of it all there is in it. A wishy-washy disposition, even with a large mixture of bluster and brag, is not a source of very intense enjoyment. The careless disposition is certain to lead to transient enjoyments, to a waste of what might be made of much more lasting use.

Thousands of men start toward success, then lack of firm-
ness of purpose, of reasonable perseverance along consistent lines, stops them, turns them aside into a bog. Many people have plenty of perseverance, but it is in a crooked or broken line; it sawtooths through backward as far as it moves, then forward.

In Fig. 271 we have the faces of two great executives, one in manufacturing and the other in railroad transportation. In the angle-line analysis, face a, the faculty of Stability stands fairly as the highest of the Will faculties, although in the Intellect synthesis, intuition, foresight, skilfulness, imagination, spontaneous judgment and system follow in close order, with tact, candor, vocabulary, calculation and quantity in places of vocational power. Integrity, Industry, Liberty and propriety in the Will are also powerful factors, although not dominating the disposition or course of executive life. In fact, this face a, with another to be treated under Liberty, was selected because of having these exceptionally rather slender lower Will signs and moderate dynamic faculties in the lower Will regions, from among over 15,000 chief executives of concerns. There are very few others who approached these moderate sized lower Will specifics; where this is true there are generally special conditions operating to give executive power. The generally high range of Amity, Reform, and the good-will of Love in this face is certain to have a bearing upon business methods, insight and interest in his employees' affairs and comforts, and upon the creation of a general reciprocal spirit.

Aversion, Destruction and Defense are low power faculties and play little parts in his commercial administration. The rather frail middle cheek region is uncommon in an executive face, and requires a strong mandible to take its place, and probably powerful defensive associate executives as aid in merchandising, works management and supervision of personnel.

In contrast with these faculties we find in face b (the dot-line face) some specifics of Stability, Integrity, Industry and Liberty so large they depress the highest specifics of the Intellect—synthesis, judgment, imagination, specific fact Memory, and mental-focus—all below the dominant line to the neighborhood of 95. Large as the end of the nose is, it cannot dominate the lower regions of the face.

This face of a powerful executive is able to withstand any kind of concussion that comes from the management or promotion of a great concern. The modeling of the face indicates
high quality and tension, the absence of any form of lethargy, the incessant mastery of one problem after another by a clear view of its masses.

This mentality must have arisen to power through the commercial line rather than through the engineering line of vocational ascent; the yielding of analysis to the synthetic form of reasoning whenever the latter method was possible, the rather low skillfulness elements (invention, object-form and the skill sign), are evidences in favor of this judgment; higher mathematics were less interesting than the intense control of men.

If we were to lower the executive Will faculties five per cent, they would still be high, and we see at once that a powerful combination of management specifics in the Intellect would rise close to the dominant line. Synthesis, we remember, was "to mass, to gather," judgment "to recast," imagination "to arrange together," the facts of specific Memory "to recollect," mental-focus to include matters wanted and exclude those that were foreign. Form, Number, system and time Memory, and intuition are near at hand in power.

Driven by the fine quality and the powerful Will, neither circumstances nor a disqualifying beginning would have prevented this man from reaching success.

The Will faculties are somewhat too hard, possibly harsh, where there is radical opposition, or where matters of contest enter in; but working behind a corporation, where there are buffers between this dominating Will and the public, the results are attained without anyone except competitors getting bruised, and the product is worth the contest.

It is not that this mentality is uncongenial, but it is unconstrained in its determination to get results, to establish a perfectly working organization, and to contest insubordination at every point.

We see that Economy is not large, is unselfish, simply demands results. The Will policy seems somewhat dominated by perseverance, utility and hardihood.

The uncommonly fine quality of these two men, the orderly relations of their specifics to their vocations, places them high in the realm of accomplishment. The same order of specifics with common quality would not, in these or other instances, allow them to reach distinction. A photograph or illustration can give us only the modeling signs of fine quality, and if this were all we had, some known accomplishment of an unusual order might be another key to quality rating.
Fig. 272 has three faces in which Stability is dominant. Face a has extreme analysis as its Intellect exponent. This is supported by large Construction and relatively large Number. The line of the executive abilities is evenly large, and the Intellect backs the line up with good essential regions for general executive effort. The face is not highly commercial, due to the lack of Economy. The whole line of mental power is somewhat too evenly developed for a specialized commercial or industrial life, but is fairly well adapted to military leadership, though this is not of the highest strategic order.

Face b has dominant Stability supported by strong Dignity and Laudation. The rest of the analysis line is remarkably strong and even at points essential to many kinds of executive effort, particularly in the directions of social organization of an industrial kind.

The face indicates a heavy executive mentality, cold and calculating in its policy or in its advocacy of a course of action—cold, because it stifles other impulses. It is not highly reflective or aggressive; but it has a broad Construction, an intensely focused Attention, a retentive Memory, a sensitive intuition, and a somewhat too synthetic Reason.

With a mentality so un-specialized as this face b, the organism must be of an exceedingly fine quality in order to reach high executive possi-
bilities. However, evenness of line of fine quality is more fitted to a general executive than to many of the specialized voca­tions. As an illustration of these less mentally specialized vocations—less aggressive and defensive—one may cite the fraternal orders, benevolent associations, welfare associations, and trades unions, in which many judgments or activities are matters of emotions, equities, forbearances, customs, and social courtesies.

Faces of this order are most often successful in positions of central or branch office or lodge management, where the more analytic or specialized or aggressive activities are carried on by other officers of the executive staff.

Face c of Fig. 272 is an executive face of quite another order. Non-spectulative sagacity is marked by the high-power faculties. The nose is long, heavy and large, in which Reason is indicated as large and evenly balanced, and Attention as both observing and focused.

The width of the temples at Number indicates a splendid memory of quantities and of mass relations. Memory and Language are large enough to retain facts, system, and association of ideas, as well as to sustain argumentative positions. The executive faculties have a somewhat irregular line of power, but it is high in several essential executive faculties, notably so in Stability, Defense, Dignity, Laudation, and Economy. This is the face of a highly successful lumber merchant.

Fig. 273 indicates several sizes of Stability in outline faces. In face a the region of Stability is enclosed by the dotted line. This Stability is extremely large in decisiveness and firmness. It is large in the element of perseverance. These regions stand out strongly, notwithstanding the fact that the face is powerful in the lower forehead, nose, cheek and mandible. The upper lip, the septum, and the alae of the nose are relatively small.

In contrast with face a face b has Stability small in decisiveness and firmness, but fairly large in perseverance. The end of the nose is short, heavy and dubbed, the bridge low and undefensive.

Face c is widely contrasted with faces a and b. The thin, long, unstable, untrustworthy, but persevering mandible; the high, thin, long, full-ended nose, indicate many varieties of sagacity, shrewdness and disdain. The drooping eyelids indicate the habit of unexpressive scrutiny, also shown in the end of the nose.
Compare the mentalities of Pompeius Maximus, Robespierre and Fouche with the map of the facial regions so far studied. Those faces and their characters match their life histories with such minuteness as to be astonishing when one considers the delay in discoveries concerning the fact of facial regions under specific influence. Outside of the life of man no series of phenomena in the whole range of natural science compares with this in variety, in peculiarities, and in subtlety of expression.

Face d has medium sized Stability.

Face e has fairly large Stability, and face f has large Stability.

In Fig. 274 we have two faces of capable retail merchants of heavy products, and a partial analysis of the two faces, which gives the prominent vocational facts. In Figs. 275, 276 and 277 we have two faces and two blank analysis tables. The student is recommended to fill these tables with an analysis in pencil lines in the following manner.

Observe the faces for the largest of those specifics you have already studied and write them in on the high line as the 100 per cent specifics and vocational dominants.

As an illustration of that process: In Fig. 274 face a has the perseverance and fortitude of Stability at the maximum rating, while face b falls away to 94 on firmness, where both faces agree. If we begin at the highest Intellect point, because we have studied all of the Intellect specifics, we find: At synthesis both faces nearly touch the maximum; analysis and judgment being lower this takes away all really analytical vocations. Observation and scrutiny of face a are third in power in the Intellect. Observation and mental-focus are nearly equal in face b to those of face a. Notice the variations in the ends of the noses; scrutiny is somewhat smaller in b than in a. The specifics of Number and of Construction are third in power in both Intellects. Notice that the angles of the Number specifics are reversed; calculation is easier in a, quantity judgment higher relatively in b.

Construction is closely alike in both faces, large enough to keep a plant “fleet” in order, to watch for mechanical methods in shipping, but not large enough to lead either face to care for a mechanical or constructive vocation.

The specifics so far are not highly vocational in their indexes, but the faculties of the Will point to a career. Of these specifics we have studied only those of Dignity and Stability.
Supposing Defense, Economy, Industry and Integrity to be well represented in volume, as shown by the analysis lines, these would undoubtedly lead to a merchandising vocation, to civic interests and local industrial progress. These merchants, as noted above, are interested in heavy products—coal, lumber, ice, or freightage. Hardware has too much of mechanics and construction in its field, and so of other objections in many of the other industries.

The dominant of Fig. 275 will be much harder to establish than that of Fig. 276; the lowest Intellect specifics in Fig. 276 will be much smaller and more easily found than in Fig. 275. Choosing a vocation will depend much upon the past study of vocational requirements.

We include here blank analysis tables (Fig. 277), upon which the student can make analysis of the specifics—on chart a of Fig. 275 and on chart b of Fig. 276—drawing vocational judgments as well as can be done without the unstudied Will specifics.

We shall include in following studies a few blank analysis charts which can be filled out later as the specifics are completed. These charts are rather small for practical work, but larger ones are impractical in the text.
In Fig. 276 the variations are much wider than in Fig. 275. It is well for the student to make his analysis vary in percentage in proportion to the facial variations. Thus if the smallest specific of Fig. 275 ran down to 70, the hollow malar space,—the hollow mid-cheek region and the slender mandible or the narrow regions of the forehead in Fig. 276 may fall to 50 or 55. The student may find certain parts of the Will, as the high bridge of the nose, the sharp prominence of the cheek bone, the lower regions of the mandible, that are larger than any of the Intellect specifics, and because of these prominent regions, may need to mark the highest Intellect specifics somewhat below the maximum line of 100. This would simply be rating the unstudied regions at their full value without specifying them, and rendering vocational judgment upon the prominent faculties of the Intellect.

The student will do well to write in their vocational order the specifics of vocations as these are treated throughout the course; in writing them or thinking them carry attention from one sign region to the next, forming a mental picture of the sizes of the specific, or subfaculty, regions. This may appear to be going to considerable trouble, but remember that you are mastering a profession and that every worth while profession requires effort in proportion to the results to be achieved.

As an illustration of this last suggestion, refer to the vocational description of the Chief Standard Practice Engineer; there we find the specifics in the following order: analysis, judgment, skilfulness, imagination, calculation, object-form, motion-form, observation and the Aspirations, with a fair volume of power of Stability, Integrity and Industry.

The Chief Planning Supervisor would be written in the following order: analysis, synthesis, imagination, calculation, Stability, system, separation, time, tact, Sociability, Dignity, Industry and Caution.

These are vocations that are both technical and executive, are high salary vocations, and carry an unusually wide range of specific activity.

It is not necessary to remember outright the whole order of specifics of several hundred vocations, but this writing and reading of them in their required vocational order will make readily practical the recognition of the vocation when studying a face that fits one or another of the lists, just as one recognizes an otherwise forgotten face on reseeing it.

In Fig. 278 there are four faces of banking executives fill-
Stability

ing positions very similar to those in several of the industries. These faces are of highly competent men, without a single deterrent in their mentalities to the greatest possible success. Their ratios hold clearly to the vocational composites of their vocations and are worth the careful study necessary to perceive the prediction of some one else's success in their kinds of work. The student will find in the twenty year old the potential powers seen in these more mature faces, if it exists there. This is an art of personal prediction based upon the unexperienced possibilities of the individual, obedient to natural laws, just as the naturalist predicts that an oak will bear acorns, an apple tree, apples, and a pecan tree, pecans. So vocational specific abilities are predictable and will bear specific vocational results.

In face a, the bank president, the specifics of Stability are on or near the maximum line, propriety and frugality are very near it, with synthesis, analysis, deliberate judgment, intensity, utility, calculation, separation, observation, imagination, Memory, Integrity, Defense, Aversion and Destruction, in this order.

In individual faculties, synthesis and analysis should nearly balance each other, as some problems are to be settled quickly and upon almost spontaneous judgment, being generally in the regular order of business but still not routine; some extend to the thoughtfulness of deliberate judgment, and others require a concerned and careful analysis of subject matter and conditions.

Stability must be powerful enough competently to support Reason against the intensive pressure of financial interests for or against various propositions and policies, pressure that is often brought to the verge of breaking commercial relations or starting adversative legal actions or changing the official personnel of the concern.

Economy in these vocations is not so much a matter of personal action as it is of financial policy and investment. The president usually has much voice in the particular, the more permanent, policies, especially those of propriety. Some of the faculties rated have not yet been studied, but can be referred to later.

Face b is that of a controller in a great concern. The elements of his face form a wonderful combination of specifics. The mastery of accountancy, commercial organization, control of personnel, the vision of operative values and expenditures, the analysis of functions to be performed or that are required.
Stability

the evident intensive steadiness of the highly modeled Will as shown by the side face below the brow line, are all indexed by the ratios and modeling. We propose to leave this face undescribed for the student to work out as a masterful study in counseling and analysis of specifics.

Face c is a composite of several successful corporation secretaries, the mental stress falling chiefly upon vocabulary, rhetoric, observation, object-form, secrecy, intensity, utility, Amity and the Aspirations, with firmness and perseverance somewhat smaller than the dominant but still operative enough to lend force to delegated actions.

In d we have the face of a first-class trust officer, rated as a model in his work. The face is finely modeled, almost too harmonic, but varied by mass regions enough to specialize his executive and other vocational elements.

In this face the region of Integrity is powerful by a gradual fullness, observation stands high, the Aspirations are very full, synthesis follows closely, and intuition and esthetics, with Amity, are near the maximum line, with calculation, firmness and perseverance close. Some unstudied regions fall considerably lower, enough so to take away the power necessary to the presidency; analysis is too low for accountancy or controllership, Language not prominent enough for secretaryship, Construction too small for the commercial vision of promotive work; the temper of the whole is not hard enough for a real estate officer, especially where the questions of mortgage and appraisal are concerned. The trust officer has many delicate social as well as financial functions to carry on. His work is seldom promotive, it seldom is aggressive; it needs firmness, perseverance, but not hardihood or large freedom of action. The presence of the Aspirations so early in the list of requirements proves the need of high congeniality, and that of Amity, the need for good humor and imperturbable friendliness.

Fig. 279 is the face of one of the greatest works managers in America. This face is too long to be a composite of the great majority of work managers, but the dominants of the face run nearly the same in relative sizes. This face and those of other works managers indicate the requirement of a powerful Will as shown by the cheek and lower jaw. In faculty power the order is Construction, Reason, Stability, Attention, Industry and Defense. The specifics are somewhat more involved in their order, as follows, or nearly in this order: imagination, analysis, synthesis, observation, firmness, persever-
ance, spontaneous judgment, invention, calculation and mental-focus. It must be borne in mind that mechanics and mathematics are products of Construction and analysis, though these need also the support of fairly large object-form (for geometry, drafting, plan work, etc.), and of calculation (for the arithmetical interpretation of mathematics); that this face has these large enough can plainly be seen by the student.

The works manager must be a master mechanic and a controller of men, an executive with an equable temperament, a man of profound judgment on means and conditions, and capable of harmonizing the working parts of a large concern. Probably no other position in an enterprise of a given size is so difficult to fill or requires so wide a range of nearly equal specifics of high quality. His aids are, necessarily, specialists controlling other specialists, and hence in a wide productive industry require complex and continuous co-ordination.

On face b of Fig. 279 we have marked the order of some of the specifics of the faculties of face a; other faculties in the mid-cheek are quite powerful, and nowhere is there a specific that is far enough away from the dominant to weaken the face. If any fault exists in this
face, from the vocation viewpoint, it is rather its great even­
ess than the fact of weak links in the mental chain of abilities.
However, for the benefit of a later review of this face we call
attention to the gradual shading down from Integrity through
Caution, Language, Dignity, some specifics of Aversion, De­
struction, Color, to the lowest faculty in the face, Economy.

This small Economy would be a stumbling block to suc­
cess were it not that the equity of Integrity, the sense of
property values, it is quite high in the scale.

We have analyzed the faces of several engineers and super­
intendents of manufacturing under Construction and Reason.
In these it was seen that the faces were generally broader in
proportion to their lengths than is this face of Fig. 279; the
bridges of the noses were generally broader and not quite so
high. These variations were not at vital subfaculties. The
need of great management ability in the vocation of works
manager controlling an extensive works staff, and the need of
operative prevision are filled in some ways by the longer face
when it still sustains its ruggedness and power. As an illus­
ration of these long but broad faced executives, we recall the
faces of Admiral Farragut, Generals Lee, Porter, Thomas,
Sherman, Wellington, and a large number of industrial execu­
tives, though seldom does one find a thin faced industrial
executive, unless the malar bone and jaw bone are extra long
and rugged. The reasons for these facts are treated in their
proper places, because the variation from the needed power
defeats the end in view, that of mastery of conditions and the
able selection and direction of men.

Concerning this selection and direction of men, we quote a
paragraph from "How Choose The Right Vocation":

"Wise handling of men who themselves possess qualities
of leadership requires shrewd insight, superior judgment, a
high sense of justice, absolute integrity in personal relations,
and that broad spirit of fair-mindedness which is back of all
enduring co-operation, back of managerial team work." Man­
gerial team work is a result of understanding the mentalities
of men and co-ordinating their vocational relations.

Executive Vocations Demanding Stability as a Supporting
Faculty

Chief Standard Practice Engineer: Must direct and con­
trol the work of a force of specialists in investigating plant
conditions, instituting the best practice methods, analyzing
jobs and causes of inefficiency. Must be able to harmonize the staff and the line in matters of interoperations, and must cling close to absolute facts with the least possible hypothetic values. Analysis, judgment, skilfulness, imagination, calculation, object-form, motion-form, observation, the Aspirations, Stability, Integrity and Industry.

Time Study Engineer: Must direct and supervise a corps of men in making time studies in the shops, must understand the essentials of mechanics, should understand physiology and the human motion system; should be able to teach time study problems, analyze and tabulate results, determine standard time for jobs, and exercise perfect equity between the employees and the concern. Analysis, judgment, Integrity, skilfulness, observation, calculation, tact, object-form, motion-form, Stability, utility. Must not have excessive Dignity, Laudation, Caution, or Aversion, nor be low in Integrity, Liberty or Defense, or a large part of their specifics.

Chief of Bureau of Standards: Must keep convenient, and supervise the preparation, classification and filing of, all records from studies of standardization, job analysis and time analysis, and must exercise equitable judgments when rates are under question. Issues written standard practice cards, schedules and instruction. Requires a fair mastery of office management, and the avoidance of waste time. Number, Form, Memory, analysis, Stability, judgment, observation and Industry. Moderate executive faculties should be evenly balanced.

Chief Planning Supervisor: Supervises the staff planning, scheduling and organizing of all of the materials and work in process, carrying on the flow of the work through the plant as prepared for by the different departments. Is closely co-ordinating and subject to considerable conference and a large amount of executive effort; acts as co-operative modulator to the shops and production departments of the whole organization. Analysis, synthesis, imagination, calculation, Stability, system, separation, Memory of time, tact, Sociability, Dignity, Industry, Caution.

Dispatch Supervisor: The chief assistant to the Chief Planning Supervisor must keep track of and plan the dispatch of jobs through the works, expediting the handling of materials, watching and co-ordinating the schedules of parts. He should be a good mixer with the working force, keeping a congenial and yet dignified attitude in the liaison of working
units in the progress of various focusing lines of work, operating closely with the scheduling supervisor. He requires high analysis, synthesis, Attention, Memory, constructive imagination, Industry, reciprocity, vigilance and Stability. The Aspirations and Amity should be capable of harmonizing the personnel elements of the work being done.

Chief of Computing Department: This vocation is one requiring a high standard of mechanical technic, of arithmetical and mathematical ability, and the mastery of the equations of chance, averages and records. These necessities demand the selection of sub-assistants who have in their range of mental analysis the operations of practically the whole plant, and the ability to gain freely the truth concerning records of accomplishments, places of liable loss of time and materials, the specific bases of routing charts and graphs, and the application of the reports of the Time Study Engineers, Standard Practice Engineers, Premium and Bonus and Paymaster Departments. Where heavy mechanics and technical results are prominent, this vocation requires: analysis, invention, skillfulness, object-form, calculation, synthesis, judgment, Memory, Stability, Industry, Caution and Economy in closely the order given. The assistants generally require a competent mechanical and mathematical education, some experience in shop practice, and specialized mental abilities and training.
MERTON COURSE

VOCATIONAL COUNSELING

and

EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

BY

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LESSON TWENTY

The Regional Influence and Products of Laudation

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The region of influence of the faculty of Laudation is in the mid ridges of the upper lip, between the Aspirations on each side. It begins in the valley of the crests of the lip and extends toward the sides of the face a little over the crests, as shown by the dotted line in Fig. 281. This margin line varies slightly in different faces, and the characteristics of the sign vary. As is the case with Amity, Reform and Sociability, the regions within the parentheses are mobile and express the signs of a large number of specifics, so must adapt themselves to each other's needs as indexes of constant influences. Laudation, the only Will faculty within the parentheses, has quite a permanent place as the chief region of attachment of the circular muscle of the mouth, the orbicularis oris. The prominence of the upper jaw bone in this region, the teeth and the nasal spine, are all parts of this permanent expression of the faculty, as modifying the surface and having a direct bearing upon the contours of the regions around.
In the dotted line of Fig. 281, the whole faculty is given. It is seen that its lower margin blends with Amity, its outer margin with Love, of the Aspirations, especially the specifics goodwill and trust, its upper margin with the deliberate judgment of Reason. There is a chord of the fifth in the relation of the second faculty of the Aspirations (Love) and Laudation of the Will, similar to that existing between Faith and Stability.

In face a this region is shown quite full. The upper lip oversets the under lip considerably; it carries the contour well out the septum, making the nose seem rather short from the face out, though the nostril stands quite far back.

In face b the lip is short from the nose down. This takes power from the whole region, even if it is of normal thickness, and thickness is the chief factor of the size of the faculty. The lip is thin in this crest, and hollow, hence the faculty of Laudation is much below the average of the face. Of the visible face in this drawing, Laudation is the smallest of the signs, or at least not notably larger than the indexes around the mouth.

The contrast in the two faces gives an opportunity to notice the outlines of the regions. Like all oral territories, the size is increased with the fullness, or mass. A small thin index shows proportionately low power. A large thin index shows more power than the small thin region, and as the region thickens and broadens the power of the faculty increases.

The student need not be in doubt as to relative sizes where the amounts of the faculties are expressed in several ways, as instanced above, that is, by fullness or breadth or length. The simplest statement of the measuring process may be that we mentally sum up the thickness (or fullness) and surface size, as one would any other quantity of mass, as length, breadth and depth, added to each other. It will be found in the greater number of mental signs that the thickness, shown by fullness, is the chief expression of size. The high bridge of the nose, the spread of the wings of the nostrils, the full cheek, the so-called high cheek bones, the projecting brows, the full lips, the wide forehead, and so on, with other or lesser areas, are in vital fact fullness or thickness of the regions. If these regions were diamonds or other precious stones, we should seldom make the mistake of not knowing which of two or more was relatively the larger or more valuable. The nose is never as large, even on an Allie Soper, as the cheek is or the mandible is, yet relatively to an average of the features of a harmonic face, a nose may be very much larger in proportion than is the cheek.
or jaw. We recur to this fact here, because this faculty of **Laudation**, and other faculties to be treated, may rest in comparative planes or broad surfaces to be judged from side to side of the face, or may rise in crests that are of larger or smaller territories than the harmonic face would have. Thus the regions within the parentheses of the mouth may be extremely broad, but thin, and so be rated small (compare Fig. 286 with Fig. 294), and a smaller region in territory, but much thicker, be rated large in proportion to the rest of its own face. Then remember the fact that when the specifics of the face are rated with each other, just as land is valued not by its acreage but by the quality of the soil, so the mentality is valued, vocationally, by its quality and cultivation.

Face a in Fig. 282, is a celebrated face — Hamilton Adams of Southampton, holding the King's and Queen's medal for the Boer War, the Royal Red Cross Medal, Military Medal, Mons Star, and many other decorations, for bravery, skilfulness and devotion to high service.

In this wonderful woman face it would be difficult to choose the dominant faculty. The Aspirations and **Laudation** in the upper lip are probably the highest in power, followed by **Integrity, Industry, Caution**, intu-
ition, synthesis, mental-focus and object-form. The parental and patriotic faculties below; the red membrane margin of the under lip have great static power.

Among the hundreds of thousands of notable faces we have observed, few compare with this remarkable face in the order of succession of Service and Welfare specifics. These extremes are not necessary, but such a face offers evidence of the specific location of mental influences in the face, more favorable than any ever offered in its contravention by all the metaphysics and psychology ever written.

The enormous serenity in the corners of the mouth is reflected in regions of the eyes; the regions act as complements of each other. We say "reflected" in these regions, for serenity is not shown or located around the eyes. Cover up the lower part of the face. The eyes are earnest, but not necessarily serene. No other part of the face can take the serenity from the corner regions of the mouth. Nevertheless, the furrow region of the upper lip, long, full, broad, expressive, and subtly blended with Amity, holds its modified dominance. Here, too, we shall find the importance of the subfaculty specifics. After reading the description and regional influence of these specifics, it is suggested that the reader return to this face and note the relations of the three regions to each other, and their trend of purposes.

In contrast with this face a note how ordinary the whole of face b appears. Face b is a well developed face, more orderly and evenly moulded than the average face. But it lacks specialization, definite power, and the artistry of accomplishment that is an evidence of notable work. Its Laudation is below the medium of the face; this is only a small part of its moderate vocational value. The region is unmodeled and its powers are not thrown down by high faculties around it; it is not in competition with Dignity, Amity, or the Aspirations. So it must be rated small and inert; one can hardly expect it to have even latent power.

The General Nature of Laudation:

The faculty of Laudation is the most expressive faculty of Ambition, just as Sociability is the most expressive of the faculties of Culture.

Normal or fairly large Laudation is the most equable size in its vocational influences upon the character and general attitude of the individual. This slightly larger than average
Laudation

volume of power adjusts one, in its own habits, to the best conditions of life, either in the private life of social surroundings or in the more intensive relations of industry.

In the vocational life it has a genial bearing upon accomplishment, upon the outward expression of personality and conduct. It is a faculty that when in moderate power makes itself felt through the habits of the person rather than through the accomplishments of the mentality. The counselor will note its possession by its disposition normally to compliment and recognize the merits of others, by its response of approval of good actions, by its evident desire to receive all of these, and by its general tendency toward a progressive, up-to-date atmosphere.

In many ways emulation and praise unbend large Dignity or Stability, especially taking the edge from their austerity and general rigidity of purpose. This effect is particularly noticeable in men who have very large Dignity and Stability, who thus are inclined to be stern, harsh, proud or austere, and need some of the complimentary and plausibility tendencies of Laudation. Or, on the side of small Ambition, men who would be negligent of personal looks and habits, who would carelessly let themselves seem “run down,” or indifferent to their appearances, can receive from Laudation a sense of emulation and a desire to look well or to do well that the minus pride, self-esteem or perseverance does not give. The counselor can go at this last class of men with “hammer and tongs” and urge the necessity of conforming to the general standards of the times, the habit of looking presentable where the vocational circumstances warrant, of at least trying to appear successful whether so or not, as reputation has an influence in both good and bad directions.

When Dignity is only moderate, all of the specifics of Laudation have a greater value in conduct than when Dignity is large. In a very decided way these specifics make up for deficient pride and self-esteem. They are thus valuable in their own right when needed to brace up, encourage, and add assurance to the individual under depression or indifference.

The counselor should keep in mind the fact that many people feel the oppressions of real or comparative failure, that many work themselves into depressions of either social or economic dejection, that much of the unrest of employment and of home life is due to the real or imagined absence of hopeful opportunity and confidence. In preventing these states of mind, one or all of the specifics of Laudation may be
the tonic or the support that prevents some form of disastrous effects.

Small Laudation creates an attitude of indifference toward the social conventions of good outward behavior and it will take considerable influence to offset its effects. The common sayings, that a man is rich enough not to need to dress well, or is brainy enough not to need to act in a cultured manner, are not as complimentary as they pretend to be, since the sloven and ignoramus classes are hardly laudable examples of mankind, nor of highly exclusive social sets.

The Locations of Laudation Specifics:

The specifics of Laudation are praise, emulation and display, read down the faculty region in that order, as shown in Fig. 283, where the contractions of the terms are upon the focuses of the specifics, as these bend over the crest of the ridges of the faculty.

The signs of these subfaculties vary much more than is ordinarily supposed from casual observation, but from very small to very large must be read, as in other signs, by their relative sizes to each other and to the dominant and minus faculties of the whole face. In Fig. 282, a, we see the faculty as one of the dominants of the face, but have not read the subfaculty ratios to each other.

In Fig. 283 we give these specific locations, without rating. In following illustrations we shall treat the subfaculty sizes as well as local regions. In the meantime it is necessary to describe the nature of the specifics, as a key to describing and urging their culture or repression.
The Specific Praise:

This specific gives the disposition its tendency toward praise of others and desire for praise from others in proportion to its size. In moderate volume it is a useful and vocational element in the disposition, as there are few people who are not desirous of rational approval of their acts or looks or position. The approval may take various forms and its results be shown in various ways. Its incentive toward commendation makes it of value in the social and industrial conference, leading to goodwill and encouragement. In seeking admiration it shows respect and homage as well as feeling these; it normally has a fair degree of deference for the opinions and wishes of others, sanctioning what the Intellect approves or reserving its endorsement when under disapproval.

Very Large Praise:

When this specific is very large, unless held in restraint by Stability, Reform, Caution, or some other conservative influence in the mentality, it is very much inclined to act as self-esteem acts, except that self-esteem in excess may be reserved and undemonstrative, while excessive praise is voluble, demonstrative, over-laudatory, and apt to compliment any thing or person without particular discretion, often with insincere flattery.

A man with large praise desires to be extolled and complimented and is pleased with the expression of appreciation, but is generous in giving these compliments and recognition to others, which is the reverse of the habit of large self-esteem of
the **Dignity** specifics. A large specific of **praise** is thus in its outward action almost the reverse of large **pride** or **self-esteem**. It is liberal in giving as well as in receiving.

It is often very largely in evidence in people fond of making after dinner speeches; it is closely associated with the Aspirations and naturally responds to the attitude of religious adoration. Large praise is often found associated with the expressive arts.

In Fig. 285, face **a**, praise is large and much larger than the other **Laudation** specifics. It has here the attitude of desiring commendation; its relation to a somewhat smaller **emulation** and still smaller **display** turns its impulses in that direction.

**Small Specific of Praise:**

In Fig. 285, face **b**, praise is rather below the medium range as far as the other faculties are shown for comparison. It does not create a positive and hearty response to the recital of accomplishments, except as this response is an outgrowth of **Amity**, which is larger in this face, or possibly a result of **Sociability**.

Very small praise trends toward indifference of manner where no personal interest is felt, a matter-of-fact literalness and bluntness, or even tactlessness, which may be unintentional. It sometimes comes a part of coldness or the expression of cruelty.

**The Specific Emulation:**

The specific **emulation** is located in the mid region of the sign; it is more a matter of intention and of purpose than is the specific **praise**.
In Fig. 285, face a, it is quite large, though not so large as praise. In face b it is the smallest of the three specifics. In its personal effects upon the disposition it works toward accomplishment. It has social rivalry in mind when fairly large, and drives forward to aid in making some form of attractive success.

When emulation is large and display moderate, emulation incites one to rivalry and an effort to gain fame or recognition. Its powers are seldom either vocational or social deterrents, since even jubilation and the sense of conquest are not in themselves attitudes of harmful intent or of egotistic disdain.

Small Emulation:

Small emulation gives a disposition toward working out one's own methods, using hard practical facts and means as levers, rather than any particularly gracious or conforming policy. It diminishes ambition by lessening the incentives to accomplishment, in the absence of a desire to equal or excel the performance of others or one's own previous best effort. It is often demonstrated by bad manners, indifferenc to customary conventions or social responsiveness, and affords a good opportunity for the counselor to exercise commendable advice.
The Specific Display:

In Fig. 283 the specific display is much the larger of the three and the lip sets forward considerably at its lower margin. Often it is simply thick, or deep, in this region, when large. The indication is practically the same whether it stands out alone, or with its companion specifics. In this figure Amity is not very marked; the lip is short and, while full, the sign is nearly all display. The short lip, however, reduces the size of the sign to a considerable extent, and changes its meaning to that of adolescent showiness and transient love of good clothes, appearance, and fondness for compliment. It does not give the rather heavier plausibility and flourish of the long heavy lip.

Display is always more personal and outward in its expression and influence than is emulation, and even more than is praise. It does not have the reciprocal attitude of praise, the "pat me on the back and I'll pat you" attitude of large praise, nor the half secretive impulse to rival and excel of emulation.

Very Large Display:

Very large display, unless strongly held down by Stability, Reform and Caution, generally expresses itself in vanity, ostentation and superficial flourish, particularly in dress, ornamentation, and other forms of excessive show. Various kinds of gaudiness and extravagance grow out of very large display when uninfluenced by artistic sense or good judgment. Vocationally it may be a decided fault in causing over-dressing and thoughtless waste of means. It is influential as an incentive in many cases of petty larceny, forgery, cheating, embezzlement, and various other means of shady accumulation, in order to gratify a love of display and egotism. This does not mean that very large display under the normal restrictions of a balanced mentality leads to these results, but it is a strong factor under other conditions noted under Integrity, Dignity and other faculties.

Small Display:

Very small display, unless offset by large pride and good taste, has a tendency to prevent proper attention to the maintaining of an attractive and pleasing personal appearance, and may also cause too great reserve in disclosing one's abilities and accomplishments. Both of these may act as vocational deterrents.
The Mental Relations of Laudation:

In the tables of the Mental Relations of the specifics of Laudation, we have included the table of analysis of the mentality and duplicate tables of the vocational faculties, with praise on one of the tables.

It has been urged that the tables should be studied for the purposes of understanding faculty relations and of gaining an enormously extended definition of the terms of the faculties. These tables cannot be based upon the limits of pure synonyms, because carried to extremes of size the specifics reach far beyond any list or condition of synonyms and include a whole series of terms of various sizes. These tables are not synonyms in the sense that synonyms or similar term-meanings are about equal in size, but they vary the meaning of the equal words. Thus the synonyms of laudation are generally given as praise, glory, fame, renown, commendation and extollation. In common use these words may seem to be of equal size or value of meaning. But a table or analysis of words cannot be made under these conditions. As an illustration, "display" and "flourish" or not synonyms in size, because "flourish" is only one-twelfth as large as "display." The other eleven words have a right to a place in the table of display, with the other thirty-eight words that have a right in the table of Laudation.

Another factor, however, having no relation to the etymology of words but arising from the nature of the actions, conditions or relations that words describe, enters into the analysis; that factor is the natural law of all actions, of conditions and of relations, that some of them are negative, some static and some positive. Some of these mentally are formative, some static, some executive; and furthermore, these formative, static and executive conditions must run, comparatively, through the whole extent of every analysis, through the extremes of definition as compared with each other in every subdivision. Whatever the state of each group, it has a relative extension of the three conditions; at each branching the same fact is present, a state of formative, static and dynamic relations.

Some students will not care about these facts of analysis further than the main facts of the temperaments, of the general groups. Others will wish to go into more extended study, to understand the basis of analysis throughout the tables. This is further extended by the relations of the analysis to
other faculties. Thus **Dignity** is most formal, **Stability** most static, **Laudation** most dynamic or expressive, of the faculties of Ambition; **praise** is most formal, ** emulation** most static, **display** most dynamic of the specifics of **Laudation**; admiration most formal, consent most static, and approval most dynamic and expressive of the subdivisions of **praise**. A further analysis of approval would need to include manners of action that were formal, static and dynamic, each more so than the others. The further words analyzing approbation would not be synonyms of approbation, but varied extensions of its meaning.

This law being universal, the same condition must apply to the analysis of any condition of activities or states or any thing in the universe. In instances of analysis where the distinctions of these orders seem frail or undemarked, it is evident that either the generalization of the terms of the language does not convey the idea truly, or the analyst is at fault in his concept of the meaning required or of the meaning of the terms; or he may be at fault in the search for the true term or true sequence of magnitude in meaning.

The naturalists who have classified the orders of the animal and plant kingdoms have found enormous difficulties in the genesis of relations, and the almost impossible organizations of terms that could carry the sequences of their subdivisions. Their difficulty partly arises in the complexity of the organic functions performed, in the non-interdependence of the species and lower divisions, and in the variations due to the difference in organisms performing similar functions. Their classifications, however, are not necessarily functional, hence progressive in magnitude or relations, but descriptive and definite. We see that classification by likeness of a particular form or function is quite different from analysis of functions; each mode having its own difficulties.

The tables in this work (which include the primary tables of Arthur Merton), having practically no predecessors, are necessarily tentative; the terminal words often range so close in meaning as to require sentence use to demark them, or have variation in dominant meaning under different authorities. The something over two thousand abstract nouns in these tables defining mentality are an extreme glossary of a single class. Of these over fourteen hundred are definitions of the faculties, of use to the student in describing the specifics, and measured by the sizes of the specifics. It does not seem as yet possible to differentiate the sizes of the subspecifics by
outward signs except as these are results of relative-sized actions, as instanced by self-esteem and egotism, the latter being one excessive expression of the former; or reputation and fame, the latter being an excessive purpose when compared with the desire for or fact of a reputation.

The faculties of the Intellect are by nature subject to greater specificness in subdivision analysis than are those of the Will, and these than those of the Affections.

The naturalist form of tables, of which those of products and effects are examples, are subject to considerable detail, as Fig. 160, and the table of tentative analysis of products, are examples, as distinct from the tentative analysis of concepts. The products are results of the concepts. Generally each product is the result of a dominant and several associated or responding concepts, even while these grouped organs might produce a great number of products of a similar class.

Thus in Fig. 287, a, display is analyzable by three words, and in the table of Fig. 284 by twelve words, but by the relations shown by Fig. 287, a, a great many instances of wilful display may be carried on; other faculties not shown as responding to Laudation may be interested and aids, and thus Laudation run all the way from a mere pretension to fanciful adornment, to the flourish and gaudiness of the circus. Thus size and condition are elements that enter into the concept, or mental action, as a matter of possible product. The concept may be large and the product small. Matters of duty, of circumstance, and of unconsciousness of power may hinder or becloud either the action of a group of faculties or the knowledge of the value of their efforts.

In Fig. 287, b, are noted the relations of Laudation through the specific praise. Its chief expression of admiration is through Language and Attention, to others or received from others; of approval, through Amity, Sociability and the religious Aspirations; of consent, through Liberty and the protection of Defense.

If we carry all of these relations to our analysis table of the faculties and specifics, the design looks complicated. Read the specific responses to praise: downward in the Will we find freedom, or choice, independence and protection; upward we read serenity, courtesy, candor, music, vocabulary, and observation. Very large or large praise must necessarily stimulate all of these specifics, and in proportion to their own power. In giving advice and an analysis of a man or woman of high quality and attainments, if the counselor desired to write out
an elaborate description of the influences and potential or actual characteristics and abilities revealed by the quantitative analysis of the specifics, and the effects of these relations, he could fill an octavo volume of several hundred pages.

It is not the expectation that students of the Merton Method will do this extreme analysis, but they can do it if they desire to. It is expected that very frequently some series of these items will be useful, in a modified way, because of particular incidents, necessities or requirements of judgment that may arise, and for the solution of which the client or the employer is willing to pay. Demonstrated ability is able to command compensation.

Some Vocational Relations of Laudation:

Laudation is vocational in many more ways than is ordinarily thought to be the fact. Seldom of exacting primary or dominant importance, it yet fills a mental field in both private and vocational success. It sometimes, when excessive, acts as a deterrent, as its influences plainly indicate; when minus it is also a hindrance.

Laudation acts closely with its facial neighbors, the Aspiration and Culture faculties. Amity, Reform and Sociability we have already treated. The Aspirations are the faculties of Faith, Love and Hope, the sources of the religious desires, or, when not engrossed in a particular religion, of optimistic and aspiring emotions in vocational and social ways. The critical treatment of the Aspirations must be deferred until a later study, but we include here, for clearness in reference, the locations of the faculties in Fig. 288, b, the specifics of Ambition being located by initials on a.

The expressions of fair to large Laudation are the vocational offset to the frequently found cynical or sarcastic attitude of co-workers, sometimes of bosses and superintendents, and, in many instances, of parents in the correction or government of their children. Common recognition of merited action is a normal desire and a source of enjoyment. A fairly large faculty is inclined to be genial and responsive in this respect; it is not a matter of forbearance but of encouragement and recognition. The employer who exercises a reasonable use of deserved compliments, of recognized praise and goodwill, has an advantage over one who is indifferent to these kinds of personal testimonial. The fellow workman who recognizes and appreciates the good work of another, finds greater congeniality and consideration in return.
Mutual accomplishment is becoming more and more important as a factor of enjoyable as well as of compensating work. The compounding of industries and productive power necessarily compounds the men who interdependently produce and who subdivide the supervision. The other fact of this condition is that the employment relations becoming wider and more dependent, the vocational relations become more impersonal.

For these reasons, the fact of Amity influence, of its friendship and companionship energies, is less potent, and the impersonal but recognizable energies of Laudation must replace in many conditions the old more neighborly mutuality. However much men may calculate and stress each other in the division of products and profits, in the end they will be compelled, in mental self-preservation, rationally, honestly and kindly to work to each other’s interests, to compensate in accord with productive capabilities and vocational aptitudes, and fully to render credit to each other wherever it is due. This is proved by the facts of greater co-operative production, of greater ease in accomplishment, of greater individual specific aptitudes, and finally by the gregariousness of work as well as of play and social relations.

Credit, mental recognition of mental values, is as just a claim as are the other claims of service. It is folderol to scoff at utopia, because utopia is, like other states of the world, or other organized existence, progressive, changing for the better the related functions of the parts of the organism, whether in the individual or the co-active bodies of many individuals.

Praise, emulation, the show of power and of possession, are normal acts and relations. The counselor will find, wherever he observes their deficiency, the presence of some kind of disorder. If the deficiency is reinforced adversely by the absence of the rational amounts of the Aspirations, the counselor will find still greater disorder, irregularity of habit and of attitude toward better ways and better conditions. This does not apply simply to the staff, who are ordinarily under the reign of good manners, but to the common conduct of the various vocational strata down to the bottom of the concern. In fact, gentlemen can be far more exacting without specific encroachment than can the uncultured, and the right understanding of employment relations, of mutually dependent good intentions, is as important a productive, vocational factor with the laborer as it is with the executive group. The artisans or mechanics or laborers are more numerous, generally
less self-disciplined, under more irksome physical conditions, often equally fine grained, and frequently learned or at least potentially capable. The expressed recognition of an ounce of merit in them may be as important to their well being and employment gratification as is the recognition of a ton of merit in the executive or members of his staff, or to the middle elements of supervision.

So, too, the constitutional dunce in one study or in all of his studies, may have as high an appreciation of what merits he possesses as can be found in the prize pupil. The faculties of formal learning are not the faculties that are sensitive to criticism or to cynical ridicule. One may grasp the one and not the other.

This illustrates the vocational fact that an individual who has large Laudation can be stimulated into uncommon activity by the right kind of compliment, by the recognition of merit and by favorable attention, as these are more productive of progress than is even constructive criticism.

The very nature of Laudation, then, proves that the various forms of compliment and recognition have a natural and valuable field in industrial as well as in social life; that many individuals in their home life reach stages of melancholia, of mental and physical depression, even of moroseness, through want of this form of encouragement. Few realize how fully and how frequently “the happy family” is based upon a reasonable recognition of transient merits. In industrial life, situations that drag along from one year’s end to the next in an endless round of routine are made doubly hard because those in power, or in places from which recognition could easily spring, do not perceive or express the value of that costless recognition.

Whatever our philosophy of life, when it dips into the vocational world it must take on a property of fitness for understanding and regarding the disposition, burden and desires of the other man. If praise or compliment or logic are factors in his doing well, the closer we can come to realizing the facts, to supplying the want, to according the mental fund he is in need of, the nearer we shall compel him to approach his maximum value to us and to himself in his vocational career.

The executive does not need to go into flattering expressions of approval, nor pretentious excess of compliment in order to give assurance and advisement.
Laudation's Relations to the Aspirations:

In many ways Laudation resembles in its effects the influences of the Aspirations, except that these are more intuitive and general than are those of Laudation. Thus Laudation operates as a tonic against depression from various causes; a properly administered dose of praise has saved many a case of despondence, failure, and vocational suicide. It tones up the mentality and that tones up the body. It is the origin of many friendly rivalries, and its impetus is quite different from that of aggression.

Thus it is seen that this faculty, like nearly all of the Will faculties, is personal, social and volitional; in its broad generalizations it has an effect upon one’s enjoyment of what is best in the world of science and of the arts, in the felicities of social life and welfare, in the realms of imaginative and creative efforts, and in the conduct of vocational relations.

Comparative Regions of Laudation:

Face a, Fig. 289, has a dominant Laudation. The features of this face are large, and the upper lip is long and broad, the fleshy body, thick in the region of Laudation, indicating a dominant sign in spite of the rest of the large faculties.

The cheek and mandible are uncommonly large, thus offsetting, in a good measure, the long forehead and the high nose. One can see at a glance that Form, Attention and Memory are prominent, and that if the nose were set back to the normal facial line at the brows, the region of Laudation would stand out with great prominence. Laudation would be extreme, as would several parts of the cheek that have not yet been studied.

The prominence of Laudation and of some regions of the cheek and nose would throw the rest of the analysis line considerably below the dominant. Many of the other faculties are quite evenly balanced, so that the combinations seen in the face are vocationally numerous, with the executive faculties predominant.

Face b rises to high lines at Attention, Language and imagination. It is only moderately high at Reason and in the perceptives. The executive part of the analysis line would fall low at faculties that are vital to an executive career, so that there are no indications of possibilities in executive directions.
The line spells a possible vocation at imaginative literature—episode and fancy—full of close sympathy and the more impersonal emotions.

Face c would have a high line in the retentive and reflective faculties, in the specific friendship faculties, and in part of the Aspirations; it has some fairly high executives, but as a whole is professional rather than commercial. The lower cheek regions lack dogmatic and dynamic powers.

In the absence of a much stronger bridge of the nose, the faculty of Construction is not strong enough to warrant attempts at promotive work.

The large Laudation in these three faces will make them "good mixers," while inclining them toward the tendencies described earlier in this lesson.

Fig. 290 has illustrations of various sized faculties of Laudation.

Face a has large Laudation outlined by the dotted line. This face will claim all of the recognition it can get; it demands recognition and endorsement; it has the knack of plausibility coupled with intense purpose to succeed in executive fields.

Compare face b with face a in the general contours and lengths of the forehead, nose and chin; note that the chin in face a drops a half inch lower than in face b. The region of Laudation is much smaller in face b; it will care much less either to praise or to be praised than would face a. Like face c, face b will care little
for showiness in so far as this faculty is concerned; it will care little whether it is emulated or not.

Face d lacks the shrewdness, the keen observation, and the executive force of the preceding faces; along with this lack it has only moderate Laudation, and this is chiefly of the negative or receptive kind. This negative Laudation is the boyish, good-natured love of praise, with but little social strategy in the use of praise or compliment with others.

Face f has large Laudation, but is somewhat like face d in the respect that it has no particular capability in its other faculties that can make strategic use of that characteristic or that can arouse a sense of merit that will draw much compliment from others.

Face e has little interest in or use for Laudation. Other purposes must furnish the total stimulant for the intense activity of this face.

In Fig 291 we have the faces of two very eminent men. In one of these faces Laudation is above the average of the specifics but is so supported by powerful Aspirations that these hold fairly well in the vocation. But two other faculties have dominant power, and these are marked in all of the efforts of this mentality.

In the other face Laudation is so nearly a dominant that it takes careful reading to choose between it and three or four other faculties. We have left a blank mental graphic table for the student to fill out with the analyses of these two faces down to the specifics of Laudation. After a few of these tables are filled, it will be well to return to them and reconsider them in the light of further experience. The Aspirations can be read as whole faculties; the unknown regions of the face can be taken into consideration simply as volumes, as these regions are, apparently, not dominants.

In Fig. 292 we have two faces with remarkably parallel lines of analysis in the Culture and Aspiration faculties. At tact, courtesy and serenity face b ranks proportionately the highest; at candor, kindness, trust, emulation and display face a has higher specifics. In the Science group all of Construction has advantages in face b; synthesis, judgment and intuition in face a. Here are the stresses of the vocation in face a: synthesis with analysis closely following, a powerful rhetoric and vocabulary, with Memory at the dominant line, high mental-focus and powerful calculation and separation. With Dignity, Stability, Industry, Economy, Defense and Destruction small or below the medium, all commercial and executive
vocations are thrown out of consideration. The constructive engineering and technical supervisory vocations, which might be possible under high **Construction** and **analysis**, are also out of the question.

A literary vocation or a general science and authorship vocation is indicated by the grouping of specifics in the angle-line face. In fact, this is a fair portrait of Mr. Herbert Spencer. The mentality is of great fineness in quality, has a remarkably harmonic Intellect, high Aspirations, but variable Will. The great defect of the Intellect, from the viewpoint of the vocation of a scientist, is the comparatively small faculty of **Construction** and the somewhat too small **analysis**, with a faculty of **Language**, of **Memory** and of **Number** that exceeded the vocational dominant of science, namely, **Reason**. These mental ratios did not reduce the ability to understand so much as they reduced the ability to create, the ability to realize the absence of functions in the very kind of work that was intended to unite and bridge the intervals of these kinds of acts. A larger **imagination** and **invention** would have compelled the recognition of disjointing fractures that could not be noted if this constructive ability were not present. The counselor must note this in the search for either scientific development or for executive power; he must note that as constructive vision is a sequence of constructive functions and processes in the mentality, so commercial and executive vision is a result of the same kinds of processes. The Aspirations, with **Laudation** and other executive powers, may desire to travel old roads in a new wagon, but cannot necessarily build the wagon nor pilot the way without the presence of sufficient constructive specifics. Or to use another pertinent illustration of these facts drawn from the massive work of Mr. Spencer and its relation to his analysis line:

If naturalism or physical science is capable of answering the prime questions concerning life and its organic laws, his lifetime devoted to synthetic study of the known laws of matter may have solved those questions. Not being capable, they remained unanswered by his synthetic philosophy of material laws or of physical science. Involved sentences and massive argumentative technic do not carry their themes beyond their inherent evidence. Mr. Spencer failed, because the powers of the material world are incapable of creating organic processes or living forms of action. This face, lacking the quantity of constructive **imagination**, of **invention**, and of **Inspiration**, could not vision the break between the inorganic material
FIG. 292 A

Rate the Marked and Unmarked Regions by Percentages.
world and those very organized processes of which he wrote so much. Tied down by the Galtonian theories of heredity and the Darwinian theories of creative physical environment—the external physical conditions creating the capability of internal changes—neither problems of mentality nor of vitality could be carried very far toward solution.

Face b, with Laudation and many other executive specifics close to the maximum line, has also high Aspirations, organizing vision and intensity in analysis of conditions, which all work toward an executive life among questions of welfare, religious and philanthropic work. There is much of the salesmanship tendencies in this face, but the analysis somewhat upsets that class of vocations. Language has too much competition among the faculties to allow authorship much leeway except in forms of correspondence and descriptive orders. Face b should be advised to take up organization work along either publicity lines or fraternal society lines.

In the faces of Fig. 293, the executive powers are very high and the dominant specific of the Intellect is observation with a strong essential support in object-form. Face b also touches the maximum line again at protection and courage. These specifics determine the vocational aptitude. They are not as clear in their restrictions of other vocations as we should like to see them, though fairly typical of a large number of hotel proprietors of the executive kind.

The friendship and Aspiration specifics run very high, as is usually the vocational fact in that vocation, especially where the host is a resident manager and in close touch with his patronage.

The dot-line variations from the angle-line analysis mark the variations most noticeable in the faces; minor variations have been neglected to avoid the confusion of close comparisons.

At Reason, deliberate judgment makes the back part of the septum in b somewhat larger, and raises the dot-line; at Amity and Reform there is a larger region in face a; at Dignity the lower end of the parenthesis in face b raises self-esteem ten per cent of the scale.

At display face a has an advantage of about six per cent; at hardihood face b rises fifteen per cent above a. Other vocational changes are found at Economy, Defense, Aversion, Destruction and Mobility. These differences in the Wealth and Commerce faculties make face b the more exacting, driving and hard-headed of the two hosts, but these heavy executive
reinforcements are softened and made companionable as well as accommodating by the Aspirations and the Culture group of faculties.

In the aggressive, progressive and executive hotel man the line of analysis runs quite evenly through the whole range of faculties, due to the important place the congenial, observing and retentive specifics hold in his business life, and the necessity that he exercise business sagacity as well. Laudation is found to hold fairly high in a great majority of men in this vocation, and is very generally supported by high social specifics. One uncommon departure from a first rate ratio is seen in the small Economy and self-esteem of face a.

The consistently noted specifics in the faces of actresses are display, object-form, vocabulary, imagination, tact, mutuality, and the faculty of Mobility; in actors, praise, object-form, display, vocabulary, imagination, synthesis, pride, self-esteem and Mobility.

It would be folly to assert that these specifics are constantly large or dominants in these professions of the dramatic arts, for there are many eminent men and women among actors and actresses who have one or more of them in medium percentages. Yet it is true of the vocation that the specif-
Laudation, and of Amity in less degree, are quite generally large, as proves true in the welfare and religious vocations, where the Aspirations are also highly rated and even more general, being more nearly the vocational dominant.

The efforts made to establish the constant dominant in any particular branch of the dramatic arts have given unsatisfactory results. These arts vary widely in their origin and modes of expression, in their general mimetic rather than directly creative trends, and in the necessity of concord with others or with the views of others in manner of interpretation; hence, the general prevalence of vocabulary, object-form, imagination, and Mobility. In not an instance within our memory does object-form fall as small as an average of the mentality, and it generally ranks second or third among the more constant specifics. Often Color specifics are equal to those of Form.

In many faces in these vocations the Aspirations run high, Amity and Sociability range close to vocational dominants. The executive faculties seldom hold powerful sway except in those that give flexibility and gracefulness in movement, notably Mobility and Industry.

In Fig. 294 there is illustrated the Laudation of two actresses, two celebrated dancers, and four successful actors. In all of these faces one or more specifics of Laudation range large; in all except one Amity is large or very large, that is, near or above the graphic analysis line 90. In all of these faces except a and h the Aspirations range quite high compared with the dominant, which may not be shown in the facial regions presented.

That the actor or actress should have a good physique, good health, at least a better than fair speaking voice, either an agreeable or "character" face, vividness, and comparative freedom from idiosyncrasies, at once puts upon him or her an all 'round test more extensive than that found in many of the other professions; and when there is added to these the mental specific requirements, one realizes why, of the many who have a try-out in amateur entertainment, so few reach professional recognition.

Laudation is most frequently found dominant in military men, in clergymen, salesmen, and theatrical promoters; nearly all pugilists have marked broad, full, and long regions of Laudation. Many members of the diplomatic corps have dominant Laudation in addition to large Sociability, Dignity, and Caution.
In those vocations where what one may call the commercial compliment is of frequent use, as the vocations of costumer, milliner, photographer, real estate salesman, or where the arts are somewhat personal in their vocational relationships, as instanced by the social secretary, dancing master, usher, steward, nurse, and child culturist, Laudation should be fairly large, especially the specifics praise and emulation.

The student will realize that Laudation in the Will responds in many aptitudes of ambition to the compliment and self-compliment, very much in the manner that Sociability in the Intellect responds to animation and culture.
MERTON COURSE

VOCATIONAL COUNSELING and
EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

BY

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LESSON TWENTY-ONE
The Regional Influence and Products of Integrity

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Regional Locations of Integrity Influences:

The regional locations of Integrity are just below the margin of the malar bone and back of the crest of the parenthesis of the mouth, as marked in the illustrations, a little higher than the location of the specific love of power of Dignity.

If we imagine a slightly downward curved line from the lower margin of the wings of the nose around the cheek and bending upward or tracing toward the external ear opening, the focuses of justice and honor of Integrity would fall along this line. The territory is larger than these focal surroundings, because, as seen in Fig. 295, it wedges downward to the margin of the oblique faculty below and almost to the bottom of the curve of Dignity. Thus the lower part of the region blends on the forward side with self-esteem and the upper part with love of power.
If the parenthesis crest shifts toward or away from the mouth and nose, it carries this region of Integrity with it, slightly toward the mouth and nose or away toward the ear.

In Fig. 295 this region is full, but carried well back because of the great fullness of the Aspirations. As Dignity is only moderately large in this face, its crest is near the margin of the parenthesis, and Integrity lies close to the margin. In later illustrations we shall see variations in the width of Dignity and Integrity.

Another specific of Integrity is termed equity. Equity lies along the margin of the mandible in front of Stability, generally just back of the valley around the chin, when that valley is well back. Often there is a double valley of the chin, sloping backward from the corner of the mouth, or blending with the interrupted parenthesis margin around the corner where serenity has its fullness.

In Fig. 296, in the face of the Hon. Woodbridge N. Ferris, teacher of commercial education, school superintendent, lawyer, bank president, president of Ferris Institute, and twice Governor of Michigan, we see a highly harmonized mentality, with Integrity a dominant, supported by very large Aspirations, the Culture group and the reflective faculties large. The parenthesis is wide and the crest not high in the regions of Dignity, thus Integrity gains its size by the fullness and width of the face from side to side. High utility, Stability, Defense, Language and Number are only slightly above the harmonic average of the face.

This mentality has an uncommonly wide range of vocational possibilities, the fairly strong Will regions giving
enough executive power to enforce action in an evenly balanced Intellect.

In Fig. 297, Lord Herbert Gladstone, first Governor General of the Union of South Africa, Integrity ranks near the dominant line. In this face, however, the constructive and reflective faculties, as shown by the end of the nose, are slightly higher in proportion to the smaller faculties, and Dignity rises to the level of Integrity. The equity of Integrity is the largest of its specifics, just as firmness is the smallest of the specifics of Stability. The great width of the forehead and the large signs in the end of the nose modify the variable high line of the Will analysis.

The General Nature of Integrity:

Concretely described, the faculty of Integrity is that part of the Will that generates what is, in general, called conscience; resistingly, Integrity is that purpose in the Will of the individual that urges him to shun bad intention, injustice and crime.

The essence and the possession of Integrity is right action; doing, agreeing to, promising, and demanding, as nearly as one can estimate, that which the consensus of good opinion deems to be just.

The faculty of Integrity has a very powerful bearing upon the personal, social and vocational life of the individual. To what extent the conduct of the individual is influenced, and the degree to which Integrity exerts general power in the intentions and purposes of an adult is not as fully determinable under our social and civil laws as would be the case were the
faculty free to exercise its influence without the presence of civil laws. **Caution** in the latter case, and **pride** in the former, are faculties that stand as warnings against the abuse of civil and social laws and conventions, either kind of punishment having a restraining effect upon the great majority of people independent of the restraint of the faculty itself. These various influences must be considered in their bearing upon a small faculty of **Integrity**, and the fact that, as restrictive forces, they have little cause for power, or are not in question with one who has, from large **Integrity**, no desire to infringe the conventions and concepts of good conduct or facts of probity.

**Punishment and Integrity Antithesis:**

It is the function of the state, by its legislation, to establish legal bases of integrity; to support the commercial basis of integrity by statutory definitions of rights. Most of these definitions of legislation are negative in character, defining punishments and penalties for that which is not honest. But so varied are human relations and the rights of private contract, that laws can hardly cover the contingencies of right and wrong or the concepts of justice. Many states and peoples thus resort to what is now distinguished as "common law" practice, or the judgment of the courts and populace.

Some actions that are right in some states are not right in others; some actions are held to be accountable in one country that are not so held in others.

On the other hand, few people are familiar with the statute laws on the subject of integrity. The great mass of the people have to rely upon common knowledge of right and wrong, knowledge derived from moral, or ethical, or religious teaching, or upon the facts of reported experience of their social and industrial relations.

Hence, **Integrity** varies in its basis of measurement, in its sensibility to right and wrong, rectitude, probity, conduct and resistance. It is necessary that the individual get from social experience the great mass of his honest purposes concerning his attitude toward fellow man, fellow servant, fellow employer, employer rights, employee rights, companionship and dependents. The individual at once finds that **Integrity** is not individual, but is mutual, that it is in action an interrelation of individuals, is mental agreement on an equation. In this equation enters the consensus of opinion of the past, personal
contracts, respect, expediency, strife, conquest, hazard, censure, resistance, and the ethics of mass actions, either expressed in common opinions, common law, or legal rights. As examples, eight per cent interest is right in some states, but not more than six in others; divorce is right under widely varying conditions in different states; betting on races is right in some states, not in others, right in some forms or places, but not in others; crimes are variously punished in different states, and even in different judicial departments or districts; employment, wage rates, profits, collection of debts, professional service, religious rights, and hosts of other matters, have endless right or wrong degrees that demark what may be purposes or measures of integrity.

But public statutes cannot be written with the characteristics of the mass of equations that enter into the great majority of acts of demeanor, the intentions of evasion if possible, or the ethics of good conduct. The statute books of many states are now loaded with anti-criminal legislation, often carrying the distinction of crimes and punishments to a point where the saying that ignorance of the law excuses no one, might as truthfully read that everyone is ignorant of some of the law, and that crime is more and more determined by evident intent than by incidental act. The consciousness of an ugly injury to another, the facts of common hearsay and report, and the results of personal defense, have a more potent restraint than has an actual knowledge of the laws for punishment of crimes; but the existence of the law or of the common law courts enforces the common knowledge.

General Nature of Integrity Measurements:

The counselor will often have occasion to notice the fact that, as an executive ability, as having dynamic purpose, this faculty is much concerned with definite quantities of actions and relations, perhaps more so than any other Will faculty. It has more to do with the enforcement of conscious-balanced actions in the relations of individuals with each other than has any other Will faculty. It is in the fact of its being the most formal of this Co-active group of faculties that this is necessarily so. The very nature of Integrity implies a social or reciprocal relation in some form of justice. Its influence, like that of its associates, Industry and Liberty, is a condition existing between persons; none of these can be strictly personal actions. A man may cheat himself, but it must be because of
some one else or in favor of some other person. Just as Liberty is a question of mutual relations or mutual non-relations, and as Industry is a series of interactions for some purpose of attainment, and when these are large make its attainment easier, so Integrity is a question of right action or right thinking of one man toward another, a part of the co-actions of men in social states. Its products are generally, whether purposes or materials or effort, more easily measured than are those of Dignity, Liberty or Caution.

These quantity facts in the nature of Integrity make its relations to the judgment of the Intellect and to the high ethical faculties close and interdependent. The foundations of Integrity are found to be the customs and conventions of business and of society. If business or society or industry is governed by reason or ethics or religion, such rules are quite certain to be the accepted criteria of Integrity. What is right to one people may not be to another.

Location of the Specific Justice:

The subfaculty, or specific, justice, the most formal part of Integrity, is located just back of love of power in the upper region of Integrity, as shown by the focus indication Ju. in the initial figure and in a of Fig. 299. It fulls out the region close to the parenthesis of the
mouth, though it is outward or backward from the crest.

When there is no clear demarkation of the crest, the margin of the specific region can be judged as about three-eighths of an inch from the inner line of the parenthesis, the focus being a little more than half an inch from the line. This distance varies with the size of the facial regions and the high point is variable over the territory; but the focus is not difficult to locate. The oblique views of the face, as shown in b and c of Fig. 299, show more than the upper part of the justice specific. In a and b the region is probably 90 per cent of the dominant; in c it is apparently not more than 50 per cent; if observation, scrutiny or Construction is the dominant.

Large Justice:

Large justice, as we commonly rate it in our conduct with our fellow man, is that moderate and careful expression sustained by the common consent and common laws. The proverbs concerning its nature and virtues are many, and, from casual attention, explicit. Close thinking, however, with these as with many other precepts, reveals a wide range of possibilities and differences of opinion when particular cases are in mind. We at once see that there is needed some form of standard principles or measurements. The struggle to gain these began a long time ago: About 1500 B.C. Moses said, "Thou shalt love Jehovah with all thy heart, and thy neighbor as thyself"; Hestopades, 1000 B.C., "To those of a noble disposition, the earth itself is but one family"; Kong Fu Tze, 551 B.C., "Reciprocity is the one rule of practice in life; what you wish done to yourself, that do to others"; Jesus of Nazareth, 31 A.D., "All things therefore whatsoever ye would that men should do unto you even so do ye also unto them, for this is the law and the prophets"; Cicero, 30 B.C., "Justice devotes itself wholly to the good of others"; Rabbi Simon, 150 B.C., "The moral condition of the world depends upon three things—Truth, Justice, and Peace."

The fulfillment of these precepts depends upon the quality of judgment exercised in carrying them out. Justice, therefore, as the formal part of Integrity, is dependent upon the individual intelligence and choice of action, and upon the power of Integrity to enforce upon the rest of the mentality that course of action. The counselor and the employment manager will need to draw deductions concerning the power of these specifics and also concerning the probable knowledge of what is
Integrity

right that is held by the individual.

The very nature of Integrity requires that to act honorably and justly a man may need to know what constitutes honesty, justice, the sense of truth; that is, he must possess the information or knowledge, as well as the intentions, of right purposes.

None the less, a man may know what is right or wrong and not desire to practice what is right. Sometimes, fairly large Integrity is overcome by a series of powerful opposing faculties—Economy, Defense, Aversion, Destruction, Appetite, and egotistic phases of Laudation; especially is this so when the high Intellect regions and the Aspirations are but small or medium in power.

The counselor and employment manager cannot well take is as granted that the knowledge exists, that it is common material in the minds of those with whom he is dealing. He need not question them concerning their opinion, but it is his privilege to assert the conditions or the reciprocal relations under which the measurable equities and right actions can exist.

As earlier stated, in the balance of the other Will faculties, especially Economy and Liberty, against justice and other specifics of Integrity, the counselor or the executive naturally must keep in mind the influence of the Aspirations and the faculty of Reason upon conduct, either his own or the employee’s, and be alert to a fair view of the value of effort, of the sources of accomplishment, of what people should be satisfied to work for, live upon, save from, and endure, in order to succeed. He must evidence ability to
determine and establish or prove the factor of justice. In proportion to the degree that these seem well done he will establish confidence and a complete working personnel. The amount of good-will he controls will depend much upon the consensus of his right action, even if that consensus is a mistaken one. Our purpose at this moment is to call attention to the fact that **Integrity** is both an idea and a purpose; the idea may be bad and the purpose good, or the reverse. It is not simply a matter of disposition, as is **Dignity** or **Stability**; it is a way of acting, and so has also a substitute in the matter of disposition, namely, **Amity**, **Reform**, the Aspirations, and sometimes **Caution** and **judgment**.

These make the equation of honest demeanor, the intention to do or not to do right, more complex than the single equations of any other faculty. The possession of small **Reform**, and Aspirations, with small **Integrity**, is a pretty conclusive indication of a dishonest liability. But the presence of one or the other set large, at once removes the liability, except in the question of what is right or wrong.

Our statement to a client that his **Integrity** was very small and had never troubled him much, aroused some anger until a counter statement was made that his ethics, his **Reform**, **Faith**, **Love**, **Hope** and **Reason** were so large that his **Integrity** was never challenged, brought to him the realization that it is a task for some men to live reasonably honest lives, but that he had escaped that stress of disposition.

These quantitative facts in the natural activities of **Integrity** make it possible that a man with a barely moderate faculty, but having large **Amity**, **Reform** and Aspirations, may desire honesty and uprightness as fully as would a man with these only moderate but with large **Integrity**.

**The Specific Honor:**

The specific **honor** is located about half an inch backward from **justice**, a little over an inch from the parenthesis line; and, as in the region of **justice**, it varies in distance somewhat in accordance with the size of the face in these regions. Its size is also measured by the fullness of the region. So many other faculties surround this region of **Integrity**, which possess their own powers of expression both in surface requirements and in fullness, that these specifics must yield to the others the dominance of surface possession if they require that dominance. Hence, **justice** and **honor** are read by fullness.
The nature of the specific honor has much of the qualities of dependence upon the Intellect and the Aspirations in matters of purpose and intention. But it is a more static specific, more closely related to personal action than is justice, and is, perhaps, described as being less industrial or commercial, and more the origin of social conduct.

The sense of honor is the intention to make even extreme sacrifices in order to fulfill what the individual considers good conduct and upright methods, though there may be no legal or formal means of exacting the action or of expressing disapproval. It is the disposition to do the right thing whether or not others know, approve, or condemn the action; to keep one's promises, expressed or implied, to act with invariable good intention.

The tentative analysis carries one into problems of observance, into matters of solicitude, toleration, right habits, personal welfare in social affairs, acknowledgement of others' rights and privileges, and the many expressions of mutuality that are not so keenly subject to material or energy effort as are the activities of justice, or the aroused disposition of stated and implied obligation.

But honor has its phases in what is not "written in the bond," as certainly as justice has its implied circumstances arising from custom, good-will and the polities of supposed understanding.

The counselor can read these in the same manner and with the same estimation of success or failure in life's conquests, as he can normally read other essentials of mentality. When the indexes are minus, he must expect minus conduct, unless highly substituted for, as in the specific of justice.

Medium and Small Honor:

When not well supported by the ethical and religious faculties, small or even medium sized honor is very apt to lead to evasiveness and various forms of shirking, not merely to the little misrepresentations but often to the more serious turpitudes; to conscious and intentional neglect, the hazard of consequences to others, laziness and indifference in work, the easy going forgetfulness, and other lapses of implied and common good conduct.

Nor is it of interest alone to the employer that the rate of work and product should be as agreed and the carefulness of effort equal to the need of the task; since the demerits are shared by other employees, the cycle of disadvantage creeps...
around much more swiftly than is usually reckoned to be the case.

The sabotage of one shop falls upon the honest man in another shop; the indifferent employee or employer pays for another's indifferent work; and so the penalty falls, as it was said in ancient days of the rain, alike upon the just and the unjust.

But the effect upon the consciously malacting individual is also apparent, because there is an absence of the sense of freedom and rectitude that should make even stressful effort enjoyable. From works manager and superintendent through the ranks to the gang boss, there is a conscious and sensible recognition of the differences of ease and of pleasure in each man's work, attributed to what they usually call "interest" or "pride in his work," which can really be traced either to the attitude of honesty in the man's purposes, or to the other source—natural aptitude, vocational fitness. Of course, the lower the order of man (not the lower the kind of work) the less likely is the condition of conscious obligation to be a criterion in his mentality; but the dishonesty of small Integrity is as apt to appear in the man of ability as it is in the less capable man. The little more fancifully, or at least elegantly, expressed disloyalty in the higher ranks is none the less remiss.

The Specific Equity:

Equity is a stimulant toward and an added capability in judging the value of material property, substances, and productive environment, of "sizing up" real property, independent of its statistical or calculated values. It adds to the general judgment an opinion of the somewhat indefinite masses of favorable or unfavorable qualities in properties when these are under consideration in matters of dispute, probate, administration, or purchase. In any of these vocational bearings the counselor should be alert to the subject's possession of this subfaculty.

One would expect, at first thought, that the specific equity would be a part of the faculty of Economy. Economy has the sense of propriety, the intention toward ownership, and it is in essence accumulative of property and constantly operative for gain; it is so intensely personal that the establishment of equalities in rights or values hardly concerns its forces.

Equity, then, as defined here, is necessarily and in its pur-
poses an energy of Integrity, dealing with values of the products and uses of every form of effort.

The counselor will note this and save himself from confusing conditions or from misunderstandings—as instanced by the man with excessive Economy making worthless purchases, useless sales, poor bargains, etc.

A fair or larger equity aids in the judgment of values. Without stressful effort it weighs productive powers and probable results. It sees that the prime factors of industry are good investment, saving in utility information, and the wide use of opportunity.

In Fig. 302 face a is an exceedingly long face, in which justice, honor and equity are closely alike in size, equity slightly the largest. In face b justice and honor are slightly larger than equity, but the whole faculty of Integrity in both faces is nearly alike in its ratios to the whole face. These faces are of two men highly credited in the world of business affairs as adjusters of difficult problems in corporation finances and in the elaboration of the technic of involved commercial relations.

When we turn our attention to face c we find all three specifics very close to the dominant, in spite of the powerful nose, where the faculties of Reason, Inspiration and Construction, and the specific mental-focus, are all powerful. This face is shorter and broader than a and b, and several of the Will faculties not yet studied run closer to the top line of analysis. As Integrity is seen to be equal to any of the Will faculties in face c, it is necessarily from five to eight per cent higher than in a and b, though these are powerful enough, especially as they are supported by strong Aspirations.

In face d a remarkable contrast exists in the ratios of these specifics. Some faculties of this face are high, notably Language, Number, Form, Memory, synthesis, and Caution in the Will. This is a likeness of a former Congressman, with—well, say discretion. The signs of Integrity speak for themselves, also speak historically. The sag in the regions considered more than flattens their normal oval. The Aspirations and ethical faculties fall somewhat below the average of the face and cannot redeem the low regions. Equity is the largest of the three Integrity subfaculties.

The Vocational Relations of Integrity:

The student of vocational counseling and of employment management—management of personnel, as it is often called—
may reasonably think that the relations of Integrity in practical life are very well known and matters of common conduct. Nevertheless, nearly every instance, except gross infractions of civil relations, has in it a problem to which the theorems of the great teachers do not furnish an answer. Briefly, this may be due to the great amount of chance and change and complexity in the relations of society and its industries, in part to the unexpressed or implied factors in agreements, and to the fact that men differ in understanding the actions implied or the tacit promises made.

If Integrity is the will to perform what one thinks he is under agreement to do or has found to be in accord with the best rules of life, then the concept of Integrity in industrial relations can rise only to the individual's understanding of those agreements and rules; this idea and purpose is subject to many conditions.

The employer is interested in the fact of value received in service; the employee is interested in the value given; each seeks compensation for the value given. In nearly all positions there is some form of criterion as to the values and rates paid. These rates are subject to mutual agreement or some standard or common practice, far too elaborate in general to be considered here.

We are interested, however, in the analysis of mentality that will determine the probability of any man's understanding the obligation assumed, his willingness to honor his specific or implied contract, and his equity and responsibility in carrying these out. A man with a high specific of justice may not have the mental or physical capability needed to fill his contract, and so furnish his employer or employee with a rational basis of forbearance. He may have a small or general-
ized Reason and poor judgment, and so think he fills his contract when he has not or is not doing so, and thus need to be set right in the standards or agreed conditions of employment. He may not know what the justice or equivalence of his work is, and so under- or over-estimate his compensation, and in fairness, should be told the truth, or given a true basis upon which to estimate his values, given or received.

The legal basis of Integrity, arising from the specific justice, is defined closely by the civil laws, and in industrial or employment relations may be summed up as filling one's written or stated contracts. On these grounds the faculty has but to enforce the stated conditions and be willing to endure the hardship of misjudgment. Its concept of obligation found in a voluntary or free contract is usually held by a man of fair or large Integrity.

The commercial basis rests in those purposes that one may call the good practice of business relations, fair dealings, or good-will and reputation. These expressions of honor are less measurable, but have an enormous bearing upon the increment to success in business and in the professions, particularly those where the products or the service are difficult to value by one who is not expert in them, and where reputation derived from the experience of one's patronage is the chief criterion of fair dealings or high service.

The subfaculty equity, or property valuations, also includes the value of observable opportunities, the value of processes of production, and the estimation of possibilities in these directions. Many men who are not economical themselves or directly interested in economies, have this distinctive ability. We have known wasteful, spendthrift salesmen who possess this subfaculty large, and who were rated as “uncanny” in their offhand rating of properties, opportunities, or conditions. On the other hand, we have been interested in several political economists and economic statisticians who were propriety blind to the real things—like the person who described the “beautiful clustered blossoms of the Boston ivy,” and left the poor wistaria hanging unnamed—the theory was able, but the substance unrecognized.

Often accountability is governed by education, or by standards of local experience; sometimes by necessity, rewards and by fear of punishment. The amount of Caution does not act as a control, because it is often the support of cupidity, cunning, craftiness, thievery, sabotage, and trickery. Moderately large, but not excessive or minus extremes of
Dignity, Industry and Liberty support Integrity directly, and are restraining influences. These faculties, when small, or even medium, with small Integrity, are the absentee signs by which most people pass judgment on an individual as being dishonest or untrustworthy, instead of by the absent signs of fair Integrity. The experienced criminal in dishonesty learns to imitate the confidence and boldness of an honest man, or often has gained these by having “covered his tracks.”

In work, shirking men who are otherwise reasonably honest, sometimes excuse themselves to themselves by the excuse that “others do it” and get treated just as well as those who do their part well. The counselor is thus at a severe test in working out the equations of these off balance mental influences.

Some Analysis Equations of Integrity:

In Fig. 304, face a, we have an illustration of the fact of small Integrity specifics, with a delicate series of indexes of the Will in nearly all of its specifics. It was the solutions of such puzzles as this that worried us for nearly ten years, that is, the reconciliation of specifics in men of irreproachable honesty and of high intentions, with small indexes of Integrity. Other instances were those of men with large Reason but having poor judgment of common values, and similar cases of difficult interpretation of specifics. A careful study of supporting faculties and the laws of mentality, as of chords, responses, and polarities, finally led to constant solutions, that is, to invariable indexes.

In this face a the Aspirations and ethical faculties are all extremely large, as seen in the powerful upper forehead and upper lip, and in the broad end of the nose. No amount of influence could draw this man from the line of probity and honesty, as defined by his Intellect.

Give this face a broad low forehead, short from the ear forward, and, the restraint gone, it would be difficult for him to avoid infraction of the civil code. As the faculties now range, the opposite is true.

A man of low Integrity and Aspirations cannot be recommended for positions where the temptation to substitute poor materials for good ones is great, or where the opportunities for dishonorable dealings are frequent, and yet in the ordinary run of common vocations he may go through untempted.

In face b the Aspirations are moderate, the upper lip not
being full in their regions; **Dignity** and **Caution** are only moderate; these restraining faculties, therefore, are not powerful. But **Justice** and **Honor** and the faculty of **Stability** are large and controlling; no amount of opportunity or of need would tempt this combination. Every faculty of ideal trustworthiness is in a fair volume of power, and the two dominating Will faculties are integrity yielding powers.

Here again we see the fact that the origin of the greater number of civil crimes is in the low Will faculties, and to prevent them requires the high Will or high **Intelect** faculties in a restraining amount of power, requires that the individual shall have grown away from the condition under which outward punishment was the chief preventive of serious crime and misdemeanor.

In Fig. 305 face **a**, we see a highly organized, well balanced face, mental in temperament, as shown by the long forehead and quite slender mandible. It would be quite difficult to think of this mentality condoning dishonesty.

Another illustration of a combination of highly even **Intelect** and Will faculties is seen in face **b**. This face has in it the extreme indexes of unselfishness, trustworthi-
INESS, and temperate self-control, with small indexes of selfishness. He is a tradesman youth known throughout the lower Connecticut valley as "The Angel," because of his face and character.

Large Integrity and reasonable Culture; medium Integrity and fairly large Aspirations; medium Integrity and large or fair Dignity, Industry and Liberty and Reason; small Integrity with large Amity, Reform and Aspirations, are safe indexes. To these may be added a well rounded mentality of fine quality, in many combinations that will suggest themselves to the counselor, as found in the normal life of to-day. Mere fine quality and elaborate education, however, are not safe indexes; many criminals and many dishonest people have these.

Unscrupulous business methods usually require sagacity and caution, along with graduated experience, as in substitution, false bargaining, misrepresentation, evasion, services laches, or other forms of violation of ethics, commercial honor, or implied duty or function.

Small Integrity with medium Dignity and Industry and medium or small Aspirations and Reform, is a dangerous combination. A low flat head with a heavy lower face and a medium Integrity,
Integrity

is a dangerous combination in a position capable of being "worked," or where there is a chance for legal but unscrupulous action. Small Aspirations, medium Integrity, and an otherwise disorderly face, as shown in Fig. 240, is a dangerous face.

Disorderly Faces and Crime:

In Fig. 306 are shown two disorderly faces. Face a is an accomplished forger of checks, and, strange to say, able to pass them on national banks. The face does not indicate the presence of great shrewdness, and perhaps a large part of his game is the ability to palm himself off as an ugly innocent. The face is a careful likeness, included here as an extreme, though the loose mouth, long unreasoning nose, and lack of orderly Will are fairly constant features in the forger, pickpocket, or small calibre criminal. Observation, vigilance, hardihood, and large perceptions are the accomplishment specifics. The high backhead, however, is an unusual regional development in these crimes. This man claimed to be a "wonderful orthopedic surgeon," usually "on a vacation" (partly from jail).

Face b is that of a young man with vicious misdemeanors to his credit. This face shows secretiveness and vigilance, with Economy large enough to make petty thievery an attraction. The Caution, however, inclines him to work alone, to "keep mum" and play innocent. The hollow signs of Dignity, the bad mouth, the thin upper lip, and the small Stability, make caution signals against trustworthiness. Yet, if he must work, and live an honest life, what shall one do with him?

In future society, which will know in advance the liability toward this development, there will doubtless be established a process of careful inculcation of worth-while principles and the stimulation of actions intended to strengthen the opposite Will faculties, and a certainty of the absence to profit by criminal acts. The probability of crime rests in the nature of the mentality; its incentive rests in the opportunity to enjoy its fruits.

Organization and its Contrasts:

If the student compares face c of Fig. 306 with face a of the same figure, he will notice the remarkable effects of the dynamic and formal powers of high quality upon the face, and the effect of the physiological and mental centers of the brain upon the measures of the face and head.
Integrity

Faces a and c are approximately the same height. The mentality and vocation of face a has been described briefly. Face c is that of an executive and administrative attorney, justly celebrated for his abilities and his exacting honesty. Some general measures of both faces are given from the auditory opening.

These measures are intended to suggest being on guard against deceptions in size in malformed and freak-like faces or in faces widely out of the moderate shapes. The measurements are not given to suggest the use of measuring instruments. The reader must depend upon his mental equations of perception, because the values of gross diameters depend altogether upon their relations to the whole, or to all, and not upon one or two others. The total size is of so little consequence when compared with the quality differences, that only extremes of size are indicative of various probabilities when combined with quality, as in the cases of men like Washington, Humboldt, Agassiz, and Michelangelo, or some other great men with either large or small heads and faces. In this Fig. 306, the faces a, c and d are approximately the same length. The head of a at the tophead seems taller than that of c; it is 19 mm. shorter, namely, 125 mm., or about four and seven-eighths inches high. The forehead distance is 117 mm. compared with 148 mm.; the chin distance is 95, compared with 156 mm.; the top backhead is 120 compared with 136 mm.; the low backhead is the only larger distance, 94 compared with 86 mm.

In d we have the same length face, wide and orderly, with very large Integrity and moderate Dignity. The forehead is wider than in any of the other faces. With high quality, the dominant indexes are those of a powerful commercial manager, too hard in some regions to come in close touch with the lower ranges of personnel, but highly fitted for close bulk negotiations and for direction in directors' meetings, where the exertion of powerful Will specifics is carried on with the greatest amicability and precision. These faces c and d are good subjects for the student to practice on, and we therefore include a blank analysis table for a double line comparative chart. Or one of these faces may be compared by analysis with a or b. The difference in the values of the two analysis graphs cannot be rated on any chart, but the ratios of each to itself, like all quantities, can be made in percentages.
On the Verges of Integrity:

The qualities of conduct that form the verges of honesty and dishonesty, that make up the transit space from strict honor to evasion of right just above the criminal laws, are difficult to describe in general and often difficult to equate in mental or vocational analysis. Excessive specifics of pride, self-esteem and display may lead to selfishness in personal conduct, to shirking one's share in the hundreds of minor matters that in their fulfillment make the gentleman and the worthwhile friend. Other combinations lead to kinds of snobbishness, caddishness, and unwillingness to do one's share. These are lacks of Integrity just as fully as is the purloining of pocket money.

Braggart "stretching the truth" is another common form of small Integrity conduct.

The vocational infractions of honor and justice seen in sabotage of time or materials, in injurious adulterations or products, in substitution to cheapen or injure values, are decided driftings away from the confines of commercial Integrity. One can hardly expect employees to cling to the strict standards of honesty when their employers infringe the very code to which they demand adherence. The rule of conduct, "Every man for himself and the devil take the hindmost," soon turns the parade into a circuit where the distinctions of heads and tails of the procession get mixed in mutual losses.

The range of dishonesty from shiftiness to craftiness lies in those verges not easy to demark in the character, that is, better than the criminal and lower than the really honest or generally good man; it is from below the disposition that marks a carefully considered reciprocity, down to the disposition that needs some form of outside corrective force or some sensible punishment to prevent its going lower.

The analysis graphic line that defines these dispositions very naturally cannot go to extremes in wide ranges of those faculties from which the dispositions arise. Usually the departure from fair sizes is in two or three local regions along the line of specifics, some of them large and some of them small, and thus not acting as counter influences.

Thus laziness is apt to result if Industry, Economy and Defense are small or below medium, and not stimulated by large Reform or Aspirations.

Stinginess, penuriousness, or phobia impecuniosis, one might call it, the fear of poverty that haunts the miser, may grow out of extreme Economy, large self-esteem, and mod-
erate Amity and Sociability. Thus the vices of neglect are generally small ones, though not always so, but bad ones, because of their incessant operation, and sometimes so because of their mean plausibility.

Regions of Integrity Hazards:

Many vocations are under much greater stress of Integrity than are the great majority. Of the disposition toward productive misrepresentation we have just treated suggestively. The counselor needs to know more particularly, perhaps, than those of any other profession, the positions or vocations where medium or small honor and justice are open to the greatest temptations, especially in counseling older youths who are not or who have not in experience or in circumstances become immune to temptation. It is unjust in itself to place young people who have only a casual idea of honesty or defense against the pressure of temptation, or the influence of surroundings, in positions where there are repeated and intense attractions toward waywardness in the milder forms, or theft or falsehood in the more serious actions.

Conscientiousness, as it is often called, is not a purpose of a given size or power, but variable as are other.
powers of mentality; it is a mixture of ideas, information, wilfulness and emotion, in which there are powerful the energies of several strong specifics, particularly judgment, candor, good-will, pride against bad reputation, firmness, justice and honor, or possibly the energies of fear growing out of the vigilance of Caution. Most of these regions are shown outlined in Fig. 307, face a. Against these there may be at work in the mentality an opposing series of specifics. These regions are shown in face b. Some are incidental as natural desires or incentives, and others, when powerful or excessive, are very compelling specifics. They consist of imagination, love of power, self-esteem carried to egotism, display, emulation, hardihood, propriety, selfishness, courage, misled contempt, vengeance, pampered or neglected appetites, and misguided passions. These may be specifically concerned against the impulses of honesty and its kinds of good conduct. If all are in equal sizes, the majority will be against Integrity.

If the majority of power, as strength, within the mentality, and the consciousness of right around the mentality, rests in the trustworthy or “conscientious” specifics, they are apt to be invulnerable. If the majority of power within the mentality and in its environment partakes too much of the specifics described in the second series, there is danger of yielding to the “lower” impulses and ideas.

It is quite natural that parents should not have many qualms about the honesty and good character of their own children, often leaving the matter of protective ideas, ideals and intentions to the ordinary course of school, church, or gossip instruction.

Against these “lower” impulses there is ordinarily pitted the impulses of the specifics that demand or support rectitude and honesty in conduct, the danger of detection that is known by common report, the fear of disgrace if detected, and of punishment if convicted.

The problem of the counselor is that of mass weighing these forces pro and con in the matter of Integrity, and where there appears to be liability, to ward it off, by suggesting the happiness and success that should come from good conduct, the avoidance of the presence of contamination from low associates, the study of ethics, of gentility, the examples of mankind who have withstood the importunities that might lead to dishonor, and, finally, to select as nearly as possible the right vocation in which there rests the lesser lure to the less stable and guarded mentality.
Some of these lures and incentives we shall treat, even briefly, because they are suggestive to the counselor and employment manager, possibly in addition to those with which he is already acquainted, and further, because some of them are often of an unsuspected nature.

These consist essentially of three categories: the desires and ambitions of the individual; the desires of another person who is to benefit from the action; and the suggestive influence of inanimate things themselves as objects of possession or of accomplishment. These various forms of incentives or lures or compulsions we may consider in concrete illustrations of what experience has shown us to be the vocations of greatest liability, though not necessarily where there is the greatest hazard.

**Vocations With Integrity Hazards:**

We have treated the specifics of a number of vocations in which the **Integrity** hazard is considerable, both to employer and employee, but several of these are similar to the following:

The seedsman and nurseryman is subject to the temptations to substitute, to neglect the question of maturity under adverse seasonal conditions, or due protection against devitalizing effects of insect and climatic influences. The long period between buying and "proving," the difficulty of keeping the stock on hand that new demands create, the demand for advertised specialties prepared for by competitors several years in advance but sometimes of doubtful merit, are intensive incentives to misrepresentation, substitution or denunciation.

The purchasing agent has to withstand the frequent tender of "side arms" from the urgent salesman and dealer, notably in those industries where the quality of the materials is not easily determined. These qualities are frequently found in dyes, chemicals, fertilizers, paints, and many food stuffs. The plan of the unscrupulous dealer is often carried out by an insidious method or means, implying no dishonesty on the part of the purchasing agent or the dyer or other buyer, but which would not be inviting to the principal. The various forms of "double vision" that are frequently induced by special agents and representatives of some native and foreign houses are not corrected by the best oculists.

The legislator and diplomat are frequently importuned to
the margin of broken friendship by people who have "causes" of both terranean and subterranean nature, to resist which requires large Integrity and various species of second-sight; the absence of large abilities in these directions is sometimes fatal to a political career.

The dentist, as shown in Fig. 308, face a, requires large Integrity, not from the viewpoint of malpractice on his part, but in order to resist doing what his patient wishes done that good judgment and professional skillfulness would not sanction. The dentist's specifics are skillfulness, invention, object-form, individuality, observation, scrutiny, esthetics, with dexterity, and with the Aspirations or the friendship faculties large.

The historian requires vocabulary, rhetoric, all of the Reason specifics, calculation, utility, Memory, justice, honor, and Reform, in the order stated. His justice and honor are often challenged by the very sentiments and aspirations he desires to commend or by the prejudices that may arise from long and tedious consideration of the characters, causes and results he intends to record. Such honest prejudices spring up in the common or more transient incidents and records of the day, and many business as well as other anthologies seem queer to their contemporaries.
The weighmaster is often in a position where there is brought to bear great influence to have him "shift his scale-beam" heavy or light as occasion prompts, or to find "more molasses in the sugar" than was bargained for.

The weigher and weighmaster must have large calculation, observation, Integrity, firmness, vigilance, secrecy, and, where heavy weights are used, large Mobility and general strength. In some positions a considerable amount of management ability is required, and as a public weigher he may need to have the ability quickly to organize or reorganize his plans and forces. A fair amount of Construction is necessary where the work is done under adverse conditions. These specifics are shown in Fig. 308, face b.

In a profound way the great vocations and industries have few occupations where Integrity is not an intensive power, and, in the estimation of men of affairs, where it does not hold high rank among the vocational requirements. The honor of filling one's place in the world of affairs, whether it is small or great, is in itself an optimistic and success producing mental force, just as working in the right vocation is a fundamental precaution against the need of mental hygiene. The Art of Doing Well is usually strongly supported by Integrity, and right placement is a power source of the Art of Living Well.

Differential Analyses:

In Fig. 309, face a is that of a successful savings bank president who is also interested seriously in civic and industrial affairs. The angle-line analysis indicates the order of prominence of the specifics in the vocation. To this line face a runs very closely; the order of its dominance is synthesis, calculation, with justice, honor, equity, propriety, firmness and perseverance very nearly even, followed by secrecy, facts, system, analysis, and several of the Aspiration subfaculties. Some other executive vocations, certainly, could be given this mentality, but the minus analysis would shut out most of the engineering and other analytical bases, and the moderate Construction would close the door to technical sides of the heavy construction industries. This well rounded mentality also has organizing and general management ability of considerable power, but these could only be advised in case of special opportunity and the absence of probability in his dominant vocation.

In selecting face b, another broadly endowed executive
mentality, the profession indicated is that of county adviser and agent, a vocation now being quite frequently provided for by county and state agricultural associations, the farmers and stockraisers jointly paying the salary. The agent is a lecturer, technician and confidential adviser to all members of the association, often to others, upon matters of production, farm hygiene, implement purchase, fruit raising, etc. This requires an elaborate education in agricultural chemistry, or horticulture, sometimes in pomology, as courses of studies in agricultural industries.

The order of subfaculties in the mental graphic dot-line are, closely: analysis, imagination, skilfulness and calculation, for the technical phases; vocabulary for the lecturing and description phases; object-form and calculation for practical observation; serenity, equity, justice, honor, utility and Stability, as the broad foundations to alert executive and driving industrial power.

The salary in this profession is only fair, but somewhat higher than the school teaching salaries of the towns and counties have so far reached, or are apt to reach.

A series of secondary vocations is also indicated, as in face a, except that analysis replaces the synthesis of Reason, and, with the generally large Construction, Number and Form, moves the well balanced Will along and below the 90 per cent line.

Excess Integrity:

There is a state of excess Integrity, especially when it is reinforced by Amity, Reform, Love and Hope, in which the individual does great injustice to himself, through which he cultivates selfishness and ungenerousness in others. This extremely large Integrity, especially the specifics honor and justice, generally expects full reciprocity from others. It overdoes, wastes its own energies, each time hoping that the recipient will respond in measure. This is self-injustice, and whether it is an exchange of labor, intelligence or money, it should be guarded in its methods. It is generally right that generosity should be reciprocal, whether in the nature of effort or of enjoyment.

To substitute the idea of duty for the idea of justice, and be negligent of the latter, most frequently leads to some form of mental, vital or financial depression that is not easily cured or remedied. It is one of the subtle subversions of truth brought
up through the past, that has just enough right in it to make it the source of many miseries, wrongs and failures.

**Vocational Meanness:**

In other parts of these studies we have outlined the relations of a disorderly Will or of badly organized faculties to the facts and nature of crime, and in some measure to ill actions in the industrial or social world that are of criminal magnitude.

But there are other vocational effects likely to arise from small **Integrity** when not supported by large Aspirations, which cannot be classed as crimes, as in torts and misdemeanors, but which in their injury are just as bad or worse than these.

There are several sources of these bad actions in the mentality and its relations to the vocation. It is quite impossible to make an orderly classification of diseases; we imagine that it will be equally difficult to make an orderly classification of the subjects of that kind of mental hygiene that concerns the vocational life. Many of these states are normal to the individual and are his natural disposition, others have an origin in the home life, by far the largest number in the adversities of a misfit vocation, and a large share in the mixture of misfit, natural inaptness and certain kinds of meanness.

Among the various temporary dispositions due to misfitted vocational relations, are many of those rated as unstable, as unreliable, as socially disgruntled and irritable, as negative and morose, as indifferent and tactless, and so on, through a great variety of just bearable injustices to others, curable by the right vocation and vocational relations.
LESSON TWENTY THREE

The Regional Influence and Products of Liberty
The Regional Influence and Products of Liberty

The regional influence of the specifics of Liberty is immediately in front of the ear, curving along the jaw bone on its backward part down to the ramus or angle of the jaw. It blends with Feeling above, and with Industry before and along the angle of the mandible.

The size of Liberty is shown by the size of the mass of this part of the face, but choice and reciprocity are to be measured from one side of the face to the other, hence by the width of the face in these regions; the lower part of the faculty, the specific independence, is measured by the depth of the ramus, or angle, downward, or its heaviness backward under the lobe of the ear, or by its width from side to side of the face when the jaw is only moderately long downward.

The jaw in this region must accommodate the specific hardihood of Industry, and to do this may need to grow short downward or long downward, independent of the specific
independence of Liberty. These specifics are readily located and read quantitatively, and are in great sympathy in action, from the natural fact that hardihood and independence are mutually supporting to each other in many ways.

Fig. 329 is the face of Rossiter Johnson, one of the greatest of American scholars, an editor, historian, poet and philosopher. The regions of Liberty are not dominant in this face, but hold powerful places against an Intellect of wonderful length and evenness of abilities. In this face the lower regions of Liberty are the most powerful, holding their size with a large hardihood and fortitude. The face is not so wide at the ears, and the specific of the upper part of Liberty cannot be very large unless this width is relatively large.

In Fig. 330, the face of Arthur Henderson, the English labor leader and ex-member of the Cabinet and of Parliament, the face is very wide at the ears and quite so throughout. In this face all of the specifics of Liberty have a powerful range of indexes.

The General Nature of Liberty:

The faculty of Liberty is the chief source of general freedom of action and of executive freedom and independence in matters of motive and purpose. The faculty is stimulated by effort and by the relations of industrial or social progress.

As Liberty ranges high in the mentality, along with its associates Industry and Integrity, it ordinarily comes into power in the great mass of individuals about maturity, if it gains prominence at any time, and in any mass of the race it is not alert to great changes until that mass has made considerable progress individually. But Liberty has various forms of expression and of urgency; these may incline to free-
edom of thought and opinion, to the disposition toward believing differently from the general run of ideas, toward compelling others to change their views to suit ours, or forfeit our regard.

Many men have such an excess of this faculty that they impose upon others endless selfish actions. The same excess often leads to interference with the rights and choice of others.

In the general phases of large Liberty it takes on the color of the views of the Intellect. If those dominant views, or the desires of the Affections, are of a personal selfish order, narrow or bigoted, inclined to gratify the appetites or feelings—whatever the trend—Liberty will seek its forms of expression in that direction. In this moulding of its disposition and its forces into activity, these must read as consonant with the thoughts, aspirations and passions of the mentality.

When these are complex and arise from a cultured or broadly acting mentality, the aims and intents are wide and less constrained in any one direction, the specifics themselves vary the course of action and the stimulation of the faculty in its influence upon the individual. They have also preferred responses among the other faculties that by relations of mutuality give added power to themselves.

Unless there are powerful opposing or qualifying faculties, dominant Liberty urges the rights or ideas of the individual to extremes, imposing on others his will to do as he wishes, always seeking to make his own methods the determining course of action wherever it is possible. It urges him to hold every possible option on conduct and ways and means, and to elect to do as he wants to do.
Under all of these conditions, it is well to describe the specifics themselves as subfaculty powers and as vocational elements bearing upon the whole life of the individual.

The subfaculties or specifics of Liberty are choice (or freedom), reciprocity, and independence, read downward in the region of Liberty in the face. In the mentality the faculty is at the extreme backward end of the Ellipse of Elaboration, and it has the characteristics of aiding the other faculties in many forms of personal and industrial elaboration of purposes, ambitions, and conditions of activity.

The Specific Choice:

The index of choice (freedom) is the upper end of the faculty, before the tragus and the forward end of the helix of the ear, and below the crest or outer ridge of the zygoma.

The blending boundaries of the faculty vary some in relation to the mandible and cheek bone, as these are subject to considerable differences in form, but the focuses do not vary much in their relation to the ear and angle (ramus) of the mandible. The margins are shown again in Fig. 331, face d, whereon the initials of the specifics are written.
The specific choice is the impulse, or intention to select one's course of action or of want, without any other consideration than not wanting to be bothered or interfered with by any one else.

Its modes of expression are, naturally, those of self-preference, of its own policy, means or moods. Nor are these synonym equivalents. For self-preference is not always policy, either good or bad, but exactly a personal choice, just as the means selected may not be the best, nor the moods the most agreeable.

Vocationally, many quarrelsome people are so because of a dominant or dogmatic choice, because they cannot allow others a voice in what they will do or in how they shall do it. However, it is more largely personal than mutual; it wishes an option in its own action, an advantage in place or power or means; the right to change without the sanction of others or without recourse to conference and concession.

Like the independence of Liberty, choice is not, in these moods, a good organization specific, when it is under the restriction of rules and close supervision. For this reason many men with this specific large, as in Fig. 329, prefer the professions or arts, or a vocation where they can concur with the wills of others or not, as they choose. In other instances, unless reciprocity is also nearly a dominant, the individual will work most easily in an agency where he is his own governor to a great extent, or where he may elect the range and time of his actions.

Many salesmen have wide heads in these regions, and are uneasy under any schedule of time, sometimes so under schedules of routes or of methods.

In social life and friendly conduct large choice frequently gives one the attitude of selfishness, of always wanting his own way, of plunging ahead without the courtesy of consulting another's wishes or pleasure in the matter. It also inclines one to nominate the subject of conversation and to overlook the equable quality of response to opinions.

**Very Large Choice:**

When extremely large among the Will faculties, choice is apt to be supported by independence, and together they create the disposition to be restless under any condition where orderly procedure is required, and are apt to lead to wanderlust in the search for change and adventure, and may take
action with a large solitude in seeking lonesome jobs, the life of the prospector, hunter or traveler.

Sometimes choice leads to radicalism in thought, seeking greater freedom than social conditions or surroundings admit, or in a vague way realizing some kind of dissatisfaction. This is notable when Defense is also very large; when the Impulsions are large; when the Aspirations and social faculties are small. Or, in a kindred way, choice may impel breaking away from old methods of industry or vocational rules, and encourage new inventions, processes or theories. This is apt to be the case when Reason and Construction are very large; when the artistic faculties and the Aspirations are large; and sometimes when Industry, Defense and imagination are close to the maximum line.

The counselor and employment manager will need to draw equations of the influence of other faculties in determining which course extreme choice or even the whole faculty of Liberty will take.

Small Choice:

When the specific choice is small or below the medium of the faculties, the counselor should advise the individual to speed up his decisions in matters of a personal nature, to avoid delays where the subject is not worth wasting time upon, to choose what he wants himself rather than to compel others to decide for him. In the common courtesies of social life and of the home, to delay others, to "eternally be behind," is a form of injustice, and by no means a source of complimentary distinction, any more than the same trait is in the mutual conduct of effort in the day's work. Thousands of men are constitutionally tardy at their work, yet will be honestly just as tardy in stopping as in beginning; both are injurious habits and should be avoided, because due to the lax or bad state of choice in not taking action when it is time to do so. Without either ill-will or laziness, such a man gets the effect of one and the reputation of the other.

The Specific Reciprocity:

The central specific of Liberty is reciprocity. There is little value in the freedom of social or of individual life without the presence in these relations of the spirit and letter of reciprocity. True, mankind in its industries, commerce, and pro-
fessional life, in its life of paid service, compels the receiving and giving of values in so far as these can be enforced. But this is not the expression of real reciprocity from the sensible outlook of reason. Mutual, voluntary, courteous, and anticipated good-will and responsible conduct are not only affairs of law and of contract, but affairs of enjoyable relations, confidence in the equities displayed, and sensibility to the absence of danger. Hence, when the specific reciprocity is large it adds much to the ease of accomplishment in the relations of the business world, and in a conscious manner softens some of the necessary contentions of exchange, trade, and labor relations.

In personal life large reciprocity trends to defeat self­

ness of effort and of means. It is thus a modifier in these ways of extreme choice on the one side and of small choice, that avoid decisions, on the other. It is another kind of honesty than that which grows out of Integrity; it is the natural honesty of conduct.

Large reciprocity seeks freedom of action, but it accords the same freedom to others; it is alert to the full exchange of favors, just as Integrity is alert to the full exchange of values.

Extremely large reciprocity is not apt to injure others, but it should realize that one should be just to oneself.

Small Reciprocity:

Small reciprocity is a common source of ingratitude. When the friendship faculties are only moderately large, small reciprocity is apt to result in thoughtlessness, in negligence to obligations, in carelessness concerning courtesies to others, and in an absence of good manners. It refuses to grant to others the liberties it claims for itself, or to enter into a fair exchange.

The Specific Independence:

This specific sweeps around the backward margin of the jaw, below the margin of the lobe of the ear, and includes the upper part of the ramus and the attachment of the local muscles.

We have already stated that this specific must indicate its degree of power by the size of the angle in accommodation to the neighboring specifics. A heavy region in this part is not the so-called bulldog jaw, but is a support to it, since
hardihood and the Stability specifics are farther forward. The faculty region is best described by illustrations, and reference is made to the faces of Fig. 331, where in face a, if choice is 85, reciprocity 80, hardihood 100, fortitude 100, then independence is 100, because it is as large as the latter two specifics; in face b it is much smaller than reciprocity; in face c it is 50, compared with the 95 of utility or the 60 of choice.

In Fig. 332, face a, the powerful face of M. Stephen Pichon, the region of Liberty is almost a dominant faculty, and independence apparently holds its own among the specifics, in open competition with Economy, synthesis of Reason, Attention, pride and love of power. This face is a dynamic, vital and intellectual combination of great intensity and sympathetic self-control.

Face b, a likeness of Vance C. McCormick, is another powerful combination of Intellect, Affections, and Will, in which Liberty ranks close to the dominant line, with independence the leading specific of the faculty. We are including a blank table with these faces, upon which the student should make ratings of all the specifics so far studied.

Independence in Personal Life:

Independence gives a sense of unsubmitnessiveness, a self-reliance in purpose or intention, a freedom from the oppression of possible failure or restraint, and a general liberation from conservative tenets.

In personal life, large or moderately large independence gives a sense of freedom of action that is not only an enjoyment to the possessor, but often to companions. It destroys the cramped, indecisive, repressed expression that ties one to habitual thought and action; it changes one from the defense of negation to the attitude of buoyant expression, thus throwing self-protection into the realm of necessary defense and apparent cautionary actions.

Normal independence gives one an atmosphere of vividness, of mental and bodily activity, unless over-stimulated by the bombastic elements of very large Dignity or the over-bearing actions of extreme Aversion and Destruction. Yet large independence is not a highly social specific. It often leads one to act and think alone, to avoid the search for agreement in personal and in ethical affairs. In this manner it influences and responds to choice and may, when very large and in association with a large lower Will region, hinder
congenial companionship. Large independence often forces one to work alone, to desire freedom from any kind of mental restraint, to avoid the dependence of others, either mentally or financially, and yet does not necessarily grant freedom to others.

**Moderate Independence:**

Moderate independence, when choice and reciprocity are also fairly large, makes the best equation in personal life, supporting reciprocity in relations with other people, spontaneously making a choice of optional actions when justified by the information required, and “keeping step” with companions in the amenities of good conduct or agreeable companionships. It seeks agreement when the elements are not markedly in conflict with its rights, and is influenced by the considerations of Amity and Sociability.

**Small Independence:**

In many relations of social or industrial nature, small or below medium independence is restrictive, in that it allows Caution and Economy to govern it, an aggressive and dogmatic disposition to move roughshod over it, and that it does not stimulate to changes that would better the individual, for fear of some unknown kind of danger. In family life, a member with moderate independence or small Liberty is often imposed upon, is frequently made the burden-bearing “wheel horse” or the drudge of the family, either in the household or in the sacrifice of income to the selfish interests of others. Parents and their children, brothers and sisters, even friends, no less than employer and employee, may need to be made aware of the existence of mutual obligations and the sanction of freedom equities. It is as much the vocational counselor’s profession to rectify the liable abuse of an unprotecting faculty as it is to rectify and counsel against the uncongenial vocation or the meager salary.

**Vocational Relations of Liberty:**

The faculty of Liberty is a profound source of executive freedom and of spontaneity in motive and action. Some of its phases are often spoken of as initiative, though initiative that is worth mentioning has more than a disposition to begin action—it needs intelligent conceptions of what action to take.
Liberty, in concert with other executive faculties, generates wilful intensity to carry out one's ideas and to gain power. In many ways it is the antagonist of subserviency in any form, either when there are advantages to be gained or none.

In Commercial Life:

Large Liberty, through independence and its relations of enthusiastic intensity, with imagination and invention, spurs
the whole Intellect toward original plans and modes of executive or dynamic endeavor. Through the same specific it excites the Aspirations as stimulants to the highest ranges of desires, the most vivid results of influence upon the community life and general progress.

**Independence** also arouses perseverance and the persistence required for hard tasks, or for those in which there is hazard, doubt or danger. It sets itself against any kind of commercial oppression that the Intellect is fully aware of.

As a plenary power in the Will, its activities arise, in part, from vividness and the pleasures of action; it has its own peculiar forms of spontaneity, as shown in the expressions of play and sport, in the exercise of motivity growing out of pure potentiality, or the consciousness of unused power. In these respects, when large and dynamic, it is highly executive, and shows us at once the difference in this quality between the scholar and the executive: the scholar finds his greatest enjoyment in formulating ideas and judgments to influence the mentality of mankind, to charm the senses, or inspire new opinions; the executive finds his greatest enjoyment in controlling actions and products, in satisfying the wants of mankind in a particular way, in competing in the world of action for the sensible prizes of victory. And large Liberty impels him to do this independently of the financial reward; but as the mutual aids of Liberty, through its specifics reciprocity and independence, carry their demands into the wealth faculties, stimulating them not only in the accumulation of wealth and its ownership, but because these add the means of gratifying power, the executive mentality is more conscious of the practical matter of compensation than is, generally, the intellectual mentality.

It has been incessantly said that the dominantly intellectual mentality does not realize or appreciate the values of wealth or the practical utility of struggle to gain it. We have not found it generally so. We have found that it could not do both—develop its own field in competition with that field, and develop the executive powers in competition with the natural aptitudes of the executive world. Nor does the time required for either admit of the other as a by-play, even if the mentality of either scholar or executive had both regions of the mind extremely large. When we say it cannot do both, we may also add that it will not do the other. It is not the Will of the scholarly professional man in the non-executive
vocations that always prevents his great financial success, but the dominance of power and time used by his Intellect; just as the executive engrossed by expressions of positive, directive, commanding and compelling force, carries on his intellectual avocations in the hours of recreation, of aftertime ease and social expression, without attempts to compete in the more elaborate technics and massed particular skilfulness of the other fields.

Without a powerful Will, the scholar has none of the "buffers" against the outside hard facts and dynamic powers possessed by the executive, superintending, commanding, and otherwise competent commercial Will of others. Without these powers, say, those studied, of Stability and Industry, those yet to be studied, Economy, Caution, Defense, Aversion and Destruction, after one of those friendly contentions and exchanges of commercial diplomatic "forces" so frequent in the commercial and industrial world, the scholar would retreat or have a feeling akin to seasickness.

The salesman, too, must have these "shock absorbers" in the Will and in the Aspirations, as a species of hardness on one side and of optimistic recovery on the other; he does not get paid for oftentimes failure, as do many of the intellectual vocations.

Large Liberty stands in good stead in the executive world and in the commercial world, as one of the uniting Will faculties and to add vigor to the attack upon new contentions, and, in the intellectual world, to give freshness and adventure in the arts, letters and sciences.

Thus the capable man with large Liberty seeks enjoyment in purposeful employment, in rugged accomplishments, in the test of unusual attempts, and in the gratification derived from individual methods.

The counselor and employment manager will bear these distinctions in mind. He will often meet them at vocational cross-roads, where to send a man in one direction will mean loss, but in some other directions, success; where he may need a man with closely balanced, broad and highly organized mentality, yet just inclined in the right direction.

The counselor and employment manager will also find men of great natural aptitudes whose Intellects have parted company with good order, who are extreme in independence and aggressiveness, and so, useless in the steady, constructive and utilitarian positions.
Relations of Employer and Employee:

The relations of employer and employee are always subjects to be treated with careful consideration, chiefly because in nearly every instance the relations are particular and surrounded by such circumstances as to make general treatment too vague to be useful, and didactic treatment too circumscribed to fit any considerable proportion of instances.

However, choice, reciprocity and independence are powers to be recognized as values just in proportion as they operate to add to the mutuality of understanding, the ease of vocational relations, the constancy of employment and productive results, and to the industrial happiness of all concerned.

Whatever the amount of the specifics of Liberty that will conduce to the best of these conditions, because that amount leads to confidence and peace of mind and to ease and enjoyment in work, that amount we should try to recognize, should look for and encourage, either in the employer or employee.

To the employer, his business is his castle, to stand against the world, and his conception and power of freedom of action, his relations and organic power of Liberty expression are as important; to the employee, his mentality and its body are equally his castle in the freedom and emoluments of which he conceives he has rights of expression. Since both exist and each makes progress by the aid of the other, the details of work, the necessities of order, the compensations, the interrelations of divisional tasks, are matters that custom and agreement must settle, and Liberty find its accords with their necessities.

Every vocational mental ability is required in any considerable concern; any amount of massing and compounding one series of abilities will not relieve the necessity of having the other kinds. If half of the mechanics in Baldwin Locomotive Works tried to sell the product of the other half, it is doubtful if they could do it.

Some Adverse Proportions:

In Fig. 336 we have grouped in an illustrative way some employee adverse mental ratios, supposing the other vocational faculties to be normally right. The relations stated above as bearing upon vocational success will usually be defeated when any one of the following groups is small or below the average of the employee's specifics: candor, kindness,
FIG. 335
mutuality, courtesy, self-esteem and firmness,—because there would be a fatal lack of good intentions or interest in his work or fellow-workers; confidence, good-will, enthusiasm, justice, honor, intensity and hardihood,—although this does not imply small friendship or a small social nature; or, as an illustration of Will small specifics, pride, justice, honor, utility and aggression. For this last group it would take heavy incentives to keep him from inordinate laziness.

The minus quantity specifics are not the only groups to be shunned by the employment manager. Some of the ordinary excess groupings are nearly as bad, but sometimes appear more favorable or are less easily observed by general methods.

We have included three groups in the illustration, generously labelled visionary, egotistic, and crafty. A little study of the combinations of extreme specifics may lead the student to more drastic descriptions.

While one will find but few men or women who are not subject to vocational criticism or suggestions that can be valuable, the other fact is true, that there is in the vast majority of these an intensive struggle for self-improvement and for as loyal service as they think their compensation or re-
sponsibility warrants. Their conceptions of their duties, rights and liberties are drawn from their experience and hearsay, and can hardly be superior, if need be, to their sources of information. We believe employers in general pay too little attention to instructive measures along these lines of personnel.

Phases of Personnel Assurance:

In the study of Industry we briefly considered the problem of the stress of competition in its business and employment relations, noting the fact that the employee as well as the employer is often under the duress of chance and lack of assurance. Anything that adds to the certainty of employment and to its considerate compensation adds to the ease of effort.

If surplus man-power loss warrants discharge, does surplus employment opportunity warrant the right or risk of resignation or quitting? Or is the matter of below the standard work force labor loss one of binding right and interest to the employer? Is security of work or of help an offset to occasional ups and downs on both sides? To what extent should the reciprocity of Liberty act as controlling under the conditions of industrial and vocational chance or insecurity or choice?

The counselor will be compelled to consider some or all of these questions, and to find part of their answer in the faculty of Liberty of the prospective employee, and in the relations of that employee to the employer, whether in a large or a small concern. In the small concern and with the individual employer, the mutuality and reciprocity existing as conditions of employment are generally greater than in the larger concerns. Larger concessions to individual liberty is generally the result of that larger reciprocity. The employment manager, however, seldom is employed except in the large and consequently the less personally related personnel conditions. But it is a large part of his business, and that of the sales manager or the employing executive, to eliminate the manpower and turnover losses by the equations of employment relations, and to create an understanding of matters falling under, in part, the specifics choice (or freedom), reciprocity and independence.

Generally abject subserviency of an employee destroys much of his value, depresses his ambitions, and devitalizes his mental and physical energies. Excess of the egotistic specifics carries the employee to the other extreme.
Large Liberty versus Assurance:

If there are phases of the specifics of Liberty and assurance in the nature of the employee that may make that employee a success or a nondescript, so there are phases of the specifics of Liberty in the employer or corporation that may depress or intensify his or its success. In the case of the corporation, the characteristics are modified somewhat by their spread throughout the management. In this management, however, there are individuals in conspicuous or dominating focuses of power. To these the employment manager may need to pay careful and discreet attention. He will often find men of almost indispensable values in some qualifications and with extremely sharp angles and highly wrought tempers in others. The natural qualification for good supervision and high executive power, that is, that the dynamic Will shall be well endowed in the right regions, greatly multiplies the probability of severe judgments, intense independence, succinct expression, and aggressive impatience.

Review the faces of the great majority of men or women who have moulded executive and supervisory ca-
reers; the indexes of those powers of mentality that create ruggedness, fearlessness, boldness, perseverance and other controlling dispositions stand out conspicuously. When high Will faculties are supported by fine quality they take on a tension that requires extremely careful adjustment to prevent twisting the mentality out of vocational shape. The struggle for new opportunities and successes, the reach for promotion and excess production, the establishment of new rules and customs, and the urging up of common-consent practices, become the normal perspective of the executive mind.

It may not be that this kind of a mentality is more intense or highly strung than is the mentality of the scientist or the other technical workers; but certainly the dominant regions are dynamic, motive, impellent; they are more subject to the stimulation to contentions.

Take the two faces of Fig. 338, the portraits of industrial executives. Face a has the appearance of calmness and self-control; and yet every region and curve in it has the expression of settled determination to accomplish all that is possible, to master every condition, to go its own way, and exert the greatest freedom and independence consonant with its aims.
Face b seems more intensive, more sharply severe, expectant of large troubles and sharp contests. The cheek is set and placid, the end of the nose has enormous width—synthetic, intuitive, broad-visioned, unchanging. It would self-investigatingly look over employment conditions, exercise great caution, intensity and sense of justice, draw its own conclusions and purposes, and then use just as severe means in having those conclusions carried out.

The powerful Liberty in each of these faces is controlled by moderators in the Intellect and the Will, and yet each would follow the executive method of drawing many concrete, definite, final and commanding conclusions in rapid succession when necessary. The distinction between the usual intellectual action and the usual executive action in matters of time is thus illustrated: the first is like a story, continuous in its main characters from beginning to end; the second is itemized, divisioned, diversified, measured, and open to contentions.

Compare the thin cameo-cut face of the electrical expert—face a of Fig. 339, with the executive managerial faces of Fig. 338. In this
face the power is evident, but it is dominated by the Intellect, its very vitality is held in check by the intensity of the intellectual struggle to master the intricate problems of electrical generation, control and utility. It seems swamped and grim in mechanism, mathematics and the urgency of invention. It would have been fatuous to have asked this man in his early life to take a vocation where the items of judgment were as ephemeral as those of merchandising, however great the aggregate of the judgments passed.

Face b, one of the greatest American commercial general managers, has the harmonic temperament, and the indexes of the imperturbable general manager and executive, except that Stability and hardihood are slightly smaller than the volume should be to meet the mental graphic line of commercial general managers.

Consider, for a moment, these four faces to be of medium quality, in the vocation of a machinist or any other skilled vocation, under good wages, regular hours, close supervision and approximately time study production. Not one of them would be satisfied or mentally comfortable. The three executive dispositions would be irascible, dogmatic, intolerant and critical, while the technician would probably move from one firm to another until he found a position of experimental mechanics or of technical supervision. From the viewpoint of labor turnover, three at least would not be very acceptable. Medium quality would keep them out of the ranks of "big business."

However, one will hardly find men of low or medium quality with such ratios or modeling.

Face a of Fig. 340 is that of a highly cultured actress. The nose is high, long, observing; in the brow object-form is moderately full, motion-form and individuality somewhat larger, the specifics of Color fairly full, those of Number only moderate, while Reason is analytical with spontaneous judgment fairly large. Liberty is below the average; choice and reciprocity are moderate, and independence low. This face taken from one of a series of nearly two hundred larger than life paintings, does not show the modeling in the cheek, due to the great difficulty met with in reproducing oil colors in black and white by photography and half-tone.

In face b, a portrait of Jane Addams, the shadows are much better and her wonderful face portrays clearly the greatness of her mentality. The end of the nose shows the high intuition, foresight, synthesis, observation, mental-focus and imagination; above the alae is seen the economic index, large
enough to appreciate the waste of lost human effort. In the upper lip the Aspirations are full and awake to the conservation of life by welfare and educational methods, to the values of practical corrective effort, to the reinvigorating power of unselfish friendship, and to the protective power of ethics and esthetics. In the full cheek Integrity and Stability are very large and resist any encroachment upon her views of justice or upon the progress of her work. The student will see the highly uniform fullness of the other specific regions already studied, and will note particularly the width in the regions of Liberty.

In this regard a word of advice may be given. The student should learn to judge the size of faculties, either their length forward by their projection in front view, or their facial width from a profile view. It is not necessary invariably to read forward indicating specifics through profile attitude, nor to read the width of the face or forehead from a front view. The projection of the signs can be judged from any direction they can be clearly seen.

Face d is that of Marshal Joffre—Papa Joffre, the French call him. Here we have another remarkable nose, forehead and chin. The power, character and mental abilities of this great field marshal are in accord with the indexes of his mentality. Note the indications of Liberty and the great strategic signs of the nose.
The great quantitative index of **Number** is clearly seen, and the Aspirations in their parenthesis regions.

In Fig. 341, face a, we see another phase of **Liberty**, the full and powerful mental temperament of the Canadian biologist and naturalist, George J. Romanes. Exercising his almost dominant specific, **choice** (or **freedom**), he early abandoned the accepted biology and doctrine of "animal instinct," and in 1881 published a work, "Animal Intelligence," and in 1883, "Mental Evolution in Animals," in 1888, "Mental Evolution in Man." In 1882 he took issue with much of modern materialistic evolution in an article on the "Fallacy of Materialism."

One knowing the local influences of mentality would need a rather wild imagination to be able to see in the faces of either a or b the qualities of the manager or the executive, although b so inclines more than a.

Face b is that of Herman von Helmholtz, the great physicist and inventor. The shadow of the region of **object-form** is too broad in this print, as it is also in that of Romanes. The forehead has nearly the length of one-half the face, as 18 to 40, and in breadth as 22 to 40. **Choice** and **reciprocity** of **Liberty**, and **vigilance** and **rest** of **Caution**, are apparently the large specifics in the Will.

Face c is that of the Italian Admiral Corsi, a rigid disciplinarian. His faculty of **Liberty** compelled him to resent any interference with his conceptions of his duties.

In Fig. 343, the angle-line analy-
sis, we see the face of a railroad chief executive who has made himself a master mind of railroad operation, though differing in some of the lower Will faculties and some of the Intellect faculties from the composite line of railroad executives.

These exceptions to the analysis composite are turning close to the new forms of executive life, the forms where the Aspirations and the conformity to standard practice methods are taking the place of the old "specific order" methods; where the well-being of the staff and officers down to the individual common labor employee is being considered as part of the interest and good of the concern. This executive, whose portrait we have drawn from memory, is largely interested in the intimate direction, the intensive good-will, the humanizing and harmonizing of his forces. His intellectual dominants have analysis as their highest point. The synthesis and imaginative commercial vision are secondary but powerful, and rest upon an incessant analysis of causes. The high Aspiration and Culture groups of faculties take the place of powerful Commercial and Wealth groups as bases of initiative and purpose. The Ambition group of faculties, while dynamic in some specifics, is wholly secondary to that of Coaction, the latter's Integrity, Industry and Liberty forming the dynamic background to the whole executive power.

The intense voluntary attention to details of operation, analysis of functions, and care in the "close formation of work" in this face is in contrast with the much more synthetic reasoning of both faces b of Figs. 338 and 339, where mass operation, broad control, and avoidance of details that can be delegated, are much more their usual method. Only a buoyant optimism and a willingness to live in closer service can carry without burden the mass of careful definite facts and attention to many things, as shown by the analysis and general intensity of face a, Fig. 343. Note the modeling of this face in the regions numbered in Fig. 344. At the 100, the 95 and 88 per cent the surfaces are as if carved with the utmost care and detail of variation.

The rounded, smoothly blended face of b, Fig. 343, has many evenly developed faculties, so close in ratios as to be vocationally unspecialized, but intensive enough to make it necessary to keep under the stress of hard activity, this activity finally resulting in the choice of a life of industrial engineering where the problems of production were largely those of the co-ordination of working units and of a series of processes. In that work he reached an eminent success. He was not
Gen. Seth Williams - Aide de Camp, U.S. Grant

FIG. 344
executive enough for a works manager, disliked confined work too much to be a mechanical engineer, and so moved around a category of vocations that were highly specialized, but, having the emotions that moved men, the insight that saw new or better ways, and the innate courtesy and serenity that counted high in elements of personality, he was able to harmonize and co-ordinate men and methods to the better accomplishment of both.

Studies by Comparisons:

The powerful faces of Clemenceau and Pershing furnish wonderful comparisons of the variations in high executive power, both in congregations of specifics and in the dispositions arising from them. The histories of both men are so well known that we need not summarize them here. The students should work out these histories from the faces.

Memorandums of the history of one day's advice given twenty-four years ago, is a good study for the student. Two "would be" executives failed; two "didn't expect to be," succeeded. Face a of Fig. 346 tried store-
keeping and store managership under most favorable circumstances, and failed at both. We advised him to become an oculist, at which he made an uncommon success.

Face b, a farmer boy, was advised to study mining engineering; in twelve years he was an acknowledged success.

Face c intended to be a paperhanger and decorator. He was advised to work through to production manager in a shoe factory, and succeeded. Face d studied accountancy—but what could an accountant do with that kind of a nose? We recommended private secretarialship, in which he soon excelled.

**Dynamic Functions:**

To determine in what particular direction or into what specialized field the executive should go, is often a difficult matter. Much depends upon the personality of those with whom he is to co-ordinate his work, and the intellectual interest he takes in the products over which he exercises control.

The Intellect dominance of particular faculties—manufacturing, constructive, artistic, literary, etc.—may have definite in-
centives in themselves as shown by their signs. The mass of vocations of a business nature, our commercial organizations, our branch office and departmental concerns, are all institutions of great executive need.

However, some conditions in particular the true executive must have if he is to satisfy the normal demands of a greater part of his volitional faculties. Among these conditions are the opportunity aggressively to extend his efforts, to build up an administration and organization of working forces, to assume responsibility in carrying on his tentative functions in relations to others, and the freedom of the executive faculties from conservative detail in work.

In this last regard the counselor and employment manager must remember a prime fact: that executive faculties dislike repeated detail, dislike operative repetition, and chafe under set methods. Whether in the one-man business or in the ten-thousand-men concern, the executive must have the rational grouping of successful faculty specifics of the Will. It is this grouping that makes the work of the counselor so necessary to the individual in his vocational life and that requires that the counselor shall study the Will as intensely as he does the Intellect. In the Will extreme faculties often defeat success, and are more likely to do so than extremes in the Intellect, from which vocations arise.

The executive must have a high sense of some particular kind of values; without stressful effort he must command fair bargains; he must not spend money hastily even for promotive factors; his prime factor in industry is the good investment of property values and the conservation of knowledge and materials without cutting down the essential means of industrial progress.

In this balance of Liberty, Stability, and Economy against his Industry and progressive aspirations or impulses, he should naturally keep in mind the same fact for others; he should be alert to a fair view of the values of effort and the cost of the sources of accomplishment. The successful executive is becoming more sensible to what people must be satisfied to work for, live on, save from, and endure to succeed. The vigor of action of those he governs will largely depend upon their consensus of his right action, even if it is a mistaken consensus.
Source of Compensation:

If there were no dangers ahead one could not get paid more than common salary for effort. The compensation for an executive life and vocation arises from the fact of security in judgment where others might fail.

Imparting accumulated knowledge is one thing; to plan the use of accumulated knowledge, to force the "climb" upward into the constructive expression of that knowledge, and to make the changes necessary in self-determined executive opportunity, are parts of the executive's function.

The World of Chance:

There must be the sharp angles of commercial or operative promotion. The vocational counselor soon realizes that the executive's tools are chiefly dollars and men, not figures and machines; that dollars and men are much harder to estimate than are any other forms of quantities, because the elements of chance in these dollars and men are much greater than in any other kinds of quantities.

There is nothing hypothetic about the value of these facts or the necessity for their recognition.

Culture and Purpose:

It is not probable that a man of moderate natural executive ability can cultivate enough of that kind of power ever to become distinguished as an executive. Executive power can be stimulated and directed, but it is not largely capable of the degrees of culture open to the Intellect. It is not some one else's idea, it is not highly absorbable.

When the problem is one of stimulating and evening up faculties already potentially high, or among other high power faculties, the faculty associates may be brought to bear upon those less active and stimulate them into normal intensity. As an example, if Caution is but moderate, while Industry, Defense and Stability are powerful, these may arouse an inert, or potential, Caution by energy demand upon it; or when Economy is but moderate, Caution, by being warned against failure, may arouse the sense of economic utility and advantage.

The counselor should advise the potential executive to cultivate the disposition to settle doubts when others cannot settle them, to shoulder the hardest problems he can when there is a reasonable chance to carry them through, to command the ablest assistance opportunity permits when himself in doubt,
and to stand by an agreement whenever it is possible to do so, even if it spells hardship or defeat. These are modes of executive culture.

He should advise the potential executive to be willing to share his own credit, if necessary with his assistants or associates. This often means holding one's temper under just provocation, paying reasonable or deserved compliments, the recognition of special efforts on the part of others, suggesting ways and means to one's official competitors for place of power or advantage, and, often, giving credit to a man in that man's class of work for what may be in reality a result of the executive's own thinking or knowledge.

The potential executive should also possess the tendency to cultivate a certain ruggedness in decisions, so that his conclusions and directions become clear, succinct, forceful enough, and still kindly. We note "kindly," because kindness is the most universal bond of mutual favors in which one can invest.

Kindly diplomacy and frankness in business management is an essential form of commercial good manners, and often smooths rough roads and bridges quicksands of executive traffic. It is quite different from subterfuge, since the latter is a form of falsehood, ill manners and misrepresentation.

Progress toward the executive life, aside from the fundamental studies earlier noted, is made through studying the guidance and methods of supervision of others, of assistants and those in subexecutive positions.

It is aided by effort in understanding the problems and execution of complex orders, by foreseeing the results of rules and regulations issued by controlling factors, by consideration and appreciation, or readjudicating executive methods and procedure, and discovering the faults or inadequacies of means or methods.

Executives do not grow by making mistakes and blunders, as a good many people superficially think, but by avoiding them, and by noting, adapting, thinking out new methods and transplanting the successes of other executives, subexecutives and competent employers.

The six faculties of the Will thus far treated are the more highly organizing elements of mentality that make for executiveness, that are positive powers as creators of co-ordinating executive energy, that establish the kind of resistance to opposition that wins the consent or that controls the acts of others.
LESSON TWENTY-FOUR

The Regional Influence and Products of Caution
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by
HOLMES W. MERTON
The regional influence of Caution creates the broad plane from the crest of the cheek bone upward to the tissues around the eye. It extends from the base of the nose along the upper surface of the malar bone and zygomatic arch to the backward crest of that arch. Ordinarily the lower margin of Caution is outlined by the shadow on the cheek when a light falls from several feet directly above the head, or is the forward crest of the cheek bone. When the cheek is quite flat the margin and the places of the specifics can be located by an imaginary downward curve from a level with the top of the wing of the nose to past midway between the corner of the eye and the ear, along the lower temple line. The illustrations clearly indicate these margins.
In Fig. 348, face a, the forward regions of **Caution** are large, and the plane of the cheek narrows as it retreats; the face itself does not widen much at its regions below the temple. In face b, that of a Crow Indian chief, the region of **Caution** is extremely large, as are parts of **Industry**. The hollow cheeks are unusual in the American Indian face; the mouth and its upper lip are also much larger. Some of the tribes had less pronounced **Caution** in fact and in indexes. This was particularly true of the southerly tribes where precautions were less necessary and the disposition less aggressive. It is noticeable, in many large **Caution** regions, that a secondary plane lies above the main shadow of the region, but partly within the territory of **Caution** and partly within that of **Industry**, and, where the cheek is full, extending over **Integrity**.

Frequently the region of **Caution** fills up very high on the cheek, the bones being heavy under the socket of the eyes or inclined to forward projecting sharp ridges.

In faces of an opposite tendency, as in the Japanese, Fig. 349 face a, the malar and zygoma bones sag downward considerably below the plane of **Caution**, the crest of the bones falling fully in the re-
regions of intensity, utility and choice.

In this kind of a cheek region the student will be inclined to see Caution large, to rate the projecting ridge as the specifics of Caution. But he must exercise care in this, making an "imaginary line" follow above the crest when it is extremely low on the face. The dot lines of the Indian and the Japanese faces are the low limits of very large and of medium Caution; medium, because the Intellect of the Japanese face has more powerful indexes in it, and Industry has considerably larger intensity and utility. The Japanese face has full forward projection as has the Indian face, but is a much more cultured face. In the two faces notice that the lower margin of the region of Caution is approximately the same distance from the eyes, and holds the same relation to the nose. In contrast with the Caution and Industry of the Japanese face, notice the unaccented Caution of the cultured Chinese woman's face, in close resemblance to most early maturity faces among the Chinese, many men also having the smooth, unprominent cheek bones. Others however, have angular cheek bones, some of them projecting and cautious, especially in the coast cities, and among the Manchus, who are also aggressive.
The General Nature of Caution:

The general nature of Caution is conservative, protective, and forewarning. In fields of personal danger it creates a disposition toward general alertness to matters that are customarily liable to injure one in any way that is preventable. Its reliance is most pronounced in its relations to the various senses, because it must depend upon these for the signals and appearances of dangers.

But Caution has many modes of action that arise from the presence of chance, doubt, accident, and the various forms of advantage that may be used against one in industrial and commercial life.

These triple forms of liable injury extend the range of cautionary efforts much beyond the variety of activities of such faculties as Dignity, Stability, Liberty and Laudation. The facts of personal injury, social and economic injury, accident and organic injury, all widen the range of its faculty activities.

These various distinctive dangers are not easily described by the terms of specifics, but are clearly within the scope of these terms when the analysis is extended.
We shall observe these facts in the description of the specifics, secrecy, vigilance, and rest, three terms of wide meaning, as the tables indicate.

The Index of Secrecy:

The focus of the specific secrecy is in the forward end of the region of Caution, above and a little forward of the specific intensity. Sometimes the valley of the root of the nose has just back of it a considerable fullness which forms the high point, or focus, of secrecy. The region is marked in Fig. 350, and in face a is large and well forward where the high light is strongest.

When secrecy is medium in size the face in this region slopes gradually back from the base of the nose to a moderately full cheek bone, and so is not noticeable as either prominent or deficient. In many thin or spare faces, as in Fig. 351, face a, the specific may be indicated as full or large by fullness on its nasal side, while there is a marked valley back of it, or between secrecy and vigilance. This valley is not close to the nose, but fairly back of it and backward from the crest of the parenthesis.

The percentage of below medium secrecy indexes with this marked valley be-
between secrecy and vigilance is quite ten times greater among men in the purely intellectual vocations. It usually has the mental temperament, with the Will unevenly developed or potential, lacking the dynamic and nutritive powers found in people with the heavier face.

The Index of Vigilance:

The region of vigilance is the middle third of Caution, along the plane of the cheek bone well into the shadow directly from above, and its focus is back of the valley shown in Fig. 351, face a. Unless the valley is well back or so broad that it becomes a large part of the region, the focus may be large even if the valley is clearly present and deep.

In face b the focus is marked, and as the face is very full and this crest wide, the sign is much larger than in face a, as is also the case in less degree of the sign of secrecy.

We shall see that the sign of vigilance has a marked effect upon many of the vocations, and as a central fact and influence in Caution, should be read with care.

Its focus is sometimes moved well back toward the opposite sign of Caution, which we have termed rest. But it is always within its own regional relations, which boundary is traced downward and slightly backward from the corner of the eye and outer low margin of the socket, as shown by the dotted line on face b.

In flat front cheeks, where these regions of secrecy, vigilance, pride, intensity and justice are medium or smaller, vigilance seldom "turns the corner" to the side. Its direction of development is obliquely forward.

The student will remember that the specifics of Number and Language were "around the corner" of the forehead, and that rest, choice, utility, reciprocity, with other specifics lower down, and sometimes honor, are also on the sides of the face, though certainly the corner is not sharp.

The Index of Rest:

The specific rest is the third element of Caution; it is the element that seeks recuperation and repose. We may describe it as being on the side of the face, forward and slightly upward from the ear opening, on the crest of the cheek bone about midway between utility and separation. The focus is marked on Fig. 350.
In face a, Fig. 352, vigilance and rest are both very large. It is well that in this face rest is as large as it is, because the Intellect is extremely long and the nose high, but much of the lower facial regions small, particularly Aversion and Destruction, while Dignity and Stability are not powerful. In order to avoid the liability to nervous breakdown, rest must exert a controlling effect.

In face b rest is even higher, but so also is Will intensity—utility, Aversion, Destruction and Stability—all urging toward dynamic effort, executive management of an intensive order, and extreme industrial alertness, with stress upon physical endurance. This face has various kinds of ability somewhat opposed to each other in vocational ways, yet in which fortunate vocational selection gave the mentality expression in all three directions. It is a good exercise of counseling judgment rightly to place the vocations in which he was an eminent success.

Large Secrecy:

The normal or large secrecy gives a fair amount of carefulness and various kinds of precaution in regard to the disclosure of one’s plans, intentions, purposes, and of information that may in any way be taken advantage of by another person. It may lead to reticence concerning any idea or expression.
that is not freely open to discussion; it has much of the com-
mercial man's business reserve and discretion. Where Amity
and Sociability are medium or small in size, this disposition
takes on more of the nature of reticence even in matters that
are not ordinarily secret or confidential.

When large secrecy is supported by protection, the dispo-
sition is strongly inclined toward pure evasion of any ex-
pression that can be made use of adversely by any one.

It is the function of this specific to create a general tend-
ency to act with prudence against revealing a matter that is
normally concealed, and in a way to exercise an intuitive or
an inattentive precaution and reserve.

This fairly high rating is not a vocational deterrent under
usual circumstances, though it often limits the friendly ex-
change of information or of one's opinions upon important
affairs.

These secretive purposes of Caution are usually associated
with business relations or with financial necessities; with the
elements of chance or doubt in trade and exchange; with
making contracts; with protecting inventions or discoveries;
with the promotion of industrial enterprises; or with the carry-
ing out of political policies.

Very Large Secrecy:

Very large secrecy is generally not a favorable quantity
unless modified by large Amity, Aspirations, or combinations
of these with large Integrity. When secrecy is extreme in
the mentality, it is usually a deterrent to successful commer-
cial life and business enterprise, because it over-reaches the
mark of normal guardedness. It then awakens a conception,
of distrust as being too exacting, or of fearfulness of some
kind of hidden effort or scheme. There is certain to be a lack
of relative frankness, with implied insincerity and insecurity.
Few men like intentional vagueness or dubious expression in
others.

This volume of secrecy often tends to incite trickery and
misrepresentation, even in common affairs, and the disposi-
tion to make much of little by way of concealment or sug-
gestion. The counselor is warranted in critical judgments
when he finds a surplus of any of these tendencies in a mental
analysis.

In ordinary vocational relations the above described char-
acteristics are often detrimental to smoothly working activi-
ties.
There are many positions of trust where it is loyal and customary to express to one individual, as a fellow workman or employee, what would be a grave breach of trust to express to another whose position or function did not need or demand the information; these are confidences rightly belonging to one person and not to another.

There may be moral obligations that rise above any other reason for secrecy, but which only the exercise of careful thought and discretion under the circumstances can determine. Generally under these conditions all parties to the matter have rights to be consulted before drastic revelations are offered.

**Small Secrecy:**

When this specific is small, it allows ultra-frankness and expression; it is apt to "tell all it knows," as the phrase runs, and to reveal any confidences that the circumstances suggest, not always viciously or with intention of injury, but simply through lack of precaution and guardedness. In its personal relations this state of mind is often shunned by those who discover the disposition to reveal matters that should be or are intended to be confidential. This disposition is generally better liked but not so much trusted by others as is moderate or large secrecy.

By suggesting severely the cultivation of reserve in regard to this voluble habit, particularly in the interest of others and in the class of matters that relate to business and professional success, the counselor may bring about some improvement in the specific. The employment manager often has difficulty with employees who have small secrecy, and many industrial or commercial "leaks" innocently arise from this kind of mentality. There are vocational relations, as in telephone, telegraph, office practice and clerkships, where confidential matters are held to be inviolable, and in which if a lack of public confidence existed heavy commercial penalties would follow.

These are but a few of the special classes of vocations where fairly large secrecy is called for, and where honor and secrecy are mutually essential.

In many forms of production individuals or concerns possess special methods, formulas, means or information that properly belong to them, and it would be apt to result in injury if these were not held secret by those in whose possession they were entrusted. Innocently revealing them would not negate their use by another nor their injurious infringements.
There are many long trails of misery that have arisen from the secretless meddler in the affairs of others, from the needless or vicious chatter of one who wanted to appear smart or cunning, and from the brainless employee who had small conceptions of responsibility.

The Specific Vigilance:
In commercial affairs vigilance has a broad field of activity in which various forms of prudence may be recognized, as, reserve in unwise actions or agreements, the various phases of circumspection in cases where disadvantage may result, the exercise of foresight and skilfulness in preparation for emergencies, or fair precautionary measures in business transactions. The counselor can use these facts in advising a client or employee in whom vigilance is not sufficiently large. Usually the man who gets injured in industry is "an old hand at the work," and so has grown stale in matters of caution; so, often in business, negligence comes with familiarity, unless secrecy and vigilance are in normal size. The careful balance between the extremes of overcaution that hinder accomplishment and freedom of effort, and the opposite, negligence of due care, that so often jeopardizes the efforts of a lifetime, is a matter for the counselor to take up in needed counsel.

When financial vigilance has been held up against a below-medium faculty for a considerable time, it is apt to relax under pressure and meet with a disaster.

Stimulation toward commercial foresight and investigation, toward the avoidance of taking things for granted, toward planning security where it is necessary, and toward thinking out the chances and incidents of natural causes and defects, is the very useful disposition of large vigilance. It should be hitched with foresight and observation.

Operative Vigilance:
Large, or we may say, operative, vigilance is important in many vocations and in the ordinary walks of life, since it responds to the caution signals of the senses and to the actions of the body in performing its tasks. Through the senses of the faculties of Impression, Form, Color and Language, vigilance is informed of dangers to the person, and in turn it stimulates these sense faculties to watchfulness and alertness where there is likelihood of danger.

In mechanics and general industrial vocations vigilance should be slightly above the average of the specifics if there
are moderate reasons for its exercise. In mechanical and in
the farming vocations normal vigilance is extremely valuable
in the prevention of accidents. Approximately forty-five per
cent of accidents arise in the use of hand tools, eight per cent
from falls down ladders, down steps and other falls; seven
per cent arise from burns, five per cent from the unguarded
use of machinery, five per cent from accidental injuries to
the eyes, and four per cent are incident to railroading. Other
accidents arise from many causes, as dust poison, fumes,
sulphuric gas, carbon monoxid, lead poisoning, and other forms
of poisoning; from accidental explosions, humidity, cold,
drowning, etc.

But vigilance should be just as active in the prevention
of unhygienic conditions, thus preventing sickness, depreciated
vitality, loss of mental and physical efficiency, faulty vision
losses, various infections and affections, flat foot, rupture,
lumbago, unhealthy or insufficient foods, and the conditions
and neglect that lead to tuberculosis, dyspepsia, nervous break­
downs, rheumatism and other chronic troubles.

In fact, many of the conditions which induce or conduce to
these accidents and illnesses are within the purview of the
employment manager as well as in that of the individual,
because few people are alert to the beginnings of serious
infringement upon their health, or attentive to the habitual
liabilities to accident, slow forms of injury, or causes of de­
pressed physical conditions.

In a wide range of vocations there are particular liabilities
to injury inherent in the conditions of employment. Generally
these dangers are minimized to avoid the fear of placement
and also to keep them out of the “sphere of consciousness”
in the effort to reduce their hazard. The problem of prevention
is, however, a pertinent one wherever prevention is normally
possible, where reasonable vigilance can ward off trouble.

The subject of mental hygiene is important in its relation
to overwork and extreme tension in various fields of voca­
tional effort, and has been referred to in other lessons. It is,
like the matter of accident prevention, too extensive a sub­
ject to be treated here. Like many accidents and physical
illnesses, a large percentage of these mental troubles that are
within the scope of mental hygiene arise from the circum­
stances and duress of a wrong vocation, and some from a
wrong position or employment relation. Normal vigilance in
the choice of a vocation or a position would be preventive
medicine in many instances.
Very Large Vigilance:

When vigilance is dominant or excessive in the mentality, it is often a deterrent in those vocations in which fear and imagination play important restraining parts, as this condition works against the presence of courage and freedom of action. Because of this kind of restraint, many vocations in the professions, the industries and the trades require that vigilance shall be no more than normal or slightly above the average of the mentality, in order that Caution shall be protective but not a deterrent to mental and physical activities. Some of these vocations we shall notice in following pages.

Very large vigilance often leads to timidity, extreme apprehensions of danger, nervousness, and needless anxiety.

Deficient Vigilance:

Deficient vigilance (unless highly supported by other faculties, and sometimes even then) leads to negligence, to lack of care and exactness in many ways. It is seldom protective to one's own interests or to the interests of others; it is often a source of actionable negligence in industrial activities in lack of use of preventive measures against accidents, or as contributory negligence through expecting others to exercise undue Caution. Small or medium vigilance often shows itself by inattentiveness to surroundings, by lack of ordinary prudence in matters of health, by want of fidelity to the interests of other people, or by failure to take judicious precautions against loss in one's own business.

The Specific Rest, or Sense of Recreation:

The element of Caution not directly associated with industrial danger or with fear is that of rest. This is protective in its purposes through methods of relaxation, tranquillity, or sleep. Sometimes these are urged as preparation against the relaxation from guardedness, or frequently as precautions in favor of health or strength in order to carry on one's daily tasks. When this specific is large it adds mental and bodily tranquillity to the disposition, it aids in the mastery of difficulties, conserves strength and energy for future use, and in emergencies often gives calmness or freedom from fright that allows the exercise of good judgment.
Some Faculty Relations of Caution:

The wide range of Caution influence does not readily admit of close specific preferences in some instances, while the preferences are intensive in others, as illustrated under Attention and Language, where observation, sounds and caution warnings were shown to hold a large place in nearly all animal nature, as well as in human existence. Prudence, watchfulness and fear seem to arise from organic forces and structures, in many cases wholly independent of either experience or information. The easy explanation of "instinct" is somewhat unsatisfactory, unless it is intended to imply organic memory and aversion, both of which necessitate the change of structures and their energies.

The relation of Caution to various forms of fatigue, recreation and rest is an extensive mental relationship, in which faculties subject to anxiety or that influence nutrition or that appreciate success are particularly involved, and to the condition of these the counselor should pay attention. Conditions of mentality working under doubt, anxiety or fear, are extremely wasteful conditions, playing intensively and injuriously upon the mentality and upon nutritive processes.
Vocational Relations of Caution:

The vocational relations of Caution are, as one can readily realize, very widely extended, first, with regard to the welfare of the individual, and, second, with relation to the employee or employer, and also in relation to the matters of law and the state in its function of protection against the illegal and injurious actions of the individual against other individuals.

In the various personal and social relations the individual has cautionary obligations which may not extend to infractions of statute laws, but which form a solid part of honor and good-will. These generally arise from or are guarded by secrecy. They may consist in part of those mutually expressed confidences, ideas or desires, the revelation of which may run all the way from objectionable gossip to commercial injury, or may injuriously concern oneself or another.

Vocational Caution and Casualties:

Notwithstanding the fact that nearly all states now have strict laws regulating factory and many other liabilities by safety standards and devices for the prevention of accidents, caution is always necessary and negligence liable to bring injury of various kinds. The counselor and employment manager should caution a small vigilance man against work where there are unusual liabilities, and to take attentive care in the vicinity of machinery, or other forms of danger.

A man with small vigilance, if other choice is nearly as favorable, should not become a surgeon, zoologist, veterinary, chemist, or pharmacist, among the professions, nor a chauffeur, electrician, sawyer, brakeman, aviator, crane runner, band saw or circular saw operator, a dado or rabbiting machine operator, nor run drop hammers or heavy perforating machines, in the general trades or vocations.

Commercial Caution:

In the business world Caution holds an important place, not alone in its preventing mistakes in matters of record, but also in the survey of the incessant changes and risks of daily financial relations.

Generally in business and executive life problems crowd upon each other with but a minimum of time for each; plans are formulated that carry a great variety of possibilities, both
favorable and unfavorable, and even the more routine or customary transactions have in them sufficient chance or variation to warrant the exercise of judgment. In these customary transactions Caution is most apt to relax, and some one of a thousand disadvantages is taken of one's laxity or carelessness.

The three to four thousand sections in a code of civil procedure are a not very mute evidence of the many incautious actions that may arise to give warrant to executions in actions concerning real or chattel property or injuries to the person.

Executive Caution:

Executives with below medium Caution are rare, though in some instances these executives are successful because surrounded by a staff or other assistants to whom are delegated various precautionary powers. But, in the main, the executive, controller, secretary, cashier, treasurer, auditor, accountant, and chief clerk should have fairly large Caution specifics. The welfare superintendent and the employment manager, from a different viewpoint, should have large Caution; these vocations exercise a guardianship over the health, comfort, success and other means of general happiness of others.

The Merchant's Caution:

The exercise of all the specifics of Caution in a full, steady, dependable way is one of the requirements of the general merchant. In general this is one of the prime keys to his success, because he must avoid nearing the extremes in either direction.

These normal merchant Caution indexes are shown in the faces of the successful retail merchants of Figs. 357 and 359.

The percentage of the merchant's Caution specifics must not be extremely high, neither must they fail through being too low. The prime exercise of his Caution is in regard to his purchases, in relation to his credits and price lists.

Every merchant is urged to buy vastly more than he can possibly sell, both in variety and in quantity. A limit must fall somewhere, a choice be made, and a survey of the probable sales. If a man is not cautious enough to realize these facts and to use reasonable care in regard to them, he will not stay in business long. As he has a necessity to buy, a choice, and an experience with local conditions, the salesman must meet these as the first fact. The salesman should also realize that the merchant is no more apathetic or indifferent to buy-
ing than the salesman is to selling, except that he must himself determine when, where, which, and how much. Caution, judgment, interest, economy, forethought, and some phases of nearly every mental faculty experience enter into every one of these questions. The salesman who, in the dealer's estimation, most ably takes his share in these when, where, which and how much problems of the dealer, sells what the dealer has not yet bought of the supplies he is convinced he needs to answer his selling conditions.

The merchant's resistance in the phases of Caution and Stability is shown in the lettered regions of Fig. 358. An examination of the four successful merchant faces will at once confirm the evenly balanced Caution and Stability, with, of course, other specifics in proportionate power. The noses are not extreme in the other regions enclosed in dotted lines, but are full and strong. These faces cannot be "bumped" into buying; they must think they have their own way, and in fact, rest upon judgment, which from the buyer's viewpoint, is right. In fact, the merchant's mentality is, vocationally, only part buying; it is more largely a selling mentality.

The fact is evident that the merchant's mind is chiefly upon selling, his interest
in selling, his profit in selling. He thinks he can always buy. When he finds that he cannot buy what he wants he is in much more of a panic than the non-selling salesman is. If his shelves are loaded with an over-delayed line of merchandise, he feels it an impudence to be urged to buy more of that line, sometimes so of any line, whether the approaching salesman sold him the over-supply or not.

Quite often it is a duel of wits and sagacity where each side conceals the real situation, and the salesman has no choice of judgment except to drive his sale as hard as he can.

We note these facts because Caution and its support of Economy, with Stability enough to resist the many sided onset of a first class salesman, are constitutional necessities in the mentality of the merchant, in order to exercise due judgment in purchases.

Salesmanship is a distinctive vocation just as much as medicine, law, or merchandising is, and no pretense is made of treating it here, except briefly in the matter of the relation of Caution to the subject.

Salesmen and all other advocates most acutely realize what may be called the focus of resistance, but cannot always realize what or where it is, because every buyer differs in characteristics and ratio of abilities.

One merchant may be influenced by artistic qualities, by greater apparent utility, by lasting qualities, and another merchant in the same town prefer some of a hundred other qualities. His Caution will operate in sympathy with his views of these.

**When Caution is Excessive:**

To be over-cautious makes the merchant too conservative, slow and unprogressive; it gives him a cast of suspiciousness
and of penuriousness that is alike distasteful and uncongenial, as well as being the essence of unaccommodation. Few people enjoy dealing with such a reputation in business. As an eccentricity it adds neither interest nor value. Nor on the other hand does it often give worth-while security in business success.

The salesman should be able to recognize this sign and relative size; he will then realize that over-caution, that is, excess Caution, is often mistaken for indifference or Economy or stinginess, none of which operates in the same way.

Very large Caution is suspicious of quality, standard sizes and dates of delivery. Its disposition is "to be shown," and to delayed judgment and a wide distribution of its kind of purchases. It cannot easily be cajoled into a purchase. The selling pressure usually needs to be steadily cumulative but elastic, and based upon the buyer's own opinion as far as consistent with the sale.

Caution and Economy are quite different in their buying influences. Necessarily the appeal to the very large Caution is, that the action is safe, without risk, and not open to much doubt. The appeal to large Econ-
omy is, that the cost is low, the profit plenty, the sale sure, or other economic reasons. Large Caution is apt to stand for a carefully planned buying limit, while Economy is apt to set at conditions and prices, and when sold, may over-buy.

Caution and Economy are close friends, necessarily, and work together when both are large, or reduce the larger when one is small and the other is not; but a cautious man may not be economical when there is no apparent necessity for the reserved use of funds. The economic man may be reserved but make foolish purchases when convinced that there is no danger; or he may restrict every kind of expenditure, danger or no danger.

Too Low Caution:

A below medium or small faculty of Caution leaves the merchant open to hazard from many directions: over-buying of particular lines, under-care in matters of credit extension in either purchases or sales, lack of consideration in matters of stock display or store care, and a whole series of defects that verge on the "just succeeds" margin of business acumen. These various deterrents put a heavy burden upon other faculties: Economy, Sociability, Defense, Liberty of action, or others,
are taxed to their utmost. As an illustration take faces a and b of Fig. 359 and reduce the Caution specifics.

The Mechanic's Caution:

The mechanic's Caution consists chiefly of the activity of vigilance, by which a very large percentage of his accident hazard is reduced. State laws demand a wide series of hazard and accident protection appliances, conditions, and inspection of points of danger. These protective means, however, cannot cover the dangers of employee negligence, nor of many kinds of employee pure accidents, that is, unforeseen happenings, as in the use of hand and other forms of manipulated tools, the fact of missteps, slips, lack of control, and similar causes, which in the main depend for accident prevention upon personal care and vigilance. When vigilance is small, mechanical protection can only go part way to effective prevention of accidents. Mechanical guards cannot travel with the individual.

Few men are observers of the dangers of their job, particularly when accidents are not frequent. Every workman, foreman and superintendent should be made familiar with what may be called the vocational accident hazard or liability of his job, the particular points of accident in his work. Men with large vigilance, observation, motion-form and Amity should be appointed as safety inspectors, in a committee of inspection of two or three in every large department of an industry where accident liabilities are probable, or prevention necessary; alert men on the job are said to be the best inspectors. Realization of danger spurs Caution, and concern interest arouses reciprocal interest in employees.

The counselor or employment manager should be alert to the small sign of vigilance, and to the obviously clumsy man, to small observation or motion-form, which are nearly as liable; and where both deficiencies exist, should make the vocational placement as nearly accident-fool-proof as possible.

Face a of Fig. 361 has small vigilance and only moderate observation. She would be unobservant or inattentive to machine work casualty liability, although imagination and skill are fairly large.

The per capita of purely industrial accidents of both classes—fatalities, and serious injuries—is smallest in agricultural pursuits, and in general manufacturing where power and machinery are less heavily used. In these occupations fatal accidents average about one in each 3000 each year, and serious injuries one in approximately 240.
In metal mining, coal mining, fisheries, navigation, and among trainmen in steam railway work, the fatalities are between three and four a thousand. Throughout continental United States, serious industrial accidents happen to approximately one employee in 154 each year, and a fatal industrial accident to one in 1400 each year. Many of these are due to the negligence of small vigilance and indifferent observation.

Face b, Fig. 361, that of a first class electrician, has vigilance highly developed, and so has the carpenter, face a of Fig. 362. All phases of Construction, with object-form, motion-form, observation, utility, honor and justice are also large in this face. This would make him a good inspector of safety in a woodworking plant. His large Amity and fairly large Aspirations would give him a personal interest in precautionary measures.

In Fig. 362, face b, Caution, Industry and Integrity are all quite large, along with considerable superintending abilities. This is a first-class machine shop foreman, genially alert to all the safety means and instruction consistent with his shop practice.

Face a, Fig. 363, is that of an Igorote—a tribe too lacking in intellectual activity, or industry, or business sagacity, to care to exert themselves to
provide fruits, nuts, or even game for the less fruitful season. This face is rather a high-class specimen of the tribe.

The slanting forehead, projecting at the brows, indicates Form and Color as the dominant Intellect faculties. The forehead is narrow, and the analysis line gives extremely small Number and Language. Memory rises slightly, and the end of the nose, small and short, somewhat ape-like, holds Reason and Inspiration small. The wing of the nose, however, is quite full and high, and imagination and skill rise almost level with Color, pride, love of power, and Laudation. The regions of Integrity, Liberty and Industry are hollow, indicating that these abilities are small. The malar bone and zygoma are wide on their upper surfaces, apparently flaring out to a sharp edge. Caution is markedly dominant over every other faculty except Form. This Caution is more vigilant than secretive; it responds more quickly to sight, and gives the alertness of an aborigine—particularly motion-form alertness—but the small end of the nose indicates the lack of permanent observation memory or of intense scrutiny.

The student may wonder why this face, aside from its illustration of Caution, is included here. But thousands of the lower grade employees verge so closely upon this low
order mentality as to be subject to the question of employment. The watchman, herder, wood-chopper, logman, and similar jobs, requiring vigilance, keen sight, some Industry and Stability, with enough skill and imagination to understand ordinary working conditions without thorough mechanics or trade skill; truck loading, some kinds of longshoreman jobs under direct supervision; mining, where Caution, but not constant observation alertness, is required: all of these are nearly possible to this topographic line. But any stress of common mental arithmetic, of memorandum or record making, of detail memory, is quite out of the question.

But a more vital defect is found in the Aspirations, from their low restraining power, and in the small Stability, Integrity, Liberty and Economy, that cannot act as controlling Will faculties, but leave the passions, and Aversion and Destruction, in unchallenged control.

Turning our attention to face b, which we have modified slightly at a few specifics, we find a remarkable change in vocational usefulness and personal security.

Increased Reason adds much to the amount of intelligence actual and potential in the face; added Attention, Memory and Defense give common life certainty to vocational aptitudes, no so much changing the kind of vocations as in making them understandable and desired by the man. Fifteen per cent more Inspiration humanizes the character, and the change in Number rating places common calculations in the list of possibilities.

If the place of the ear in face b were set back as shown in the illustration, much of the Will region would fall in size from fifteen to twenty per cent, and the ability to follow several routine trades would instantly be seen, as some kinds of engraving, moulding and machine work. In fact, the face could then, with fair quality, be rated as capable in several perceptive arts.

Fig. 364 is included in this lesson as a study in locating the subfaculties thus far studied, by writing their two-letter symbols upon the focuses of the regions, and if practical, writing the percentage quantity by the specific, or subfaculty sign. The self-locating of symbols and measuring of sizes is the best means of remembering and mastering the regions. The faculties and their specifics' symbols are included in neighborly relations to the regions. The art of locating and reading the quantity of the specifics is the first consideration; that of
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FIG. 365
judging vocational aptitude and fitness, and of suggesting means and methods of improvement, will readily follow.

In Fig. 365 two faces and the analysis blank are given as another exercise in analysis and rating. It is suggested that this table be filled in by lead pencil, either of one or both faces, comparing region by region, on the basis of forty per cent variation. Projections of the face as shown by the shadows will soon be as clearly measured as are the profile contours.

The three faces of Fig. 367 have Caution as the dominant.

In face a the faculty region is broad and widens the upper cheek. In this face all phases of Caution are large and the supporting regions of Industry and of Liberty are also large. In this support the cheek seems heavy, full, and well banked up to the base of the nose.

If granted fine quality, the high mental graphic line at Construction, Number, Attention, Memory and Reason, supported by the powerful Liberty, Industry and Caution, with some of the other executive faculties fairly strong, distinguishes this mentality as that of an executive and capable business man, the whole mentality much inclined toward heavy construction. It is noticeable that the line falls somewhat at Culture and the Aspirations; it rises at Dignity and Stability and falls again at the equity element of Integrity, though the elements of justice and honor are stronger.
The mental graphic line of face c closely parallels, in the perceptive and retentive abilities, the line of face a; at Inspiration and Reason it falls below the line of face a. The line gradually rises from the friendly abilities and becomes highly dominant at Caution, Economy, Industry and Liberty; the prominence of the executives is noticeable and holds the rest of the evenly balanced line approximately twenty per cent below the strength of the dominant.

This is the face of a cautious, persistent, social, and highly organized banker. He is radical only in matters that can be weighed and judged from acceptable data. Like many others of the new Japanese commercial men, he is quick to investigate possibilities in enterprise, but not hasty in beginning a course of action. Raised in an inherited commercial atmosphere and in an enterprise that had the impetus of years of experience back of it, this face needed the abilities that preserved its power rather than those that instituted new industries.

Fig. 368 gives outlines of several ratios of the faculty of Caution.

Face a has a large region of Caution outlined by the dotted lines. This is a dominant Caution in a powerful face; the face is broad through the zygomas, through the side, and the angle of the mandible. It is the face of a hard-headed business man. When compared with face e, it indicates at a glance the great difference, not only in the degrees of Caution, but also in the degrees of dynamic executive powers and methods.

Face b is a strong face with quite large Caution. The mandible is strong and firm, the side of the face below Caution is rather hollow, but its deficiencies in the lower part of the hollow are, from the commercial and executive view-point, partly made up by the powerful nose and the solid persistence of the chin.

In face d the bridge of the nose is relatively weak, the side of the cheek is full and somewhat impulsive when crossed, or dogmatic when the Intellect has decided on a view; the mandible is fairly wide but not long, nor is it low at the angle; compared with these regions, Caution is relatively strong. The large end of the nose, the low-hanging septum, the high alae, and the full though not dominant brows, uphold the tradition of a broad forehead—fair Number, large Language, large Reason and Construction, and much Sociability. These ratios of mental regions indicate that this mentality must carry out its executive efforts with its Intellect or not at all.
Face f has moderate Caution as a whole; it is vigilant but not secretive; it does not wear itself out thoughtlessly, as is shown by the large backward end of the region. The mandible hangs very low, indicating large Stability and Mobility, though not intense perseverance in matters requiring many repetitions to reach perfection.
The Regional Influence and Products of Economy
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HOLMES W. MERTON
MERTON COURSE
in
Vocational Counseling and Employee Selection
THE ART OF JUDGING PEOPLE
LESSON TWENTY-FIVE
The Regional Influence and Products of Economy

Location of Economy Influences:

Economy influences are located above the valley of the wings of the nose, and run upward and toward the cheek, thus lying along the base of the bridge of the nose and blending its contours with the cheek.

Its relative volume is shown by the fullness of its region, especially at its margin along the base of the nose. When Economy is very large, the bridge seems to rise from a broad base of the cheek where Economy forms a foothill to the nose, a foot-hill sweeping up from the upper end of Dignity and the forward end of the region of Caution.

Economy thus margins along imagination, just above the valley of the wing of the nose, and blends with protection and self-defense toward the crest of the nose, and with secrecy and pride along the cheek.

Its regions are not so easily illustrated as many of the other specific regions, but no great difficulty is experienced in reading its percentages of power.
Fig. 369 is the face of an expert economist in a wide range of household manufactures, distribution problems and merchandising, from the viewpoint of the consumer and direct marketman.

Imagination is not relatively high enough to give him the sales manager and merchandising commercial vision required in the selling side of commercial management. The face has enormous ability in the memory of quantities and statistics, in the legal latitudes of interstate and state laws, and has sagacity in economic qualities and methods. Note the bank of economic stress and valuations in the foot-hills of the nose.

In many faces the valley around the upper margin of the wings of the nose is very shallow, hardly marked enough to be traceable, and in such cases the lower boundary of Economy, as well as its upper and cheek boundaries, must be judged by the general curves of the nose and cheek regions. This close blending of Economy with imagination usually is marked by a gradual hollow extending from the parenthesis around the wing of the nose without the deep curved valley. This is illustrated by Fig. 370. The region of Economy fulls up from the wing of the nose and from the cheek almost without the curve sag of a valley on any side. This highly English face is that of one of the greatest Canadian controllers and railroad financial administrators.

The General Nature of Economy:

Economy is that faculty of the Wealth Function that instigates and sustains the various purposes usually understood as the meaning of that word, although its influence upon the
mentality in common experience is seldom realized. To many people economy means an extra effort in saving or restraint in expenditure, a disposition in excess or below the normal habit of use of means.

In its full sense Economy is the defensive faculty that results in preparation for the necessities of the future, the accumulation of means against want, and care for the properties that aid in the reproduction of human needs. As one of the faculties of Defense it is within the organic range of the animal mentality, answering there as the prophetic purpose in saving food or other useful products for the animal's future needs, though neglectful when the environment normally supplies the required conditions and does not stimulate the specifics of the faculty.

In child-life Economy generally becomes imitatively and organically active about the fifth to the seventh year, when the majority of children are not generous. It is no evidence that the child will be either economical or penurious as it grows older, when the polar faculties come into more intensive activity, and, in fact, often go to the other extreme, improvidence and prodigality becoming economic carelessness.

The disposition of the child is usually that of an individualist business man, wanting his undivided ownership. Curiosity, the spirit of inquiry, the desire for change, often make the child destructive, rather than any absence of economic impulse.

It often occurs that the adult is extremely close and "hard in a bargain," but generous in the use of funds. The presence of a powerful Economy and strong Defense operate in this disposition in the process of impersonal interest and gain, but relax in favor of Amity, Sociability, and the Aspirations in the use of the gain.

The Specific Ownership; Proprietary Right:

The specific ownership (propriety) is located above foresight along the side of the nose and obliquely forward from the region of imagination. It does not reach the ridge of the nose, as that is influenced by an associate faculty of Economy, namely, Defense. Ownership, or propriety, is quite clearly judged by the mass of the side of the nose in its region, even though it has no projecting contours, as in the regions of the bridge and septum of the nose, the brows, jaw and chin.

In Fig. 371, face a, this region is large, ranking almost a
dominant. In face b the region is about medium, ranking much below the end of the nose and some of the other regions.

The specific propriety gives the disposition toward ownership and the accumulation of property. It seeks security from want just as vigilance seeks security from injury. It instigates appraisements of properties and of products it is interested in, and gives the sense of trade values or the impulse to see that these are favorable to itself.

Ownership, or propriety, is more awake to use than it is to saving, except in so far as saving may increase the extent of means for use. Thus many people are economical in guarding their capital as principal, but are free in the expenditure of their income.

Propriety leaves the careful saving of means to its associate specifics, frugality and selfishness. The activities of trade, buying, selling, profiting, the accumulation of stock and goodwill, the keeping up of repairs and real estate as bases of industry, are all the special work of propriety in their economical relations.

Very Large Ownership:

In Fig. 372, face a has very large Economy; owner-
ship is demanding, intensive and cautionary; frugality is maximum, needlessly so in the presence of so much Caution, Defense, Dignity and hardihood. The face is that of a financier quite celebrated for his frugality and his careful investments.

There are many instances where very large dominant Economy, with frugality and selfishness at the maximum line, have succeeded in general business, or in the industrial world, as well as in the business of the pawnbroker. But these successes are not frequent in any broad field, and are generally found in the small store, in the use of small capital, and where promotion is not dependent upon a wide commercial vision.

Large Ownership:

Large ownership, generally from 88 to 95 per cent of the dominant, is commercial ownership. It ranks among the vocational specifics in percentages of this size. This size, the counselor or the employment manager will realize, does not act as a hard restricting faculty in the extension of an enterprise.

Large ownership is prudent rather than grasping; its aim is to keep the intellect aware of the “state of the treasury.”

The possession of what one deems a fair security
against adversity or the chances of health or business conditions, is a means of preventing breakdowns under those conditions. The hazard of no means of consequence is a much more frequent cause of mental and physical breakdown than is generally supposed to be the fact.

Face b of Fig. 372 is another financier and stock broker, as speculative and game as face a is conservative. Caution is smaller; Aversion, Destruction and Liberty are larger; Stability has heaviness; the vigor of the mentality and the body are apparent. In this face ownership is fairly large, and frugality and selfishness are moderately large, though having but "little to say" among the other large specifics.

Ownership should be large enough to act as a supporting faculty but not as a restraining one. This large ownership with frugality and selfishness secondary, can be modified or wisely directed by the more benevolent or cultural faculties, and its expression represent the better form of financial and commercial habits: the avoidance of waste, jeopardy, or commercial hazard; the supervising attention to the best processes of production; the cautious and calculated provision against emergency or unexpected reactions from financial or natural conditions.

This kind of Economy usually increases the individual's natural aptitude in judging values, in understanding the probable course of events, and in organizing the practical means of accomplishment. For these reasons the vocational counselor will appreciate the quality of Economy, not only in its bearing upon the personal and economic disposition of the individual, but also upon the various interests related to the vocational problem.

Moderate Ownership:

Moderate propriety, or ownership, ranging from 80 to 90 per cent of the dominant, with frugality and selfishness no larger, may only demand that fairly wise provision shall be made for the future; that one shall not skimp and defeat the common comforts of life even to provide against want or emergencies of health, or of unwise or unfortunate changes.

It may leave one to the generous use of one's income or time or energies; it may simply demand effort to keep up a normal flow of success, or charge the mentality with a species of part saving or percentage gain in commercial life. Normal
Economy may struggle to gain what is requisite, or for simpler forms of plentifullness, and then never urge beyond these conditions.

Generally a man with such moderate Economy should not take up a vocation where there exists the need of economic foresight and guardedness—such vocations as trusteeships, treasury control, production management, and others readily suggested by the fact of such incessant supervision of expenditures.

In many instances coming under our observation, partners in firms or officers in corporations having such moderate Economy have been driven by their distaste for its more than moderate exercise into turning their positions over to others and taking the more promotive side of the enterprise, a function where the economic stress was met rather than upheld.

We shall see that large frugality or large selfishness does not serve the mentality purposes of large propriety of Economy or of large equity of integrity in the management of business or of an industry. These, frugality and selfishness, may save the results, but do not promote the conditions of success in its larger forms.
Small Economy:

Small Economy, unless highly supported by a powerful directive Intellect, or by a powerful higher range of the Will—as Industry, Integrity, Stability and Laudation—is apt to lead to prodigality, indigence, wastefulness, indolence, and industrial apathy.

Small Economy often makes a man with a brilliant Intellect wholly indifferent to matters of financial values, leads him rather to shun questions or contests for economic advancement, or to make a choice of the sacrifice of possible wealth gain in favor of the possession of some form of non-commercial culture.

Often intelligent people with small Economy, but thoughtful of its necessity, save methodically until swept off their economic feet by some glistening prospect, and forfeit the whole in a lump.

Small ownership (propriety) is often found in teachers and in clerical positions, where there are normal tastes and desires, often cultural, humanitarian, esthetic or other similar intellectual incentives that hold the individual at the vocation, notwithstanding the fact that other fields may yield much greater economic returns. The absence of large hardihood, independence, or Aversion and De-
construction or the absence of large *Defense*, may act as a restraint from attempting to break away from the relatively lower salaried vocations.

Great numbers of unaggressive and uneconomic people gravitate toward civil service positions, where they feel the sense of security, the absence of chance and contest, or entertain the hope of gradual promotion. The counselor may frequently need to recommend such positions; he may realize the presence of intellectual ability of a routine, persistent order, and the absence of the spirit of contest and self-protection.

Study the faces of Fig. 374. These are intelligent faces, capable of holding responsible positions. Face a has large *Number, Form, Memory* and *synthesis*; but all specifics of *Economy* are small, *Caution* only moderate, *Defense* below the average of the faculties, *Amity* and the Aspirations fairly large, *Stability, Industry* and *Liberty* in moderate volume, with *pride* and *love of power* small. What is there in this face that can compel it to make a running contest with competitive promotions?

Face b has more power, but the vocational specifics are not highly organized for specialty work or an intensive series of progressive steps.

Face c has much broader opportunities in *analysis, Language, Number* and *imagination* combinations; *Caution* is large, *Economy* medium, *pride, equity*, the Aspirations and the Culture faculties below the average of the mentality. The problem of accountancy, statistical analysis, and various forms of recording, is one for the counselor or employment manager. *Skilfulness* and executive powers are too small for shop practice or superintendence of technical production.

Faces a and b, having *Construction, Form* and *Attention* large, might learn trades, but their modeling is evidence of fairly fine quality; good educations are evident, and there are faculty specifics that would combat the idea of journeyman trades in general.

Perhaps the vocational student will see in these faces, as well as in the faces of Fig. 373, a fruitful source of local railroad agents, express agents, and similar vocations, where *Economy* is not so much a vocational factor, or where executive ability is not needed to an extent beyond getting done the transient work of the day, though where mental accuracy, interest, carefulness of system and a fair amount of congeniality are required.
The Specific Frugality:

This is the uppermost of the three specifics, resting between secrecy on the cheek and protection in the crest of the nose. The specific frugality gives the disposition toward carefulness in expenditure, in preventing wastefulness, in watching the “small economic leaks,” and, in general, leans toward saving and amassing property or means by methods of utilizing all of the means or materials in one’s control. It has the elements of economic prudence and financial provision against emergencies and liability to a state of want.

Very Large Frugality:

Fig. 375, face a, has very large frugality. This inclines one to be what the Scotchman calls “near.” It is the force at work in penuriousness, stinginess, and impecuniosity. The miser usually is compelled by frugality rather than by actual care or interest in property, having the greatest indifference toward the earning capacity of his savings or means or property, but begrudging every cent spent upon himself or anyone else. He wastes a dollar’s worth of time to save a dime, and goes hungry rather than take chances with industry or work. In matters of ap-
pearance, dress and self-care, large or extreme frugality is apt to act adversely. It inclines one to excuse negligence in appearance and in accomplishment, carrying one to the other extreme from gaudy display and extravagance in attire or in self-gratification.

This specific frequently appears very marked in the individual business man and in the professional man, and, in a cautionary way, in people of small fixed salaries or incomes it is often a necessity or enforced habit. But even this disposition may easily become short-sightedness, and the waste of time and opportunity, and the excessive pride or timidity result in a stringency that is avoidable.

In these instances the habit is apt to excite ridicule and the epithet of stinginess; it seldom pays compensations for its losses in other directions.

In individual members of a concern, this disposition is generally neutralized by the attitude of other members of the concern. On the part of the salary list, however, there is often a decided detrimental effect where large frugality is allowed to govern the policy.

Small Frugality:

Small frugality (see Fig. 375, face b), especially when ownership is but medium or smaller, is often an adverse size, leading to a disposition of wastefulness from careless prodigality, negligence in protecting property or means, and a lack of habits of a cautionary nature. Small frugality is generally more personal than it is vocational, except in matters of appearance.

The Specific Selfishness:

The influence of economic selfishness is in the lower corner of the region of Economy, blending largely with pride below and with secrecy backward.

Selfishness is a specific of Economy because its stress is toward gaining and using means for personal benefit, not merely for the success of enterprise nor the saving of product, but in order to enjoy, wisely or unwisely, the results of one's own interest. It has in it the individualistic intentions. Though unfortunate as a term that implies all that a self can want or exert in purpose, its general meaning is in essence as here used and as described in other pages.
There are origins of selfishness often arising from the deficiency of the Culture faculties or of the Aspirations, that are not forms of financial or economic selfishness. These other kinds are of a wide order, some of them thoughtless and unfeeling, some of them a premeditated intention to get the best of everything from friend or foe, and often grown into a habit or series of habits that are not self-admitted. We see such selfishness cropping out in people who monopolize conversation, who take the best seat in a conveyance, who find the easiest way through a crowd at others’ expense, who ignore others’ rights in a hundred ways. In the family life such selfish forms and habits demand that everyone else yield in matters of pleasurable preference—in foods, in recreation, in forms of comfort—and similar desires. There is often given as an excuse some imaginary reason—“So sensitive, you know,” or subject to colds, poor digestion, nervous headaches, delicate constitution, or even the fact of belonging to an aristocratic family.

Selfishness is economic of energy as well as of the use of means or property. It is self-gratifying, not always saving, sometimes compelling indulgence for oneself, either in waste time, or for pleasure or control. In any direction it may be either personal or impersonal; it may simulate self-protection or ambition.

Large selfishness often expresses its nature by self-complacency and other forms of evading effort and of placing the load of responsibility upon others.

Up to a fair volume selfishness is a normal mode of gaining what one needs, of avoiding effort wasted on others, of claiming what is one’s own, and to an extent stimulating saving or reserves.

Dominant Selfishness:

Dominant or very large selfishness is shown by the accented and raised ridge and fullness of the upper end of the parenthesis body, above that end forming a bank at the base of the nose sometimes very wide from side to side, and bowing the valley between the nose and the cheek somewhat toward the focus of secrecy. Dominant selfishness is shown in Fig. 375, face c.

As a very large or dominant selfishness is generally a vocational and social deterrent, the counselor or the employment manager should carefully observe its size and its relationship
with other large specifics. Some of these may reduce the bad actions and others support them, as, when large aggression acts with very large selfishness, the result is very apt to be a grasping avariciousness, or, with Caution large, stinginess and other forms of miserly meanness; with display large, the tendency is toward over-exactions in matters of dress or of social conduct. In vocational relations this disposition generally demands the best materials, opportunity, and conveniences, without any consideration for another's rights or position. The presence of a constant "grouch" is to be expected, and trouble in all teamwork, with such an individual. A flat accusation of selfishness and overbearing demeanor generally results in retaliation if opportunity presents itself.

Face a, Fig. 375, is that of an exceedingly unselfish surgeon. Note the thin high nose, the strong wings, the broad vigilance, the sincere and controlled Aspirations. The side cheek is not quite hard enough to withstand the nerve strain of frequent operations unless upheld by the Aspirations. While this face is unselfish of its time, skill, and opportunity, not inclined to collect professional fees with any set determination, nor to profit greatly by its uncommon skilfulness (see Construction, Form, observation, intuition, mental-focus, and the firm jaw, adding to dexterity), it is careful of expenditures and inclined to self-restriction in the use of means, and other faculties than Economy must enforce self-care and investments.
Vocational Relations of Economy:

The proportion of the specifics of Economy to the vocational dominant depends very much upon the nature of the vocation, the opportunity for direct saving and economic handling, and upon the problem of whether the economic value is in production or salvage or in conservative plans and investment.

The counselor must carefully consider the circumstances of the economic use. What is an almost fatal ratio of Economy in one circumstance or vocation is often a necessity in another. The cast of some of these differences will be surveyed in this study, although an extensive treatment cannot and perhaps need not be given. Many of these differences have been mentioned or suggested under other specifics and the organization of industries or needs of professions.

In the treatment of Small Economy as a whole faculty, we purposely omitted some of its phases in order to treat it more concisely under this topic and bring it to the particular attention of the employment manager, comprehending in that term those who do the employing and promoting of employees. The statement in the prospectus of this course that it is intended, in the industries, for the use of executives, employment managers, superintendents, welfare workers and foremen, is implied in its various uses.

The man with small Economy may be honestly economic and careful through a sense of honesty and justice in so far as he can see these, or attentively recognize the opportunity. But that is one crux of the matter of Economy; the economic man realizes the place, fact, time and means, when the intelligent non-economic man cannot even detect the opportunity.
He is blinder to economic fact than the non-musical man is unconscious of the absence of harmony in music, because in the latter instance the music imposes itself upon the unmusical man’s ears, but economic opportunity does not impose itself upon the uneconomic man; his mentality unconsciously inhibits this kind of attentiveness. In this manner, as in all low specifics of the Will, the will to do is not present, operative and productive.

The mental philosopher can become optimistically enthusiastic over raising these low-power faculties, but just as he himself glides placidly over his own deficiencies, so the small-economy practicing mechanic, agent, workman, or whatnot, slides gracefully over any one or more of the thousand opportunities to save time, material, worry, inspection, needless direction, broken gang work, accident liability, fellow-servant inconvenience, good-will problems, and the many almost unavoidable savings or benefits that form the circumstances of his position. We do not mean that these are always neglected or uncared for or dishonestly or indifferently let to pass. But we do mean that a great many do pass, do happen, that are as easily preventable as they are escapable or glided over.

Other causes for loss may be at work in the individual in the absence of the economic cause; the object of this whole work proves that fact, as illustrated by an inadequate object-form, or observation, or analysis, or other specific needed in a particular vocation, or of the supporting specifics to those dominants, as would generally be the case with those of Economy or Industry, etc.

But Economy of a reasonable size is the most constant cause of prevention of these wastes or minuses, as Economy below the required size is a most prolific cause of them.

Other faculties being right for another place, the man with
small sense of property waste and economic value should not be given a position where wastes of any savable kind are not readily observable or in some other way preventable. The current theme—always current in quality if not in quantity—that there is, lately, but little opportunity for choice of employees, does not hold good with the Merton Method. There is always a necessity for the best possible placement of all employees. The fewer there are in the surplus crowd, the more exacting should be the adaptability and natural aptitude of the men hired, the more certainty of the bad willfulness of the men fired, and the keener selection of the right vocational adaptability of the men being trained for a particular or de­markable vocation or line of work. One of the smallest, most inept looking men we ever knew was the best tree planter we ever knew, the best of several hundred men, because he had a genius for digging tree holes and planting trees.

If a man cannot sense economic values in any other than a commonly familiar form, he cannot exercise economic sense in them—or at least is slow to observe the opportunity,—and is often just as indifferent to their value to himself as he is to their value to his employer. Glossing over the facts by impotent generalities does not change the facts nor eradicate the subject nor the disposition. The employer has a right to the judgment of economic blindness in an employee if he can determine it, just as he has a right to know whether an employee is preferably honest or cautiously dishonest. On the other hand the employee should not be expected to exercise an economic stress, when it is a stress under normal conditions, for which he is not compensated or that is not within the customary, the implied, result of his employment, or the common practice of his vocation. The disposition on both sides should be equitable, just as competence should be found in both or expected in either when indicated.

Economics and Foremanship:

We named the foreman last in the general order of super­vision, but he is by no means the least important in the matter of economic administration. In fact, he is generally the nearest in point of observation, the nearest power in the fact of waste prevention, and the most likely to be able agreeably and generously to influence the men who have economic or uneconomic use of tools, machines, materials, or each other’s time. The foremen, being closest to the point of production,
can become, if they desire, the master hands at economic saving, direction, and conservation. In many instances they are vitally interested in the welfare and the success of the men under them, their chief aid in problems that trouble them, the harmonizer of their united efforts when working in groups, and the vocational joint between shifts or gang successions.

We have always held that the foremen of a producing industry are its most vital point in both economics and employment turnover. As the most numerous force in supervision, nothing can be carried very far without the intimate knowledge of the foremen, and their knowledge of the relations of the work in hand to the general scheme of production extends from the bottom upward a considerable distance, if not to the top. Their very nearness to the working force places them where the various personal dissatisfactions are most numerous and probably hardest to handle.

The foremen have the nearest view of the men at work, generally the heavy body of the producing force. They are in a position to study the individual men at close range and with plenty of time, thus they have many advantages not possessed by the employment manager, and should work closely with the employment department, particularly in the matters of placement and promotion, trade or job education.

The foremen as well as the superintendents and employment manager should have a working knowledge of this art of understanding the aptitudes and dispositions of those under them. The foreman who develops the best working force stands the best chance of being promoted, because the high development of his men is the biggest economic factor in his industry. This development of his men does not mean that he drives them to harder work, but to easier and better work, less waste of their energy and materials, better adaptability to the particular kinds of jobs, and, all in all, institutes a more smoothly running shop or division.

Any foolish jealousy of prerogatives and vocational rights does not enter into this matter. None of these rights are infringed upon by the ability of the foreman or the shop executive to understand the dispositions and potential ability, the possibilities of their men. Saving themselves worry and trouble, and their men worry and trouble, is worth considerable effort.

The Merton Method advocates the self-confidence of the man at the bench or the wheel as solidly as it does the self-
Confidence and control of the man in the executive chair; it is a matter of division of functions and of power; neither one will go far without the other. Each position, from the ground up, has its own economic problems and possibilities, and the large ones at the top are far more clearly seen, generally more easily handled, than the thousands of small economic problems and easy possibilities of gain or of loss around the ground works, around the places where the foremen and shop executives are familiar and in power.

On the first intimation that the foremen and shop executives should study the Merton Method, they will generally shun the idea as being an added burden of information, and take the position that they know what kind of men they want, that they "can tell by their work" all they want to know, that "the men will not stand for it." A little experience, however, in what the art can do will generally change their minds on every objection.

The Economy of Business:

The economics of business is a common theme, treated fully and sagaciously by many men of experience. We do not presume to enlarge upon this from any other direction than the particular relations of this course.

What has been said of the lack of economic purpose and capability of the employee who has but medium or less Economy applies in a broader sense to the man in business under the same deficiency of Economy specifics. With such a man other abilities of decided advantage must make up for the deficiency in economic responsiveness.

Warned by the counselor he may add an alertness of observation, an increase of Caution, an aggressiveness of purpose or activity, or in some other way partially retrieve the loss through deficient Economy. The absence of Economy is often partly provided for by the conditions of a partnership, where some other member of the firm acts as the precautionary economic monitor; or by the choice and advice of an employee who possesses large Economy and exercises it for the benefit of his principal and, incidentally, for himself.

Many professional men have secretaries part of whose duties is the guardianship of economic relations. To the great majority of the men and women the limits of their income is the moderating boundary of their Economy exertions; some form of compulsory saving is their final economic background.
Economy in the Professions:

Economy in the professions, including in many instances the economics of the individual of a professional order or class in the industries, as the mechanical engineer, industrial chemist, statistical analyst, and a hundred or more other vocations which the industries have drawn from the professional world, is a matter of much concern to the counselor and personnel manager. It would seem at first thought that the matter was settled by the fact of salary rate, and no longer concerned the employer. Experience proves, however, that these professional employees have heavy economic problems from the viewpoint of the industry in which they are engaged, as well as from the viewpoint of their own economic problems.

The tendency of the highly technical mentality to drift away from, or to ignore, or to give but incidental thought to the matter of economy and the economics of his work, is strongly marked. This tendency is often depressing enough to vocational value to defeat otherwise merited success.

Expert information and service has in it the possibility of great economic value. This is particularly true of the service of one who has sensibility to the utility of his plans, methods, or products, and to the commercial production of those products, or the mechanical accomplishment of those plans. The predominance of the Intellect in the class of reflective vocations generally detracts both energy and attention from the dynamic faculties, thus holding at bay the economic and other executive faculties, obscuring the commercial, the financial, and the generally protective impulses and purposes. Things that relate to these purposes and are supposed to be recognized by the intellectual employee interested in the business world, may need to be broached and critically considered.

The counselor is, under these conditions, warranted in making a careful estimate of these matters, in inquiring concerning the attitude of the individual, and the responsiveness to the economic opportunities and interest of such employees. The perfection of a single action may be carried to such an extent that it is highly wasteful; if the result is the perfection of a process that is to be repeated many times, the effort given to it may be highly compensating.

In private practice many professional men are negligent of the effect of their medium or small Economy, both in the matter of the accumulation of means for solid property or other forms of income producing investment. Annual expenses are
made to increase as fast as salary or income increases, and, save for the life insurance security investment, funds are seldom accumulated to an amount that seems of consequence.

Negligence or indifference to economic foresight in private professional practice concerns the individual, but in the employment field the tonicity of production and of the salary basis is much dependent upon the right exercise of the faculty of Economy. The general fact that money at compound interest accumulates considerably faster than either salary or real property increases, is lost sight of by the great majority of technically educated and professional men.

Immediate Gain and Blind Alleys:

The dogmatic shortsightedness of many parents in compelling their children to take an occupation before the children have gained a really useful education, and in neglecting to make a careful survey of the vocational field in which their children begin a life-work, is, perhaps, not so much the presence of Economy as it is lack of good sense. Indifference to the welfare of others often shows itself in the family, and frequently an excessive Economy drives the children into wage earning before a fair education is reached. But, it is often the youth himself that fights the high school or the college course, and drifts into a wage earning blind alley, or, handicapped by only lower educational grades, has a rough road ahead.

It is not so much that the bright boy or girl cannot get ahead without the high school or higher education, as it is that these shorten the time of advancement and are economic values, whether in the trades or the industries proper.

Economy, and its Control or Stimulation:

In Fig. 378 we have the face of an expert in economic vision and control. The specific ownership (propriety) is near the dominant line, supported by a fairly large frugality and a less amount of selfishness. The main supports of this faculty of Economy and the modifying or temporizing faculties are left for the student's rating. Carefully study and rate the specifics of this face. Note what effect the specifics of Construction, Reason, Integrity, and Industry, and the Aspirations, may have upon Economy; note whether, if these oppose the extreme effect of the Economy specifics, they defeat its
action or simply control the result of its action; or whether, if these support and stimulate Economy, they have the power to make this man avaricious, stingy, or selfish.

The strong face of Fig. 379 has the specifics of the faculties located near their focal points, but not the broad boundaries of the faculties. The student should locate the dominant, and rate the other specifics as far as yet studied. It is good practice to draw in the blended boundaries of the faculties. After rating the specifics and finding their order of predominance, a vocational choice should be made, although this face has several powerful combinations. In fact, the face was chosen because it possessed an extreme number of high-power, closely balanced aptitudes. It illustrates the fact that a mentality with many evenly balanced strong subfaculties, high quality and culture, excludes a great number of vocational possibilities and needs just as careful equations as does the more specialized mentality.

Chart of Faces:

Face a, Fig. 380, is that of an executive in which several medium executive faculties require the support of other larger faculties. In this face Economy is seen to be large; the base of the nose is wide; it fills the region above Construction; it rounds full to the margin of the ridge of a high nose. The region of Caution is quite full, as is Dignity in its pride and love of power regions, and Industry in its intensity region. From these quite full regions Economy rises full. The region of honor and justice in Integrity is full, but the lower region of the sense of equity and property rights is much smaller. The region of Stability is slightly below the average of the mentality, so are Laudation, Hope, Reform and Sociability.

In this face a, Caution, Dignity, Industry (with the Impulsions and the high nose we have not yet studied), must join the fairly long Intellect with its analytical Reason and good Number faculties to create the executive disposition. In some ratios it is as much political as it is executive.

Face b, Fig. 380, reverses the ratios of several of the faculties. The forehead is the same as in face a, consequently the end of the nose is the same. The ridge of the nose is the same, the chin nearly the same, but slightly more persistent. Stability is somewhat larger than in face a, thus adding the element of perseverance, and to the ability of the high nose.
But, the region of Economy is quite hollow in proportion; the secrecy of Caution is much reduced; the pride of Dignity, the upper regions of Integrity, and the central regions of the cheek are also reduced below the average of the mentality. Stability, the hardihood of Industry, and the equity of Integrity are compelled to attempt to make up the power possessed by face a, but this is greatly different from the power they replace, and this face cannot do the same kind of executive work done by face a.

Face c is a powerful executive face. In this face Economy is much above the average of the mentality; part of Caution, parts of the regions of Dignity, Integrity, the Impulsion faculties, and Liberty are the low regions. The greater part of the face has closely ranged faculties with particularly large Form, Attention and Number.

Face d has small Economy; this one small faculty is seen to weaken the whole face in its executive relations. The secrecy element of Caution, the justice and honor regions of Integrity, Industry and the perseverance of Stability are a fair average of the face and do not so markedly appear to depress its power, though in fact they do depress it greatly, because of the absence of definite strength-points in the sub-faculties.

In face e Economy, the secrecy of Caution, Industry, and the region of honor of Integrity are larger than in face d, but the region of the ridge of the nose is small and takes away part of the executive ability.

In the two faces d and e the contours of the forehead, brows, and end of the nose are nearly alike, yet the deep drop of the nose ridge of face e apparently retracts the length of the nose and diminishes the power of the whole face.

In Fig. 381, face a is a drawing of James J. Hill after a bust by Finn J. Frolich.

This face is a wonderful study in vocational aptitude and character. The nose is fascinating in its expression of mentality. Its whole region is loaded with the indexes of a powerful intensive Intellect, supported by foothills of the parenthesis of Dignity, and by Caution and Integrity. The modeling mentality of this face is that of a genius of co-ordination, creative utility, and commercial vision.

The upper lip is full of all the friendship specifics and of the Aspirations; these make it inevitable that he sought the success of others along with his own. Our special study of Economy is interestingly brought out in the study of the pur-
poses and the aspirations of this face and of face b. In face a, ownership, frugality and selfishness are all large; the foot-hills of the nose roll up in a bank, as if to make a roadway to Defense in the crest of the nose. Unneutralized, this Economy would give a hard, exacting, unforbearing, close-fisted, avaricious disposition.

But the Inspiration in the end of the nose, the constructive imagination in the wings, the fulled-out, fairly long, still mobile, wide-mouthed upper lip region, broadening the parenthesis and giving this whole region a sensitive, sympathetic, almost melancholic appearance, but still controllingly firm, is sufficient to take away the unnecessary hardness or harshness of Economy and Dignity. The regions of Stability, Aversion, and Destruction are hidden under the mass of the beard. Probably these are fairly large and executive.

To the student of the Merton Method such faces as those of Lincoln, Hill, Humboldt, Michelangelo, Bonaparte and Berthelot are alluring studies—studies of the forces that move the world, of massed powers, or converters of currents of human mo-
tives into results and products.

From this enormous face of Hill we turn to face b, an equally quantitative face, physically.

It is the face of a somewhat uncelebrated species "triglobulus" of the genus Homo, eminently successful in business; the observation, Caution, Economy, and equity are evidences of a keen appreciation of the values of personal property.

In this face the high Economy is reinforced by the heavy jaw, rather small Integrity, hard, depressed Aspirations and small Culture; it would divide friendships rather than divide the dollar.

Fig. 382 is that of two highly successful savings bank presidents, interested in the commercial and industrial advance of their communities, in successful banking and the security of their funds. In these faces Economy holds a near-dominant ratio, and is not extreme in any of its specific expressions. It is as near all round commercial Economy as the best order of economic control requires. Larger Economy might restrict favorable opportunities and choice of securities; it would incline toward pica-yune savings. Considerably smaller Economy might allow inattentive oversight in important details or in ques-
tions of closely reduced unpaying funds, or in needless ways run into non-paying extravagances. Such a small specific ownership would not act intensely in advocating or encouraging carefulness in investment or in saving on the part of patrons.

Thus the quantity value of ownership, and of frugality where necessary, is a criterion of successful effort even in so highly legalized and officially inspected a concern as a savings bank. The faces of several hundred savings bank chief officials almost uniformly indicate this ratio as 90 to 96 of the dominants, with Integrity approximately in the same ratios.

Secrecy, vigilance, intensity, utility, choice and reciprocity may vary somewhat more in ratios when the varying specific is favorably supported by other specifics.

In these faces secrecy is higher in a than in b, aggression and protection higher in b than in a, choice (or freedom) and reciprocity somewhat larger in a than in b; calculation is larger, in fact dominant in a, while Construction, observation, and Reason are at or close to the dominant line in b. Justice and honor are nearer the dominant in a, but equity, or the estimation of property values and uses, is nearer the dominant in b. The Integrity of either face will not be doubted.

The bearing of these upon Economy is apparent as influential forces. Other Will specifics exert themselves in giving executive aptitude, general management, and public confidence.

In Fig. 383 there are eight faces of American executives in several vocational fields, and varying to some extent in the relative size of Economy specifics. It will be noticed that Construction has considerable size in nearly all of these faces, that the Aspirations are fairly large, and that the regions of the side face and mandible are well filled. In three of the faces secrecy is only moderately full, which is an uncommon fact in executive faces, and in these Aversion, Destruction, Stability and Industry have quite powerful specifics. The fifth and sixth faces (reading them across the page) are promotive rather than strictly executive.

The Economics of Property and of Effort:

Of late years the economics of property and of materials have received extensive and highly valuable study. These studies have also been extended into the fields of operation and production by capable investigators, engineers and specialists,
especially in the practice of many of the large concerns. So varied and numerous are these studies and the conditions under which they are applicable that an outline here cannot be of value to the student. But as these organized efforts at perfection in production and management increase and reach phases of economic standardization, the necessity for better vocational selection and more specific natural aptitude for the particular work in hand increases in more than equal proportions. Just as the introduction of complex machinery on the farm added the necessity for higher mechanical ability on the part of the farmer running the machine, so the introduction of standard practices in the industry demands the kinds of abilities and dispositions required in standard practices of various sorts. The point where over-administration ceases to be either practical or economical, is in itself a complex administrative problem. The most perfect plan of operation will fall down in the hands of incompetent operators or under operative antagonisms, or it may have inscrutable elements of defeat in one place of application and not have them in another. Invariability is a rule in science, but not in industry.

The tenet, that the greater the need of economic attention, the greater the necessity for large—not necessarily dominant—specifics of propriety and equity, holds good in the employees as well as in the proprietors. The proprietors can delegate the function of economy of production or operation to one of their members, but that delegation is not practical in the case of employees.

The personnel manager may extend his selections and suggestions of promotions for places of greatest economic waste liability to those men with other equal qualifications who have the largest propriety, equity, and protection; the same option in promotion or in assignment may be adopted by the foreman. By gradual application of the Merton Method, consistently moulding the personnel materials by use of the predictive possibilities of the method, the supervisory staff can not only bring about a more smoothly working force, but a greater firm loyalty.

It is within the scope of the counselor’s and the employment manager’s work to make a thorough study of the utility and creation of a rational economic habit, to understand economic growth in the means of production and distribution, carefully to consider problems in economic senility, decadence and waste in property, machinery, products, or ef-
fort. Any one practicing the guidance of the young or of those seeking vocational success, or exercising executive management of personnel, should assiduously study the elements of economic permanence, change, chance and discretion; should understand the essentials of organic and material wealth, the accumulation of wealth of record, mean increase of property values and industrial growth, legal defenses and the relations of industries to civic polity.

These problems are extensive and cannot be treated in this study, but they enter into private counsel and into the control or management of employees. They are part of the necessary and useful funds of information that underlie good judgment and sound advice. They should be of direct, practical, vocational and industrial order, not alone generalized political economy, which gives a broad vision of the fields of effort but seldom reaches the details of vocational values or the sequences of individual conduct with which the counselor or the employment executive largely deals, and upon which rests the success of his advice or plans.
MERTON COURSE

VOCATIONAL COUNSELING

and

EMPLOYEE SELECTION

The Art of Judging People

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The Regional Influence and Products of Defense

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THE ART OF JUDGING PEOPLE

LESSON TWENTY-SIX

The Regional Influence and Products of Defense

Location of Defense Influences:

The specific location of the regional influence of Defense is in the ridge of the nose, from the base of the curve of the forehead down to the regions of Attention on the crest of the end of the nose, to the margin of Inspiration back of the crest of the end of the nose, and blending with Economy, as seen in the study of that faculty. The region at the side of the nose blends with that of Caution, another member of the Wealth group, along the forward line of the cheek, thus forming the foothills of the nose from the cheek forward. Aggression is in the upper region, protection follows, about the middle section of the crest, and self-defense, or courage, shorter than the other specifics, is close to Attention and Economy.

Its Freedom as an Index:

Situated on the crest of the nose and occupying its
Vocational Counseling

region on both sides, Defense is so situated that its development is not under stress of modulating itself to the expression of other specifics. The size of its neighbors does not reach toward the general focuses of its specifics, as is the case with secrecy and intensity in their having a plane surface to raise or lower.

The crest of the nose thus rises high from or lags low toward the general base, as the influences of Defense require.

In Fig. 384, a and b, the high, somewhat thin aquiline nose of a defensive Yankee and the low swayback nose of an undefensive Finlander are marked contrasts. The Finlander could raise the bridge of his nose to the size of the other without needing to modify the rest of his face; he could, we might add, if he changed his disposition enough for a long time.

The student can have in mind the harmonic face line, or the medium large, 90 per cent sized faculty from which to draw the ratios, or the direct mode, ranging the steps from very large to very small, and gauge the size in proportion.

In Fig. 385 face a is that of an executive educator, classic in its contours, almost too evenly balanced to reach a high degree of administrative ability. The analysis line
would run very evenly, dominant in the Intellect, slightly lower through the Will. The greater part of the quite even line is crowded down to 90 per cent of the large Reason, Language and Memory. Because of this the regions of Defense hold close to that percentage.

In face b Defense holds about the same relations to the dominant abilities—calculation, imagination, perseverance, fortitude, hardihood, independence, motion-form, and vocabulary—as it does in face a, but the ratio is based upon the other specifics.

The General Nature of Defense:

The faculty of Defense is the most dynamic of the Wealth group of faculties. It is intensive in proportion to its size, both in its attack and in its resistance habits. Thus outside of business relations Defense has a clear and definite bearing upon conduct and the social disposition, increasing the angularity of one's "temper," inclining one to combativeness and controversial habits, or when small, to negativeness or other unintensive mental attitudes.

The trend of Defense is not toward physical defense in the man, but rather toward wealth accumulation and persistent business methods and business life. The chief characteristics of the faculty are in its tendencies toward individualism—the go-it-alone disposition—toward refusing concessions in manners or in means, and toward outdoing as well as undoing the prospects or successes of competitors in any way—commercially, personally, or socially.

Individualistic Nature of Defense:

In all of these ways we find it, as distinctive from the commercial and organizing activities of the higher Will faculties, a one-man-power disposition, along with its group companions, Economy and Caution, and, supported closely by Aversion and Destruction, it is not a co-operative, organization, interdependent influence in the mentality.

These are reasons why, when the faculty is very large, particularly when associated with large Economy, it does not work well in an organized staff. It wants its own way too much; tends to ride over others' opinions; demands more than its share, or tends to do so unless controlled by higher faculties of mentality of an opposite nature. When Amity and
the Aspirations are high and intense they may modify very large Defense into a companionable faculty.

The fact is apparent in practical life, in the organization of the great industrial staff and co-ordinating working forces. The largely dominant defensive, economic, cautious nose and cheek regions are not often found in the executive offices, places where intense respect for each other's rights, powers and responsibilities is absolutely necessary if harmony is to follow; where, in fact, however great the plenary power above, it is exercised with regard for the proprieties of good manners, open confidences, and mutually measured compensations.

Therefore, Defense in the executive, in the man who governs many men, is usually adjusted as finely as the balance-wheel of a chronometer. When it is not, one of two things happens: he builds a staff of buffers who are willing to act as shields to those below or as guards to himself when the flashes are playing too heavily; usually this is at considerable mental or financial expense, and is becoming relatively less frequent. But the commercial attitude, the incessant push and intrigue for place and salary, for personal advantage not indicated by results, the individualistic self-seeking aggressiveness of the extreme Defense and wealth gaining disposition, is contra-indicated in a smoothly working organization.

The individual in business or in the professions, many times in the trades, may have dominant Defense, even extreme Defense, and succeed, as in the face of Evarts, Fig. 386. It is less deterrent when working under its own relationships and plenary powers than where greater mutuality of actions is required. Thus salesmen, independent negotiators, many lawyers and actors, and retail dealers often have large Defense.

The Specifics, or Subfaculties, of Defense:

The specifics of Defense are aggression, protection and self-defense (courage), named downward along the ridge of the nose. The specific aggression is seldom extremely large when protection is small, but it may vary considerably from self-defense and the reverse.

Large Aggression:

In the individual large aggression (between 90 and 96 of the dominant) stimulates the mentality toward gain and position. It urges complacency when that seem a means of
conquest, and urges endurance to effort, and sagacity, when these seem open to opportunity. It stimulates Reason and Construction toward long-headed plans and outlooks, toward prophetic insight into methods, products, and opportunities; it unites with Industry in group defensiveness by organization, by commercial farsightedness.

Large aggression is interested more in ready capital, flexible power, changing and growing equities, conquest by forcefulness and challenge, than it is in the Economy problems of greatest security, least expenditure, and the stability of old habits and conservative methods.

Aggression, when supported by a well-organized mentality, seeks to advance the individual by the individual's mental specialty; it seeks to establish a priority of accomplishment of a marked, or useful, or particular kind. If it must pit itself against others in their own lines, it seeks to gain advantage or advancement by some form of sagacity or strategy. With time and experience, this may lead to a kind of local monopoly of outward specialty distinction.

**Very Large Aggression:**

Some of the phases of this specific when very large and combined with very large Economy, protection, and self-defense (courage), we have al-
ready treated under The Individualistic Nature of Defense.

Very large aggression, as a form of expression in meeting others, is becoming less and less a factor in business, in the manner in which concealed intention is also becoming an adverse factor. These facts are due to the advancing conditions of mentality in high class men. Men cannot conceal their real intentions as much as formerly, nor do they attempt to do so as intently as formerly. Yet as long as trade and business are carried on for profit, general concealment of profits and intentions, as specific elements, will follow.

Aggressiveness and dogmatic impulses are commercial deterrents as means of approach or conquest, when clearly seen, from another cause. That cause is the appreciable fact that business men are gaining more and more in sensibility. They do not so much scrutinize the facts and evidence more closely than formerly, but do scrutinize each other and with a keener sensitiveness.

Men study harder to realize each other’s attitude; they search for the invisible impression. By a mental state of calm negation they become receptive to that undercurrent of intention that falls as lightly as a spider's web. But it tells its own story. It thus parallels the recitation of facts; it adds or detracts from the quantity and the quality of the commercial argument, onset, or claim. This is why the man who travels skilfully through a maze of misrepresentation often gets tripped upon his unconsciously revealed intention.

So, too, the man who blunders through a misrepresenta-
tion, but with evident good intention, is often saved from defeat by his lack of clearly defined conception of the truth.

**Very Large Aggression, Protection, and Economy:**

Very large aggression and protection, with large or very large Economy, has the effect of plunging the individual ahead in rabid present gains without consideration for future results if these are not incidental to the conditions. It is this disposition that cannot avoid making use of every incident to get an advantage justly or unjustly. It crowds others off the sidewalk, and monopolizes the points of vantage by disagreeable hoggishness or importunity; it plausibly urges virtues that may or may not exist except in a vivid imagination.

But the chief vocational fact is that of this disposition not being fitted for organization or even copartnership relations, except, perhaps, with its own kind of aggression and economic excessiveness. This disposition does not work well with an extremely opposite disposition—which is not the case with these specifics when moderately large or large—because it cannot easily refrain from taking advantage of its associates.

In supervisory positions it operates fairly well, except that the combination is inclined to incessant demands for promotion, increase of salary, or other extra advantages. It must
be remembered that the kind of product of the combination is in accord with the quality of the individual, whether a horse-trader, storekeeper, or banker.

Small or Below Average Aggression:

Deficient aggression may be stimulated by the suggestions that give the incentives of approbation, of the approval of one's friends, or by the commonly known necessities of prudence; it can often be aroused by the apparent need of security, the gratification of future aid to others, or by the suggestions of personal growth in gaining competence and ability to withstand the shock of monetary mistakes.

Indifference to economic progress has in it the suggestion of erratic egotism—selfishness of an opposite order from that of penuriousness—indifference to the jeopardy of others.

When aggression is lacking in the elements of urgency and progressive desire, indifferent to change from the condition of personal standstill, the counselor should suggest intensive interest in accumulative purposes as well as in the obligations of progress.

Large Protection:

The specific protection is the most static of those of Defense and its constant influence is below the subfaculty aggression on the crest of the nose.

The action of large protection is conservative in efforts to protect one from danger by the use of accumulated materials, wealth or reputation.

In these efforts it seeks to avoid all negative conditions, commercial or other vocational stone walls, or the persistence in misdirection. Protection is active against waste effort, repugnant work, or needless fatigue.

The vocational counselor must also realize that as aggression may be intense in pushing forward one's opinions and theories as well as commercial purposes, so protection is equally intense in protecting one's opinions, views, relations to existing conditions, or belief in causes or plans.

It is evident that large protection may differ from large Caution in its attitude toward irresolution. Caution may be frightened into fear and irresolution, into an inactive cowardice, but protection, when large enough to be characteristically or vocationally strong, shuns irresolution, indecision,
timidity, or any kind of indefinite apprehension, by going into an active campaign to frustrate or defeat those attitudes or their causes.

This is one reason why the executive, superintendent, foreman or other boss should have a fair quantity of the specific protection. When troubles loom in the foreground the purpose should be to prepare for their defeat and "keep one's nerve" while doing it. The presence of fair protection and aggression adds to courage and intrepidity in conduct. Too much protection may be a hindrance, but too little is still worse.

Even in the ranks of labor there should be a balance between indifference to progress and excessive claims.

Some Illustrations of Defense:

In Fig. 390, face a is the executive face of one of the world's greatest tea growers and merchants. The face is almost too intellectual to be highly executive. The faculty of Defense ranks high because the rest of the mentality is evenly balanced. Nearly the whole line of ratios falls within twenty per cent, and only the fact that the whole Will is comparatively within the vocational ratings can keep this mentality in business life.

Face b is a chief executive of one of the trade unions not requiring high mechanical skillfulness but much manual
FIG. 390
and form ability. This face does not indicate great expertness in his trade, but has many elements of trade organization ability. We leave the analysis for the student to work out, crossing the analysis line of face a. The broad nose bridge is pragmatic in its Defense subfaculties; it has no Damascus blade of attack or defense, but the set idea, the over-and-over-again onset, the merely slow gain of accretion of unwillingness to stop or change or vary. It is not, as is the hollow nose bridge, a negative aggression or protection or self-defense, but an unvarying one. It does not like the risk of change or sharp differences; it will not take the commercial risks or responsibilities.

In brief, the nose has largely the journeyman's Defense, though not his Construction, which usually is larger with much heavier and wider wings, and the observation also larger.

This kind of faculty of Defense, this fairly high, broad and solidly carved nose bridge, or, properly, nose ridge, is one the counselor and personnel manager may well keep in mind when it is combined with a good solid jaw or executive Will. It has the characteristics of practical persistence and somewhat dogged tenacity. As an executive faculty it often moves more slowly than when the nose ridge is high and narrow; it does not plunge ahead with the apparent spontaneity of the promoter or highly aggressive representative. It handles affairs as if they were strands of a well made rope, by a series of overlapping activities, taking a somewhat prolonged view of each one, maturing first this one and then that one, moving the temporary executive acts rapidly in the intervals of the more constructive or important efforts. Let the student review the dozens of executive faces shown throughout this text, whose accomplishment and faces fit the analysis and descriptions, except where noted as being an illustrative variation from the real face.

Very few of these faces have extreme aggression, protection, self-defense, and Economy. On the other hand, not one of the executives was found to have a Socratic or Ingersollian nose ridge and Economy. Among the technicians, yes, but not among the executives; with the rest of the Will powerful, it is possible, not probable.

Fig. 391, face a, is an illustration of a commonly seen Defense of the ordinary industrious, over-cautious, simple-minded, unaggressive or unprotective servant. It is kindly,
hopeful, vital, easily becomes skilled in routine work or in uncomplicated work. It would be a difficult task to attempt to give this mentality an elaborate education, to stimulate it into any form of superintendence, direct-ive effort, or mobile proficiency.

Nearly an antithesis of this mentality is found in face b. The long high nose is aggressive, protective and self-defensive in a marked degree. The face has the mid-ranges of faculties high; it is endowed with the science faculties large, with Construction, Language and Number considerably smaller. It is the general cast of many Norwegian faces, of some of the old English-Norse mixed stock, and occasionally the long Irish face of old unmixed ancestry.

This is a difficult face to place vocationally: for pharmacy Number is hardly high enough; for teaching, Language is not fluent and descriptive enough; in bookkeeping or cashiering not only is Number not quite high enough, but Defense is too large and intense to allow the drag of semi-routine; in stenography and typewriting she will not be submissive enough to routine; the
management faculties are hardly solid and large enough for office management, nor is patience with detail great enough.

As a registered nurse she would be a fair success, but somewhat impatient under the restraints of the profession and the foibles of the sick. In millinery creative work imagination should be relatively higher, and Reason not so high.

The sales vocations in stores, where artistic sense and attention to the personality of the customer have or require still less of the opposition faculties, cannot be considered as they are not of a high enough order to agree with her natural quality or the order of her education and dominant faculties, Reason, Inspiration, Attention, Form and Color.

These faculties and the large Aspirations would find expression in welfare and social betterment work, some kinds of factory inspection, or in the direct handling and culture of greenhouse plants.

Fig. 392, face a, lacks both analysis and fair Defense abilities, must rely upon the rounded development of the Intellect without much specialization, and will fall into one of the generalized retail clerkships, where special abilities or intensive effort are
not expected or at least not generally demanded.

Face b has a broad, large-winged nose, with a mechanic's wide head. He was an adept in machine tool work, as was also face c in steel working tools. In face c the nose is so large at the end that it appears deformed; the defensive aggression, protection and self-defense are below the average in a face where many of the specifics are small. The machinist's specifics—Construction, Number, Form, and observation, — with mental-focus large and vigilance fair, raise him in his vocation above the aptitudes where his ordinary quality would place him.

Yet, with these well arranged machinist's faculties, no one would for a moment consider him for a place as shop foreman over the general average mechanical force. The stress would fall upon the absence of sufficient executive and culture faculties. Face b, grown to an experienced maturity, would make a better foreman.

In quality and fineness of mentality face a ranks far above faces b and c, but could not equal either in a highly specialized vocation in comparison with their success in their own.
We have had foreman after foreman call our attention to the work of men with extreme features similar to those of face c, with remarks such as, “I can't see how that homely mug ever goes by the bunch the way he does!” They could not see the focused, intensive, undisturbed constructive specifics working in the man's mentality; like the natural violin maker, all the purposes of the mind centered enjoyably upon the perfection of his work. This man (face c), even if he can travel only a skilful mechanic's distance, does go his distance. Reduce any one of the specifics needed fifteen per cent, and he would rank as ordinary.

In Fig. 393 is the face of a moody fireman who many years ago was advised to become a yarn dyer boss, and became a happy expert in his work, controlling his aids by the sheer perfection of his color sense and his careful Stability and protection.

The second face of Fig. 393 is that of a great connoisseur of antiques and an authority on ancient art, who lectured and taught with great facility in verbal illustration and an enormous memory of the artistic periods and successions. His specifics of Form, Color, Language, Number, and Construction run very even and almost uniformly high. Aggression, protection, and self-defense in this face are extremely broad but hardly above the average of the mentality, and so would never have drawn him away from his art career. Note the contrast in the Number, Language, and Construction in these faces.

In Fig. 394, face a, the large Defense in the nose is unsupported by any large Will faculties, except Laudation. This mentality would drive ahead in intellectual pursuits. It has the mental enthusiasm of the long nose and somewhat optimistic upper lip. It would be quite difficult for this man to be an executive organizer of either men or business industries. As a workman or a clerk he would “talk his head off and get nothing done”; as a teacher or a leader of ideals he would treat his subjects synthetically, elaborately, and with great breadth of general perception, specific memory and clearness in arrangement.

Face b is an early portrait of the long-time president of the American Federation of Labor. This face is personally known to hundreds of thousands of men, since he began in 1865 to take an interest in the organization of labor, traveling the trade union road with A. Strasser of the old Cigar Makers' Union of the "seventies."
This nose has great co-ordination faculties; economic, synthetic, defensive, moderately aggressive, it stays "set" with enormous persistency. The upper lip is almost overgrown with Amity, Reform, Sociability, and the Aspirations. Fortunately for his executive efforts, the cheek and jaw are full, solid, dynamic, and thus large enough to modify or control the extreme emotional impulses as well as his Laudation and tendency to contempt for opposing ideas. Had this mentality turned to industrial organization, it would doubtless have demonstrated the same kind of executive control over the forces under him.

The Subfaculty Self-Defense:

The prime elements seen in the Defense specific protection and, though somewhat less, in the specific aggression, at once distinguishes those forms of Defense from that of self-defense. Self-defense, or, as we have sometimes called it, courage, is much more pugnacious, much more or nearly wholly personal, sometimes springing out of resentment, sometimes out of boldness and excess of courage, and in the lower ranges of individuals, out of unbalanced or excessive egotism.
The impulsive and destructive faculties may furnish much of the mental stimulation to the excessive pugilistic tendency; or, when these are not large, the purpose take the form of somewhat friendly contest under stimulation of large Mobility and muscular vigor. Some peoples who are not at all aggressive are noted for their enjoyment of forms of self-defense—mobile and manual as well as verbal. But these forms of defensive expression are generally brief, even if vigorous, and do not contain the premeditated, prepared for, formal, and long-sustained characteristics of the upper Will faculties.

Fig. 395 is the face of Napoleon, on which the subfaculties thus far studied are written on their focal places, except those on the end of the nose and the Culture group in the upper lip region.

The student should study the ratios of these specifics, and can mark their quantities from the par values down near the focal points. The following face, Fig. 396, is that of an accomplished Englishwoman, and the specifics are omitted from this face in order that the student may make a rating on their regions, if desiring to do so.

These ratings may be what one can call synoptical, or brief ratings, writing in the ratios of all of the vocationally leading specifics, the smaller regions simply equated from the face itself. The dominant and its supports nominate the vocation. The rest of the line of analysis indicates the points of liable failure and the specifics that need encouragement or watchfulness. No other means so far worked out equals the complete rating by the table, either as a means of judgment or as a record of the individual mentality.

However, it often happens that it is either inconvenient to make a table analysis, or the time at hand does not allow elaborate marking, and the mental process of reading, similar to the processes in mental arithmetic, can be resorted to, rating the vocational order of high power subfaculties and their supports, and noting weak or deficient specifics. In employment selection, where the position to be filled is known and the mentality of the job is clear to the analyst, the purely mental process may answer, unless a record is required.

The student will hardly need to read the faces of Napoleon, Humboldt, Washington or such uncommon men for vocational placement in their historical vocations, but those same
faces could readily find placement in present human affairs. If their faces explained their characters and accomplishments then, they would do the same to-day; if their faces misfitted their characters and vocational accomplishments a hundred or a thousand years ago, they would do so now. Given the place and circumstance, the face of the old Nero would still be the face of the new; the new Washington's, that of the industrial promoter.

Face a, Fig. 397, of Lord Northcliffe, might have been the face of a Roman Mark Antony, without the passion or licentious tendencies of that Antony; hunting power and control, industrial production, the management of men and of ideas, the study of this face is a lesson in the use of the commercial bludgeon, just as the study of face b, Paul E. Deschanel, President of France, is a study in the use of the political rapier. Here we see the absence of the heartlessness and inordinate ambition found in the face of Napoleon.

Mental Relations of Defense:

The mental relations of Defense are wide in the lower regions of mentality and in the government of the muscles of the body. The specifics are not, however, as closely involved in particular relations as are some of the specifics of other faculties, and we shall not
dwell upon these relations in particular as fully as upon the general relations of the faculty effects.

In practical life aggression, protection and self-defense (courage) do not take the place of the specifics of Caution, but do respond to them in defensive ways, whether in the matter of commercial defense or in that of physical defense and protection.

Mental Relations of Aggression:

Aggression is shown by the chart of relations to work closely with Economy, Industry and Liberty; it tries to overcome misdirected efforts, to climb out of vocational blind alleys, to fight its way around monotonous work. Aggression is often active in avoiding waste labor. It creates a kind of dynamic ardor in gaining its plans.

It is the aggressive subfaculty that starts an attack on a problem or purpose at the earliest moment possible to it under the conditions, and exercises compulsion more readily than any other specific except the vengeance of Destruction.

We have shown under the study of large aggression that it is interested in commercial power, but is more individualistic than it is co-operative. In this fact very large aggression is often disliked in employees because of its inclining them to urge promotion, increased salaries and better conditions for themselves, when a less aggressive man or woman would patiently wait for these kinds of recognition. On the other hand, the aggressive man or woman is apt to struggle harder for success. The choice of one having one or the other characteristic depends much upon the result desired—one inclined toward the settled routine worker, or the active and intense vocational climber.

Mental Relations of Protection:

The specific protection seeks every kind of protective benefits. It is interested with Caution in avoiding economic dangers in the future, with Reason in having a long-headed plan of advancement and a reasonable basis for security; it is a stimulant to Attention to avoid errors of processes or of bad placement, so that it may not need to correct errors or do its work over again without compensation.

Large protection, unless supported by equally large aggres-
sion, like large Caution, or large Economy under ordinary conditions, may have a slowing up-effect, deferring matters of financial action or of business judgment in order to avoid chance of failure or of loss.

Mental Relations of Self-Defense:

The relations of self-defense are still more individualistic as well as more personal, and we find its closest responses are in the regions of the senses and the impulsive and mobile faculties of the Will. Its activities are generally personal, transient, and "quick tempered."

Defense and Ambition:

We have earlier shown that the higher Will faculties trend toward coactive ambitions. The lower Will faculties trend toward individualistic progress and defense.

In common opinion Defense is often mistaken for Ambition, to some phases of which it directly responds. Dignity, Stability, Laudation, and Industry have in them an essence of achievement quite independent of the matter of compensation or of immediate gain. Defense is largely actuated by the fact of financial or product gain. In theory many people, especially among women, are stimulated by the sense of Ambition's aims, or by the necessity to attain self-protection. But comparatively few women have heretofore had the severe and understood purposes of aggressive and protective Defense. In looking toward a career, the purpose has been largely one of gaining moderate comfort and security, and too often thought of as being of a transient necessity.

As conditions and outlook are changing everywhere, the
freer mentalities of both men and women are beginning to stimulate the higher faculties toward the outlook of unlimited success—of rising high financially in the professions, in the business world, in the field of executive vision and accomplishment.

Defense in its aggressive and its self-protective aspects will add to the faculties of Ambition, Inspiration, and of industrial effort, the impulses of unlimited advancement and of extra-necessary compensation.

The inclusion of the high Executives is becoming a forced necessity from the very nature of mentality and of executive forms. Thousands of men and women fail after early success in business, fail even when conditions have not depreciated, and when their capital has increased commensurately with the changed conditions. These failures are due to the fact that the mental business requirements of the lower faculty regions that were necessary and sufficient under personally directed detail business activities, are often incapable mental faculty regions when called upon to govern in the extended relations of complex industry and executive management.

In face a, Fig. 399, is illustrated the powerful Defense of the non-commercial mentality, as illustrated by other faces in this study. His face is full of fiery Defense, dominantly aggressive, ungoverned by consistent Caution, Dignity, or Stability. He broke from and fought the established Church of Rome, still retaining his intensified religious zeal, as shown in his upper lip, and persisting in his insistent analysis of philosophy, as shown by his extremely long and analytical nasal septum.

Face b is that of Eliza Bonaparte, sister of Napoleon, Princess of Lucca and Grand Duchess of Tuscany. In her face is seen the powerful Defense of the Napoleonic nose. The region of Reason is large and evenly balanced, Caution large, and the mandible faculties all fairly developed. This is the face of a socially and politically executive woman. The half-tone illustration from a painting does not do her face justice, but its power is seen.

Face d of Fig. 399 has many of the executive regions large, but Defense falls below the average of the faculties. Number, Language, and the rest specific of Caution are below average; these will doubtless turn the disposition toward a somewhat non-executive profession, in which Reason, Attention, Construction, Memory, and Form are the factors and in the order named.
Large Defense and Powerful Will:

Face c is that of a railroad executive and builder. In this face a powerful Defense is supported by a wide and evenly balanced Will, a powerful Intellect, and Aspirations strong enough to make the mentality well harmonized. Economy is the smallest of the executive faculties, and Color the smallest of the Intellect faculties.

In face e Defense again is powerful, supported by the equally powerful executive faculties of Stability, Caution, Industry, and Liberty. The forehead slopes backward somewhat, reducing the Inspiration and mental-focus in the end of the nose, and indicating a synthetic Reason in the septum. These indicate an executive in a generally non-technical manufacturing industry, where the greatest stress is in the fields of direct financial management and in an atmosphere of hypothetical or speculative profits and commerce, as in milling, grain dealing, or beef handling.

Comparative Regions of Defense:

Fig. 400, a, shows the nasal bone, N, and its articulation with the bones of the face; the superior lateral cartilage (S.C.); the inferior lateral cartilage (I.C.); and the fibrous tissue (F.T.) of the ala, with the sesamoid cartilages. This nose has an average contour, slightly shorter than a typical American nose.

Figure b has the same outline, except that the bridge, or ridge, of the nose is lower, and the nasal bone and superior cartilage much smaller.

In Figure c, there is compared with the outline of Figure b the child-nose. It is seen that aggression, protection, and self-defense, or courage, are extremely small; in this mentality there will never be wilful, careful preparation against defeats of its plans; its protection will be a matter of emergency, of the moment—impulsive and erratic. In an adult with a similar nose-ridge the Intellect may act as a guide to Defense, but the characteristic expression will be much like the Defense of the child. Commercial and financial actions will lack intensity as well as constancy; activity in work will be much under the control of the feelings and impulses; at times there will be indifference to matters of industrial progress. Other faculties, as Industry, Economy, Stability, or powerful Intellect faculties, may modify this deficient Defense somewhat, but can only at mental loss make up for the deficiency. Com-
FIG. 400
pare Figure c with the Greek outline of d, and the contour of a. In the child-nose the slope of the brow is usually long, and the nose relatively longer than it appears to be.

Frequently the child-nose in youth develops into the contours of the Greek nose, or the ridge rises markedly under the efforts of the Will and its developing Defense.

The Greek nose in childhood generally indicates potential Defense large enough to raise the nose through youth and early maturity to a decided aquiline or Roman nose, as seen in Figure g.

In Figure f the nose has medium aggression, protection, and self-defense.

In Figure g the nose has large aggression, protection, and self-defense; it will enter long-time contests, it will endure much disappointment, and it will exercise strategy and sagacity in gaining its objects.

Figures h and k have very large Defense; aggression and protection are the larger elements of the faculty.

Figure j has very large Defense; the elements of protection and self-defense are the larger.

Figure j has two outlines, one of a slightly larger than medium, and the other a slightly below medium, Defense.

The majority of noses have less than medium Defense. In some branches of the race, notably the less aggressive Chinese and the Hindus, as well as the negroid branches, Defense is notably small in a vast majority of individuals, and the fact is shown by the relatively flat nose, the crest being curved faceward and low, giving the effect of protruding brows and long chin.

Large Defense and Dominant Intellect:

The presence of large Defense with a dominant mental temperament and moderate Economy, Industry, and the Impulsive faculties, is seen to lead to a go-it-alone job. Such a mental proportion is found in Fig. 394, face a, in Fig. 386, face a, and in other long forehead mentalities, where the chief executive faculties are in a large minority of power, where boldness, insistence, dissension, and contentions for opportunities are always of an intellectual nature. They are often found in professional men whose professional efforts depend upon themselves and not upon the co-operation of others, as illustrated by the lawyers, physicians, dentists, and many
farmers. The New Englander has been celebrated for his individualistic Defense.

The thin cheeked Mercier, Manning, Bruno, Dante, Savonarola, Voltaire, Copernicus, Vespucci, Cicero, Evarts, needed their high Defense noses to cut their way through the masses of opposition against which their lack of a solid body of lower Will faculties (and often of Stability or Industry) would not furnish power of a more impulsive and rebuffing kind. Not exerting their forces in the field of industry, these faces found Defense necessary as a dynamic backing for their purely intellectual and emotional contests. The student can readily realize that with large Defense and with the other commercial and industrial Executives medium or lower, with no inclination toward business effort, the effect of that Defense would be to accentuate and stimulate the intellect in its intellectual pursuits. The Will being highly secondary, the vocation would almost of necessity turn to the intellectual vocations, even with a powerful Defense.

The student should realize that the great mentalities of the past were products of the same laws that are operating to-day; the circumstances were different to the extent that society and ideas were different; the same categories of basic facts of human knowledge, as far as it had reached upward and forward, were controlling then as now, and created the same kind of mental regions and expression.

But, another fact is also tied up in this, one readily understood and used by the counselor. It is this: that the great mentalities of the past and of today are mentally but magnified or enlarged specimens of the lower power mentalities. The combination that made a firebrand of Bruno, steeped in the world of verbal analogy and attributed power, asserting much and proving little, makes the metaphysical philosopher of to-day, and in low quality men the vague recounter of opinions. The combination that made Galileo Galilei calmly protective, persistent in the analysis, synthesis, constructive invention and intensive application of mechanical principles, that made him the world's first great philosopher of mechanics, makes the Steinmetz, Edison, and Bell; and reduced to lower levels by the fact of difference of quality, reaches downward to the mechanic at the bench or the ingenious "watch, clock and lock repairer" of the side street. The "big day" of the itinerant repairman is no less important to him than is the works manager's launching of his company's "Leviathan."
The itinerant repairman's face is just as large as is the face of the works manager. The quality is different, the education, intent, experience and power are different in quantity, in specific kind, in complexity. Each would probably fail in the other's job; but, age for age, the works manager's chance of success as a clock and lock repairer is ten thousand to one as compared with the tinkerer's chance of becoming a competent works manager. We use this illustration to indicate that the tinkerer, even with high quality, would not need and need not have the powerful executive and controlling faculties required by the works manager or any general superintendent of bodies of men, but that one could use a high proportion of the aggression and protection that would urge him forward as an individualist in his vocation, while the other would need many other qualifying specifics, supporting and controlling specifics, that would make it possible for him to operate in harmony with a highly strung staff, exercising the powers of a true moderator of their abilities and differences, and still bring into play the individual abilities of his subordinates.

In these various phases one easily discovers why progressive men and women aim to accumulate in themselves those elements of constructive, aggressive, executive ability that give dynamic power to every form of expression, and yet which are so controlled by Reason, Construction, Stability, Industry and Caution that the power involved will not run away and smash the professional wagon, but does set a pace that can be maintained while it distances all rivals.

Fig. 401, face a, is another illustration of high Defense and a dominant Intellect, with powerful Aspirations, which made the mentality invulnerable to any amount of pressure brought to bear upon it in opposition to its conception of right. Had this mentality held views contrary to the consensus of opinion as to what was right, it would have contested that opinion to the extent of a cultured fanaticism. Note the Will specifics that support the regions of Defense—vigilance, rest, choice, justice, honor, antipathy, praise, emulation, and self-esteem. Only nine out of the thirty-six stand out in relief, yet Mercier won the recognition of the world for bravery and truth-dealing. But we must remember the place held by the Intellect. The powerful Amity, Reform, Language, Aspirations, imagination, invention, foresight, Memory, and observation would not be imposed upon without searing answers.

Face b, drawn on practically the same scale, has the
balance of power shifted to the Will, and still holds large Defense. This mentality would shun the Intellect professions, arts or trades. It is set to the work of business management and commercial organization, to the representation of a great fire insurance company throughout North America. The auditory opening is fully five-eights of an inch farther forward than in the mentality of Mercier, the head and faces are much wider, and consequently the cheek, mandible, nose and body are much heavier; the Will is executive whether under good or bad, many or few incentives.

Conceive these two men to be of low quality and education. Could face a ever be a first rate gang boss, foreman, or small store-keeper? How about face b in these general lines?

Conceive these men to be, as their modeling indicates, of high quality and education. Could face b, under any voluntary choice, ever succeed in or be content to follow a purely intellectual vocation, or make sacrifice of financial prospects and management effort, or bear the stress of extreme want, vital danger, or lack of common comfort? Under these last circumstances and even worse ones, would face b say, “I’ll stay here with my people”? 

FIG. 401
The counselor or the employment manager will be called upon often to answer these questions in the common experiences of his vocation. Other questions in a hundred forms will arise, all based upon fundamental grounds: Can this thin faced man boss this gang, command this staff, control a department, resist the concussion of business contentions, exercise compulsion for commercial reasons, demonstrate dynamic power without official or legal support, or patiently add one dollar to others?

Or, in the case of faces with specifics similar to face b: Can or will this man rest content with simply personal work, with routine and repeated tasks, with obedience to exacting or expressed orders, with non-plenary duties, with subordination to some one he considers not his mental or social equal, with adversities that are not clearly unavoidable, with conditions that are distasteful or vocationally bad, or open to slow promotion, to chance, or to hazard? The Merton Method analysis will answer conclusively every one of these or similar questions. There will arise occasions in which the margin in favor of one of several vocations is very narrow, when the mental requirements run closely parallel to one another and to the mentality, and the elements of doubt are supporting, not anti-vocational; then one can take chances, in the choice, as in a race of nearly equal values.
MERTON COURSE

VOCATIONAL COUNSELING

and

EMPLOYEE SELECTION

THE ART OF JUDGING PEOPLE

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LESSON TWENTY SEVEN

The Regional Influences and Products of Aversion and Destruction

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The Regional Influences and Products of Aversion and Destruction

Location of Aversion and Destruction Influences:

The regions of the specific influences of Aversion and Destruction are along the side of the face as outlined in Fig. 402, external to the upper part of the lower jaw bone and part of the chin. The illustration gives a much better description of the specific locations than can be given by verbal definition.

The lower margin of Destruction is held up from the lower margin of the jaw by the regions of influence of Stability and equity. Back of Destruction and Aversion the regions of Liberty and Industry vary somewhat more, but still hold their own in proportional width, and above Aversion, the region of Integrity sweeps down to a point back of the self-esteem of Dignity. From this location the specific contempt of Aversion lies further forward under the mouth, or between it and the protruding bone of the chin.
It is noticeable that, like Integrity and Caution, these two faculties do not have free margins, as in the case of the crest and end of the nose or the lower margin of the jaw, but blend somewhat smoothly into the regions around them, and depend upon fullness for their expression of size. Few students find difficulty in reading the sizes of these faculties, but the focuses of the specifics are sometimes not as readily located in one face as in another. The best basis from which to judge their location is generally the lower margin of the jaw and the curve line of the chin.

Fig. 403, a political boss who was celebrated for his ability to resist every kind of change from ways and people he had grown accustomed to or who fitted his plan, is a good illustration of dominant Aversion and Destruction. Notice that the subfaculty focuses sweep around the side of the face a moderate distance from the margin of the mandible, and that contempt is below the mid-side of the under lip.

We shall treat the two faculties in this study, as their commercial disposition is less differentiated than is the fact with any of the other Will faculties, and their vocational values can be sufficiently described in this lesson.

The General Nature of Aversion and Destruction:

The nature of Aversion and Destruction is both personal and impersonal. It is a region that acts intensively toward the commercial life in overcoming difficulties by methods of repelling, or resisting, or of compelling, in accordance with the needs of the time and circumstances.

It varies the nature of its modes as do the other faculties, in
Aversion and Destruction

In these facts we see the quality of its powers running all the way from mild dislike of a means or a person to the severest expression of fanatical hatred. Some faculty in the mentality is the origin of such purposes and impulses, and it falls to Aversion, combined with Destruction, sometimes supported by a wide range of other faculties, to carry, create and execute such impulses.

When the causes are personal the object upon which the impulse settles is usually personal; when the cause is impersonal, the object upon which the impulse directs its attack is usually impersonal.

Men frequently grow in antipathy toward others until the disposition results in personal injury, or until it takes the form of attempts at the destruction of reputation, civil or social relations.

In many instances it begins in a feeling of injustice, wholly impersonal, and ends in impersonal injury, sabotage, arson, or other forms of crime.

In the main, the actions of Aversion or of Destruction are industrial or commercial, and are such as do not actually or directly destroy friendships or social relations.

These latter forms of activity we shall treat under the vocational relations of the faculty.

In the tables there is given an analysis of the specifics of the faculties of Aversion and of Destruction. It seems from these tables that these faculties are the horrors of the mentality. In some of the past ages, that was the case in fact; the impulses were uncontrolled by dominating faculties of a high proportion to its dominance and support in the mentality and in its disposition or the conception of its necessities under strain or attack.
order and opposite kind, by polarities that modified them out of an almost incessant harshness. Even today, there are men of several aboriginal tribes with whom no amount of kindness, friendship or generosity from another man is in any manner a guarantee of security, good faith or freedom from the liability of felonious homicide.

The modification, control and prevention of the various ill actions of these faculties, and their impressment into the proper services of the individual mentality is the natural work and attainment of the cultured individual, of the man in whom the balance of power is in the upper regions of thought and volitions.

Under such control of the reflective, receptive and ambitious faculties, the fiery impulses, the impetuous and alert purposes, the insistent perseverance, and the drastic promotive powers of Aversion and Destruction are turned into energies of governed accomplishment, and those of pioneer and entrepreneur industrial results.

The Specific Contempt:

The subfaculty contempt is located under the corner of the mouth, as shown
in the illustrations, and gives comparative fullness to that region. In Fig. 407, face a, the region is comparatively small in proportion to the end and bridge of the nose and the upper lip regions. In face b the region is larger than in a, but is in competition with a heavy cheek and jaw, and is comparatively only a little larger than in face a, although its effect upon the whole mentality is much greater, since the whole lower Will region is larger in proportion to the Intellect.

Contempt is mildly expressed in ridicule, irony, and various forms of sarcasm; sometimes it acts as a buffer against opposition or various forms of competition by creating an indifference to the attacks, or the attainments, or the condemnation of others. Various degrees of activity or of its natural powers may be shown in detestation, spite, ridicule, irony, or sarcasm, all having more or less resisting force against the attitudes and actions of other people.

The Specific Antipathy:

This specific is located on the cheek, a little below self-esteem and usually outside the lower end of the parenthesis of the mouth or the curved valley of the chin. Its volume is shown by its fullness in this region. It is marked by its initials An on face b of Fig. 407.

The impulsive feeling of antipathy is that of repugnance
for what one does not like, a desire to repel or drive the person disliked out of the way, or to break up a condition that is disturbing to one's plans or sensibilities, to remove, with little ceremony, either objects or obstructions to one's accomplishments.

**Antipathy** is often aroused by what one is pleased to call antagonistic ideas or attitudes; it is thus much more active than is contempt. But antipathy may also have a feeling of resistance without desire to destroy or to express ill-temper. A repulsive person may arouse antipathy of a kind that compels one to avoid that person's society or industrial relations. A man who is not himself repulsive may entertain ideas that arouse hostility, or may conduct his business in a manner that creates dislike or enmity.

In many commercial relations, especially where there exists intense opposition, this specific often takes the attitude of condemnation of others' methods without the associated thought of personal enmity, but more largely with that of contest and sport, of a game resistance. Frequently, however, the energies of antipathy have in them the harshness and angularity of rancor and uncompromising antagonism that arouse similar energies in others. Antagonism breeds antagonism, and the radiance of such impulses often becomes so much of a constant mental attitude that vocational success is defeated even when the man has otherwise sufficient ability to reach success.

When carried to such unreasonable extremes, the neighborly specifics become involved in the expression of hard, drastic, unenviable ill temper; it generates discourtesy, irascibility, and the disposition to condemn what is good as well as what is relatively bad in the conduct of others.

A large antipathy is usually a severer subfaculty than is the same size contempt. When aroused it carries its impulses into active hostility or enmity.

When small, its disposition when aroused is only toward dislike, and unless supported by large Defense, it is apt to resort to subterfuge or dissimulation, rather than to active hate and asperity.

**Antipathy** may, under the guidance of high Aspirations or large Amity, take an impersonal attitude, and vent its repulsion upon what it considers adverse ideas, concepts or methods; this is opposition to impersonal matters, and so may extend to methods in business, in executive life, and in industrial habits.
In these industrial relations a large or moderately large antipathy is useful or valuable in giving mental resistance to various kinds of trouble.

The Specific Solitude:

The specific solitude is located well backward of the region of antipathy, somewhat below honor, and along with severity lies in the hollow of the angle of the mandible, back of the lower margin of the malar bone.

When fairly large solitude gives the disposition to work alone and the reserve that is so often noticeable in the commercial activities of executives; it inclines toward vocational circumspection, alertness and wariness in any kind of revelation of intents and purposes. It is then, also, apt to avoid the blending of social and industrial interests or plans.

Very Large Solitude:

When the optimistic faculties are medium or low, and solitude very large, there is apt to be a disposition toward excessive solitude and a marked tendency toward gloominess and reserve. It is well when one finds that condition to avoid drastic criticism, and to hold out the normal facts that these tendencies are mentally and physically depressing, that they tend toward aggravating their own demerits, and that they have a remedy in a normal search for the benefits of companionship, of accomplishment, and self-culture. Every struggle toward self-culture at once sets in motion co-operative energies in others, at once changes the source of personal impulses from the regions of individual and personal contemplation, commiseration, and passivity, into impulses or intentions that are mutual, social, and recreative.

The forces wasted in condemnation are saved to become forces of reconstruction and elaborative, productive procedures. The forces of antagonism are, like the inorganic forces, radiating and dissipating forces, capable of great waste, capable of arousing the dormant antagonism of other individuals, bringing into existence a double destructive effect.

Independent of their self-destructive activities, when ungoverned these energies are culpably selfish and punishable.

The Faculty of Destruction:

The subfaculties, or specifics, of Destruction are vengeance, rigor and severity. These terms imply that Destruction is per-
Vocational Counseling

TENTATIVE ANALYSIS OF DESTRUCTION

**Exaction**
- Condemnation
- Disseverance
- Replacement
- Austerity
- Restraint
- Reserve
- Hardness
- Control
- Insistence

**Severity**
- Forcefulness
- Bluntness
- Change
- Reversion
- Contention
- Deletion
- Persistence
- Venemence
- Impetuousness

**Rigor**
- Cruelty
- Resentment
- Malice
- Fine
- Imprisonment
- Pain
- Execution
- Murder
- Massacre

FIG. 408

sonal and impersonal, also that it is, as earlier stated, a socially harsh and morally base faculty. But while it has exactly these attributes in itself, it is, as is the fact with all of the specifics, universal; it must, as an organic structure, be mental first, even social, second, and industrially utilitarian, third. We must remember that every new fact of construction is also a past fact of destruction. As the old Hindu said, "That which is can never not have been," so in all building, the materials, forces, and conditions must be a making-over through destruction; one might say, the part-unstructuring of something over which Nature has exerted power to construct.

The reflection over means and ways of constructing may not attentively interest us in the facts or ways or means of destroying, but these ways and means are ever present. The utility of what one has or must do, is part of the mental conception of the act, and the wisdom of doing the thing, of breaking up the old in order to create the new, is one of the prime factors of success.

In anger, revenge, defense, antipathy—in all antagonism of the Will—there is present in some degree or form, the facts or energies of Destruction. In tearing down a plant, replacing machines, working-up materials, cultivating the soil, hunting food or game, changing the basis of human ideas, desires or passions, there are present the energies and facts of Destruction. In how far these facts or energies are good or bad, will depend upon the causes and results.

If Aversion and Destruction were not normally necessary in all mentalities, they would not be present in them, and their malaction arises from wrong proportion or from misdirection.
When these low Will faculties are powerful, and uncontrolled by an opposite balance of power, they are inclined in favor of drastic and impulsive action.

These forces of drastic action, easily aroused to enmity, ready for opposition, dissension, and hostility, may be modified in quality by the other mental faculties, but may still exert a sensible power and a quality of mental procedure that has executive effect. In the appeal from judgment to force, in the abandonment of persuasion in favor of fear and destruction, in the substitution of power for ethics or common law and conference—these faculties exert their full force.

The Specific Severity:

Under the rational organization of the Will and the Intellect, a fair quantity of exactness, strictness, and firmness or sternness is almost a mental necessity. These aid in replacement of the old, obsolete or ineffective by something that is better fitted to fill the conditions sought. A range of from 85 to 95 per cent of the dominant is drastic enough to compel care on the part of others, to set up its part of normal resistance to rebuffs that may unjustly come from others, to harden the temperament against se-
vere disappointment, and to lend force to the physical body.

When severity is extremely large, it takes on a disposition toward harshness that is unnecessary in civilized life and disagreeable to any form of social relations.

In ordinary activities, severity urges toward accuracy and completeness, and to replacement when there is a condition of ineffectiveness of any kind, inclining more to personal matters, just as rigor inclines its actions toward impersonal matters.

In these various ways it is seen that severity in a fair amount is a vocational asset.

The Specific Rigor:

The specific rigor is the central of the regions of Destruction, and its forces are the most impersonal of the subfaculties of Destruction. When we say of a man that he is rigorous, we affirm his solid, unyielding, set determination to carry on his plans. Rigor influences the degree to which these forms of action will be done by the individual; it exercises compulsion of a dynamic and executive order, it is interested in compelling action, in getting things done that are open to obstruction; it inclines toward bluntness and rugged directions, toward compelling the complete fulfillment of contracts and conditions; it objects to yielding any kind of forebearance of rights. It is the lower Will counterpart of firmness and fortitude, and a support to perseverance, with all of which it blends in its facial region.

Rigor acts as a mental buffer when uncongenial steps are to be taken, as when contests that are disagreeable must be met, or when changes of relationships bring disagreement and opposition; it braces one for an onset, thus backing up aggression or protection.

Rigor, as exerted in reversions, contentions and deletions, in acts of opposition or opposite intentions, forms a powerful factor in the whole vocational and industrial world. It is one of the executive's powers of insistence and of resistance; it adds to his ability to keep on, to speed up, to stop, actions carried on by himself or ordered by him in the direction or control of others.

The counselor must weigh these various factors carefully in advising or employing men. Perseverance is another quality arising from a powerful rigor, though the term is used somewhat more generally than as a persistent and impetuous dis-
position. It is usually defined as a plugging and dogged effort. It may be this from compulsion, not from choice.

**Very Large Rigor:**

Very large rigor seldom acts distinguishably alone, but with vengeance and love of power.

**The Specific Vengeance:**

Vengeance is the most forward specific of Destruction, located under antipathy, and indicates its size by fullness back of the valley of the chin and where there is sometimes a secondary valley near the first, between firmness and equity; it is usually just above equity on the ridge, or slightly back toward the ear. The location is seen in Fig. 409 and Fig. 410. Some faces are so much modeled in this region that the locations of antipathy, vengeance and equity are puzzling to beginners, but in a three-quarter view it is noticeable that generally the three focal places, with self-esteem added above and flexibility below, form closely a half-moon shape; that the focus of vengeance generally lies along a slight curve of its faculty associates, rigor and severity.
Vengeance is the most personal of Destruction specifics, and when large and not controlled by the noble faculties, is active in every kind of retaliation, insensible to the pain of others or to the pain of the animal kingdom. Cruelty, resentment, malice, wanton murder or revenge are within its bounds, especially if the doctrine that might makes right invests its Intellect, or some obsessive passion prompts its direction.

In past ages its existence as a part of a dominant lower backhead in one individual, tribe or nation, made its excuse and exercise in rigorous forms the necessity of other individuals or peoples. Within the past century it has been said that civilized nations had ceased to exist, in the mass of whose people the baser impulses could be aroused to action by inculcations of doctrines or vitiating slogans of bestial pretext. But we see how sadly the world of better affairs can be beguiled into an indifferent lethargy by evil indirection, and how men of sodden temperament, heavy backheads, heavy jaws and low foreheads, can be engulfed in gross ambitions and vicious impulsions.

What is true of peoples is necessarily true of individuals; many men are harsh, severe, revengeful, implacable, or otherwise cast in antagonism, who do not realize the fact, or realizing, do not care to have it otherwise. But in individuals, Caution, discretion, the fear of consequences generally, deter the expression of personal Destruction and Aversion.

Controlled by a fairly high range of Culture and Aspiration faculties as a dominant majority, these low powers turn their purposes to the recreative, administrative, and motive accomplishments needed by the progressive world, needed in the massed execution of great aims and accomplishments. This leads into a consideration of the vocational relations of Aversion and Destruction, and, with the definitions of the sub-faculties in mind, we can readily treat the two faculties together.

Balance of Powers Not Neutrality:

From this brief disquisition on the origins of antagonism and impulsive efforts, of the sources of the lower orders of mental resistance to outward duress, we can turn to the somewhat pleasanter phases of expression of Aversion and of Destruction in the world of industry and the pursuit of vocational success.
As a basis for this consideration we should take a normally large, well controlled, and vocationally necessary faculty of Aversion and of Destruction. In departing from this normal size of these two faculties, the individual may or may not suffer vocational loss, unless the rating runs to either extreme.

The student will realize from what has been said of the balance of the Will and the Intellect, that equal opposite powers do not destroy each other's functions; high Culture faculties and high Impulsions do not offset each other, making neither powerful nor potent to accomplish. The reasonable action of such polar groups, or, in smaller regions, polar specifics, is the fact that the time, kind and conditions of the actions of each group are influenced by the other; neither group flies off at a tangent of actions, however large or small the cause. The faculties of Amity, Reform and Sociability are present with power enough to act when the rest of the mentality grants that the occasion warrants action. The faculties of Aversion, Destruction, and Defense or Economy or other low Will faculties are present with power enough to act when the rest of the mentality grants that the occasion warrants action. Each polar region, when nearly equal in power, urges its own modes or moods when there is an active cause or an inciting object, an idea or purpose or person. Evidently, if either group of powers is the stronger, its intentions, purposes, energies, and modes of procedure will more frequently prevail if conditions demand it, or will endure longer in an internal or external contest or course of action.

In every case the bearing of the required amount upon the vocations must be considered and its merits or demerits recognized by the counselor or the employment manager.

In Fig. 411, we have the face of a Roman noble of about the Ciceronian age. The face is an exquisite masterpiece of mentality, to which our hasty drawing can hardly do justice.

This face is full of definiteness of purpose—the will to accomplish. The peaks of the mentality are synthesis, object-form, alert general observation, vocabulary, and Construction in the Intellect, and Defense, Mobility, Stability, serenity, Industry and Liberty in the Will. The persistence of purpose is relieved of harshness by high Faith and Reform. Potentially the cultural faculties and Aspirations are strong. These are the directive stimuli in his purposes which are wholly free from personal aggrandizement. One would look for a greater degree of Dignity in one having to do with executive direction,
but the need for such is not so imperative in the work of Reform wherein all the workers are imbued with the spirit of the directing Intellect.

Moving in extremes in either direction in the Impulsion group of faculties—Aversion, Destruction, and Mobility—from this Roman noble, are the contrasted faces of Dante Alighieri, and of Nero and his friends. The one, thoughtful, ascetic, self-restrained, the master of remorseful and melancholian reserve; the other, connoisseur in the passions, appetites, and hatreds; violinist, emperor, murderer—and bane of insurance companies.

Between these extremes of low and high Aversion and Destruction is a vast quantitative range, where utility is wedded to necessary power, and the control of industrial, social and intellectual effort finds normal requirements for the lowest of human faculties.

To Neros some nations still cling; their dominance in the lower faculties running full. The faculties of the ethical Culture Function and those of the unitive Aspirations only find here and there a representative; their faith is the confidence of the low backhead that drives the low order of business and professional man to the common accumulation of wealth.
by any means within legal reach, without search for its expression in the esthetics and ethics of the world's refinements.

So of the individual who seeks selfishness as the basis of progress and advantage. Where aggression often urges one on to progress because of the vigor and virtue of accomplishments of a high order, Aversion and Destruction do not trend toward the choice of other than their own level in the horizontal ellipse, in the joviality of the feelings, in the appetites of the sensations, and in the perceptions and their responses in motivity.

Lack of Government:

When the faculties of Aversion and Destruction are dominant, and there are evidences of lack of government by high faculties, there is danger of violent temper, of irrational anger, of repulsive abruptness, irritability, and animosity. Under these conditions of power, the vocational counselor is warranted in making severe criticisms, in suggesting the advantages of a constant mental trend toward the products of the faculties of Amity and Sociability, of a set determination to cultivate the Aspirations, and to avoid the jeopardy of antagonism, of dislike, and loss of occupation.

Executive Power Is Both Directive and Dynamic:

In exherent theory, executive ability is supposed to be directive in all commercial fields. In mental fact and potency, it is more often dynamic, impelling, and commanding. It is the expression of power, recognized as such by the directed; it has a potential value in the mentality of the executive and in the receptivity of the one commanded.

Ability as an executive implies the power to determine and to direct the effort of others. But this determination and direction are products of the Intellect; their expression, their enforcement, their purposes, and their persistence are products of the Will.

When the expression of the Will is coactive or social, or mutual in its nature when directed to high purposes by the Intellect, or when the higher Will faculties of the functions of Ambition and of Coaction are the dominating powers, these receive reinforcement and other mental values from the lower Will faculties, from the functions of Defension and Impulsion, as stated earlier in this text.
In this manner, particularly in the executives of large industries, both higher and lower Will faculties are generally prominent; the whole class of dynamic powers is generally brought into play, and behind this steady pressure of voluntary conforming activities, there is present a reserve of stored power and energy that can be drawn upon in any emergency of change or contest.

This ability to stand punishment and "come back," to go down fighting one’s opposition and then survive with courage, to shoulder the responsibility one assumes or has thrust upon him without flinching, is one of the marks of an executive, and also a mark of a dependable employee in every other vocation.

Other faculties are capable of sustaining these kinds of effort under fairly favorable conditions, but it takes a very powerful combination to do so. No other group of faculties is mentally intended to supply the deficiency with anywhere near the constancy, ease or ruggedness possessed by Aversion and Destruction in combination with one or two of the faculties of Stability, Industry, Liberty or Defense.
Aversion and Destruction

Face a of Fig. 414 is a United States Senator, widely known for his uncompromising control of his state politics, and for his heavy industrial relations. Face b, the Right Honorable Winston Spencer Churchill, is a stormy, positive, radical and intellectual mentality, so broadly capable as nearly to defeat great accomplishments in any particular direction.

In these faces Aversion and Destruction are controlled by dominants, steadied by Stability and Reason, but still powerfully effective as backgrounds for either dramatic or drastic actions. The lack of large Aspirations, the small Inspiration, and the presence of not large contempt and rigor, in face a, will sway its opinions and interests always toward the conservative and "things as they are" disposition.

The modeled, full and expressive upper lip and the broad Inspiration of face b, will cast its lot always toward the side of changing destinies and efforts toward reorganization, and to the distribution of plenary powers. It will bend toward the radical in politics and in business.

Vocational Relations of Aversion and Destruction:

Aversion and Destruction are powerful supports to any vocation where great offensive or defensive resistance to mental or physical attack, to rugged opposition, to harshness or impulsive power, is required. Thus in executive life, in resisting extension of credit, in resisting various forms of imposition or of infringement of rights, time or opportunity, these faculties act as protection, as support, as mental bulwarks against attack. They are, therefore, usually required fairly large or large in commercial vocations, especially under conditions where one may need to crush his opponent or be crushed himself.

We have referred to these faculties as buffer powers, meaning that they absorb the shocks of commercial, professional, or personal attacks by the counter-feeling of antagonism, contest, or indifference. Harsh and impulsive energies are always repelling or impelling. These energies do not yield to sympathy; they are polar to the Aspirations and Culture faculties, hence when in power or when given power may easily become ruthless. It is a common saying that the majority rules; it is necessary to add a qualifying fact in this instance, namely, the majority of power rules.

In Fig. 415, we have made specific analyses of two execu-
tives, a, in commercial life, and b, a positive, dogmatic, determined organizer of a federated union.

In face a, an exceedingly finely balanced commercial face, synthesis and commercial imagination—commercial imagination because skilfulness and invention are considerably smaller and the Will is well represented—are the vocational dominants in the Intellect, with courage (or self-defense), system, equity, and protection third, and the Ambitions closely following.

Form, Language, Amity and Sociability do not support direct salesmanship or sales management, though the latter is a close second choice with either fire insurance general agency or commercial bank representation.

In face b, the vocational dominants are vocabulary, made somewhat restless and "contentious" by the lower Will regions, imagination and skilfulness second, with observation and motion-form third—in the Intellect. In the Will a large number of specifics are equal to first, second and third powers. These make a stubborn, intense, compelling executive, rather conservative in industrial and organized effort, but holding his own in matters of justice and industrial perceptions. Face b is sometimes found in shipping industries.

Figs. 416 and 417 are placed opposite, and on these faces the percentages of the specifics are marked upon their regions. Fig. 416 is of a noted botanical naturalist, in whom the Intellect is dominant, and the vocational specifics run as observation, scrutiny, synthesis, individuality, motion-form, judgment and analysis. The regions of the Will vary widely; some of the specifics are as small as 40 per cent, in regions which are thin and hollow, while others, as love of power and self-defense, are near the maximum.

Fig. 417 is that of an operating executive (David J. Lewis) and has the executive Intellect and Will specifics balanced in great harmony; high social and intensive friendship faculties act as moderators of an otherwise somewhat severe disposition. The modeling of the face under the broad directive and executive faculties is a splendid study in quality indexes. The dominant specifics, synthesis, imagination, and skilfulness, with judgment at 98, are splendid operative executive Intellect specifics when supported by a uniformly strong Will, with many of its specifics well above 90, and frugality the only one below 80. In fact, there are no really small regions in this face. If we turn to Fig. 418 we find many specifics between 70 and 80, some few below.
Face a of Fig. 418 is another evenly balanced face, the Will specifics holding their own with those of the Intellect, in which Language, Number, and Construction are fairly large. The nearly identical Intellect of face b is not supported by nearly as powerful a Will; the lower side-face is almost frail, giving the face, notwithstanding the higher nose and its larger Defense, the cast of sensitiveness and delicacy nowhere apparent in face a. The substitution in face b of large Defense for the large Stability, Aversion and Destruction in face a does not give it the executive or dynamic power possessed by a. It lacks resistance, force, and calm exacting power. That we can change these parts of the face and not change the contours of the forehead is an evidence that these regions are controlled by other than forehead faculties.

The modeling in these faces when compared with that of Fig. 416 and Fig. 417, at once reveals a lack of quality and power. The mental tension is much lower, in fact, cannot be carried anywhere nearly as high as in the other faces.

If we reduce the regions within the parenthesis of face a until they are thin and tense, it readily takes the disposition of a "spit-fire."
The elements of temper and sharp critical capabilities come uppermost whenever there are excuses for their expression; but face a still has far more controlling power than has face b, because there are dogmatic Will faculties that support the very moderate Defense and the larger higher Will faculties.

Driven into contests for supremacy in any of the industrial vocations, face a in either set of ratios would have great advantage. A ten per cent larger Defense would make the advantages more directive and leader-like, but might incline the mentality toward over-impulsiveness in anger.

Descending in quality to a much lower level, face a, Fig. 419, is that of a stoker, due largely to the low quality and to the lack of certain specifics that could raise even low quality considerably. The lack of Attention is so great as to preclude his doing anything that does not watch itself.

The nose indicates almost an absence of Defense, low Inspiration, scant Reason, and just enough Construction to give him an interest in machinery but not mechanics. It is the face of a laborer in which most of the Intellect seems unculti-
vated and potential, and the low Will faculties are prominent through the necessity of making a living and earning an existence. It is not an evil face, but simply that of a somewhat bull-headed, soggy, half-morose employee, with ambitions settled in a concurrence with the appetites and impulses, and the whole working toward a stubborn resistance to any change of method. But it will work, and as far as its stunt is current quantity will do it without enthusiasm or variation of gait. There are millions of just such men. Some of these millions have greater intellectual perceptions or mechanical skill, or have more serenity when the social impulse and the common appetites are not too much cramped. Many men of these low or fairly low quality dispositions rank somewhat higher in the nose-end indexes, and so occupy positions in the trades, or machine operative positions, or in the various handling vocations, as freight, cartage, or handtruckage jobs, and as helpers to skilled or skilful mechanics.

Face b is nearer the latter kind of mentality. The nose is low and flat, but the end and wings indicate a more awakened sensibility to surrounding matters of production, to the methods of doing work; it has more of the Aspirations, relatively large friendships, good humor and perseverance. The regions of Aversion, Destruction, and Liberty are smaller, act less constantly in vocational ways, and are hardly powerful enough.

In many small shops the foreman is a man of very considerable ability. He does not often need the highly trained technique of the large shops or plants, but must have an all-round capability that can master either a greater variety of jobs or work agreeably with fewer men under more constant control, and himself possess varied estimating experiences. Generally we find such men possessing the qualities of good mechanics and management, good quality and character.

When put under a few years' technical and superintendence direction, these men often become highly prized employees. Such is face a, Fig. 420. Among trade vocations, such men should be selected as mill carpenters or machinists, superintendents of small electrical plants, or of large office buildings.

Face b has the observation, scrutiny, imagination, skilfulness, and object-form and individuality of an inspector of manufactured products of a considerable variety, but lacks the elements of a good foreman or superintendent. The upper lip is too broad and thin to command by friendship, the side face has scant indexes of Aversion, Destruction, Stability,
or hardihood and independence; pride and love of power are small, so that there would be no primary incentive to the efforts of control, no compelling forces radiating in other than purely individualistic qualities. The Defense in the nose would urge into intensive personal accomplishment.

These illustrations indicate how directly moderately large Impulsion faculties act in the lower forms of supervision and foremanship, how their absence in more than average quantities, even with fair quality mentality, completely negatives progress toward even simpler forms of bossing.

It should be remembered, however, that millions of farmers and journeymen tradesmen, many of fine quality and natural ability if schooled or employed in larger affairs, have none of the conditions or opportunities to test out their executive powers. The lack of opportunity is also adversely reinforced by the lack of definite knowledge of their possessing masterful natural aptitudes. Inability to become successful farmers or storekeepers is often taken as a positive and practical evidence of native inability to do "big things," when as a matter of fact such failures are no evidence whatever. Relative to their number,
probably more successful executives have failed to become successful farmers, than the reverse. Certainly, in proportion to their numbers, as many would-be executives fail to become executives as would-be farmers fail to become good farmers. The capital and labor equivalent of a $15,000 executive is a large multiple of the per capita wealth of any city or country; there must necessarily be opportunity for comparatively few executives in proportion to the population.

This comparison again appears in the nature and disposition of men who have fair quality but poor order of specifics, as in Fig. 421, face a. This mentality, from the viewpoint of fair quality, is nearly a vocational non-descript; there are plenty of common jobs in which it would shine. The heavy cheek and jaw specifics overtopple the forehead and nose.

Face b is that of a country carpenter and builder, doing only common cost residence buildings, because no other grade of work is done in his vicinity. He must, from his vocational record, or business volume of accomplishments, be
rated as an ordinary boss carpenter and builder. Yet this face, given the conditions of environment and capital or of opportunity, would very soon rank high. The town and country need this man as much as the city and its industries need him; but the volume of his accomplishments and his compensations is much less because of his surroundings than would be the case if he could compound his work by larger units.

Such men are often found in vocations for which they are unfitted, but in which they are rated as being successful. They are so naturally superior to the technical or the business demands around them, that their third or fourth class vocational ranges are able to compete with local competitors, but would fail if brought in competition with high class men and heavy opposition.

The disposition of **Aversion** or of **Destruction** under compressing conditions due to surroundings, due to limited opportunities, to family burdens that are relievable by wilful determinations or the enforced activities of others—under these and similar circumstances—is to break up these conditions but not to seek new fields or new ways themselves. To seek new fields or wider working chances, is nearly always a product of large **Defense** and **Dignity** rather than of large **Aversion** and **Destruction**.

Thus low **Defense** and **Dignity**, as in face a, has a decided tendency to "stay set," however ordinary its circumstances or surroundings, but this face will bear down upon others if it seems necessary. The disposition of mentality of face b is to grow as fast as local conditions will allow without using mean ways to reach its vision of success. The counselor and the employment manager will note these differences either in giving advice or in placement. The "evident intent" of the individual is a clear element of valuation. The quality of the individual and the path of promotion are studies in variations of mentality that give advantages to the individual and to the employer; remembering always that quality is a much more distinguishing factor in human mentality than degree of thorough-breeding in horses.

Again and again we have noticed that it is the man with the low **Aversion**, **Destruction**, **Industry** and Aspirations that drifts about from one position to another, unwilling to fight hard for success in any place where responsibility is urged upon him. Often he works because he must, not because there is in him the spirit of success. He is poor material for
any employer, unless he exerts **Dignity** and **Stability** and goes at his work under their stimulation, with a pride and determination that make up for the lack of other resisting power. In the low order of vocations it may not be possible, because of lack of labor supply, to scan the faces of such help. For the more technical and important positions it certainly will repay the care given to every individual, both in regard to these low Will faculties and to those that are more keenly differentiating vocationally.

For the supervisory positions, as already stated, the fair size of these faculties marks the rugged staying qualities of the man when one Will is pitted against another, either in opposition or in friendly rivalry or in aid. Of course the higher Will faculties have their own share of these staying qualities, and have the natural organization specifics, but the specifics treated in this lesson are rugged and forceful mentally and physically. In this regard, as in all problems of employment management, when one employment manager uses practically the same methods that others use, none have a radical advantage; but let one employment manager use a superior selection and promotion method and his concern will soon outdistance its competitors in employment matters. In gaining a working body of people who have special adaptability, special aptitudes for their work, there is engrafted into the concern a corps spirit much more powerful and easily sustained than where the ordinary unevenness is present. This unevenness is like a national league ball club with several scrub players in it.

Review the hundreds of successful faces shown in these lessons, and note the analysis line in these regions where credit is given for executive power and co-ordinating ability. Some few instances will be found (purposely selected from among more thousands than each instance noted), where **Aversion** and **Destruction** are only average or are small specifics; in every case some of the executive powers rank high,—combinations of **Dignity, Stability, Industry, Liberty, Economy** and **Defense** in groups of three or more. These faces throughout the text are portraits, except where specially noted as being otherwise, and are of people who have so clearly distinguished themselves as to sustain our rating ratios. Occasionally variations in the contours of the opposite sides of the face may be noted, but we did not feel at liberty to change from the original portraits of actual people, except in such immaterial elements as whiskers, hair and clothing. Men **carrying**
on the same vocations on smaller scales may need the same specifics in closely the same proportion, but may differ otherwise chiefly in the matters of quality, capital, or opportunity. The sources of power are often beyond the possible reach of the particular individual.

The cities do not gain their excess of experts or executives from their own populations only, but also from the ambitious drift of these actual or potential experts from the supposedly less opportune country regions.

The disorderly-willed country youth is often kept in place and moulded into a fairly useful life by the concurrence of current opinion around him and the lack of opportunity to do hidden things, while the city youth of the same fundamental character has enormously greater opportunity to hide disorderly acts and much less closely guarding opinion; “living by one’s wits,” in its derogatory sense, is apt to find proportionately more following in city than in country life.

Extremes in either excess or deficient amounts of the stabilizing specifics of the Will are dangerous in either city or country life. The amount of personal relations normally involved in the vocation has a distinct bearing upon the disadvantages of these extremes. The greater the amount and frequency of discouragements in the orderly course of the vocation, the nearer the hardy, stable and resisting specifics should rate within supporting percentages to the vocational dominant line, without detracting from the vocational values of the line.

We speak of discouragements and vocational shocks here, because the faculties of Aversion and Destruction are the natural Will buffers against these, just as the Aspirations are the natural buffers against shocks that come to the Intellect and the Affections. When one speaks of optimism, he is not apt to have in mind the times or conditions of expected success, of buoyant enthusiastic ease in accomplishment, but rather the attitude under struggle and partial defeat.

So one speaks of courage, patience, perseverance, grit, and similar states of mind, when there is trouble, intensive opposition and even defeat being felt or experienced, or when failure ahead is probable. In such cases, the “buffers” of the Intellect and of the Will are volumes of power of decided advantage.

In the executive and the business world the shocks of various kinds are often sudden, unexpected, or their ill effects irremediable. Under them the man without considerable re-
sisting power goes down; perhaps only his "nerve" is broken, but that is often enough; perhaps he becomes pessimistic, angular, cynical or hard tempered, and loses the support of his friends, or estranges those who could aid in his recovery; but often he simply "fails to come back," and drifts away from the roads to success. The heavy lower Will, modified from too great harshness or hardness or punishment intentions by the polar faculties of the upper Intellect, has power to sustain one against vocational concussions.
LESSON TWENTY-EIGHT

The Regional Influences and Products of Mobility
The Specific Location of Mobility:

Mobility influences the region of the chin forward from the equity sign of Integrity. It is usually bounded at its backward margin by the hollow, or shallow furrow tracing down from the parenthesis of the mouth. The region then extends quite well toward the midline of the chin. There is an indication of a particular kind of persistence that influences the whole mid-front of the chin, that seems to be a blending of the physical endurance of Mobility with the persistence and stick-to-it-iveness of Stability. This disposition differs somewhat from Mobility in having a general skilfulness tendency that has so far compelled its further segregation from pure Mobility aptitudes, as shown in instances where there is great persistence but not great bodily flexibility, strength or endurance.

Sometimes Mobility broadens the chin squarely below the mouth, giving it a hard, firm, rugged cast, and appearance of setness, as seen in the face of the aviator, face
Sometimes the indications of powerful Mobility signs are a long and forward projection of the chin, with considerable breadth in its regions. This regional sign is extreme in the face b, one of the British golf champions. In this face the nose is unusually short and the chin compensatingly long, though one does not represent the other; both object-form and motion-form are large. Neither the aviator nor the polo player requires unusual mobility in the legs, hips, or lumbar back regions, yet in a majority ranking high in these vocations, these regions are powerful, and the mental faculties governing the arms are well represented.

Another illustration of the requirement of very large Mobility is the fast playing of tennis, where the torsions and flexions of the body must be rapid, spontaneous, and highly co-ordinated.

The vocations that relate to the assembling of machinery, particularly agricultural implements, automobiles, freight and passenger cars, and heavy electrical supplies; foundry work and assembling; lumber piling or loading; and the work of athletic
instructors, life saving guards, and baggage men, are instances where large Mobility is generally required.

The General Nature of Mobility:

The general nature of Mobility is stated in its specifics, flexibility, strength and endurance. The direct expressions, however, are in particular muscle regions of the body and of the skeleton, and do not have a marked influence over all of the muscles or skeleton. The influences are yet not as restricted as the control exercised by the cerebellum, or lesser brain lobe, which seems to have a dominating control over locomotion and the co-ordination of the muscles of the legs in their action, and to hold a fairly constant relation in size to the faculty of Mobility.

In tests on the brains of animals, it is proved that when the cerebellum (below the purely mental region) is amputated, normal locomotion becomes impossible, and endurance is enormously reduced even in respect to the irregular, ungoverned, spasmodic actions of the locomotor muscles.

Mobility and Physical Responsiveness:

But Mobility has other effects upon one’s physical activities than those of strength, flexibility and endurance; as it acts with the cerebellum closely, it gives responsiveness to the commands for action on the muscles of the pelvis, hips and legs, and especially in actions that are of an emergency or spontaneous character.

Perhaps no more apt illustration of this kind of mental and physical activity can be found than the marked muscular and co-ordinated responsiveness of the body to instant demands seen in the proficient

FIG. 424
baseball player. It then expresses, under mental alertness, great quickness of co-ordinations, exactness of bodily movement, and flexibility of bodily effort.

In fact, of the major league ball teams few members can be found who do not have very large indexes of Mobility, and nearly all have the long chin from the ear forward and downward. These indexes were especially noticeable in successful aviators, though not so directly required in their work.

While large Mobility enables one easily to carry on its own part of a great many vocations where it is indicated as necessary, it also augments the pleasure of many other forms of work and of the sports. In all walking, running, climbing and standing vocations it will often add endurance and enjoyment, and there will be less fatigue than would be the case with another who had equal general strength but only moderate or small Mobility.

The natural enjoyment of bodily exercise and work, particularly of those muscles most closely influenced by this faculty, often keeps men in a vocation which would otherwise be uncongenial.

Another general bearing of the size of this faculty is important. It is the fact that many people with large Mobility who have a natural and often urgent distaste for sedentary or quiet vocations, frequently do not realize the cause of the dissatisfaction, and will consequently move from one employer to another, while the real need is not a change in position but in vocation. The restless activity of many children is in a large measure due to the early-life prominence of this faculty, and the systems of education and of some forms of child labor and youth labor are actual hardships, due to restrained mobile activity, much beyond any other particular hardship of their effort.

Suggestive Modes of Rest:

In any industry where sitting still for considerable time is necessary, there should be regular intervals in which to mobilize the muscular system, circulation and nerve energies of the unexerted muscles. Standing still, especially with considerable constant tension on the muscles of the legs and back, is also extremely tiring, and a change to alternate relaxation and contraction of the muscles is beneficial to both recreation and circulation, which long “set” muscles restrict. The ar-
terial or veinous constriction of long set muscles is often almost anesthetic, and should be avoided when vocationally possible.

In nearly all forms of manual and leg work the accuracy and carefulness of movements require that both the bending and extending muscles (flexors and extensors) are held fairly firm, and if this is continued for some time, even with the muscles only moderately tense, there will be a sense of fatigue. It is advisable to allow occasional stretching and relaxing spells, even for thirty seconds or less. The short, sharp, light, blood-circulating exercises are most restful and rebuilding, stretching the limbs as far as can easily be done, and at regular times.

When the work is light, rapid or quick, much varied in the use of the muscles, and the stress does not fall for considerable time upon one set of muscles, the exercise and relaxation are not so necessary.

Where there are any irregularities in the heart action, extremes of exertion should be avoided; on the other hand, variety of physical exertion, evenness of work, and regularity in physical habits is the best possible treatment. Sedentary habits are not good heart tonics. Extreme lifting, hard running, small lung action, irregular heavy meals, are not advisable. Mental exercise while doing routine work is good for the health and lightens labor. The improvised creation of enthusiasm in one's daily job reduces the sense of tiredness and the length of the hours. The exercise of imagination, and idealization of one's work, the creation of improved methods or movements, tests of stress required or saved, the feeling of good humor and of a mirthful disposition, have tonic effects upon either mental or physical labor. The exercise of imagination, interested Attention, social and companionable relations, does not need to be vocational but stimulating and avocational, having to do with the enjoyment of one's work or the products of one's abilities.

Serenity in one's work is serenity in one's muscles, in digestion, in rest and sleep; it is also serenity in one's companions. One pessimistic snarling employee in a shop can easily add an hour's work to the day in the tiredness of the other employees as well as his own, and to the foreman's work considerably more. The whistling farmer is a wise fellow, and so is the good humored mechanic; both are conserving energy.
Mobility in its Relation to Reflective Effort:

In considering the influence of Mobility it is necessary to reflect upon its action in connection with intellectual pursuits. This faculty is closely allied with one's physical constitution, his physical strength and endurance. While the influence of Mobility lies largely in control of the lower back and leg muscles, making for their alertness and ready response in answer to demands upon them, both in temporary and sustained effort, it has a direct bearing upon intellectual effort in contributing to mental endurance. While not so manifest externally, mental effort is equally as consuming of nerve energy as is physical effort. To carry on such mental operations for extended periods of time under special stress requires mental endurance, some of which, like the physical, arises from the faculty of Mobility.

Consequently, one cannot overestimate the importance of developing a foundation physique which is capable of supporting the stress and strain of the superstructure—the intellect. It is futile to build an enormous intellect upon a weak physical foundation, for to do so is to court disaster when the mentality is subjected to an overload for an extended period. Such condition usually manifests itself in a crisis when reserve energy and capacity are most needed. So in counseling men into positions which may call for overload periods, give special attention to their Mobility, and assure yourself that they have plenty of reserve capacity to withstand the load.

Small Mobility and Ill-Humor:

One phase of the endurance and strength of small Mobility is its bearing upon good or bad temper, and the general happiness of the employee; this is the phase of fatigue under a normal day's work. One may assert that being physically tired ought not to depress one's good spirits and good humor, but in the case of many men and women the fatigue of a day's work has the effect of making them indifferent to their work, or irritable or severe tempered, both in their work and at home.

Often one does not himself realize this as a cause or a fact, nor that the amount of energy he wastes by untrained or wrong methods is a personal waste.

A false attitude has grown up among many workers—especially those who have considerable egotism,—that they know their vocation, that any effort of the employer or his supervisory forces is a selfish one to get more product for less
Money; and there is sometimes the attitude that the less produced the more work for others. In many concerns much has been done to lighten the work of the employee, irrespective of the gain to the employer, and to advance the interests, mental and physical, of the employee, on the broad chance that a return will come in some way from the better general conditions or from some specific gain not otherwise attainable. Our problem here is simply the one that relates to saving energy by the best shop or office practice.

We believe it is within the bounds of the employment manager's field, as a part of the hiring, to make clear the fact that the employer desires by any means at his command, to suggest facility, ease in work, improved methods or otherwise, the mutual benefit of the employee and employer, and in this way, to anticipate any objections or egotistic attitude by the employee later on. Many employees pay a heavy penalty for presuming to know all about themselves and their job. The higher the man in his vocation, the greater the probability that he will search for information and methods of self-improvement.

In jobs where it is required, the quantity of Mobility of the undersized man is an important matter to himself and to his employer; his endurance and ease in his work are matters he should be willing to consider, when it is made not to appear to be an attempt to get more work out of him in proportion to his pay,—and even that might be the right thing to do.

The Specific Flexibility:

The specific flexibility blends with equity and vengeance, but there is usually a depression or valley of the chin that bounds the sub-faculty on its backward margin. Often this valley is a
result of the bony structures of the jaw, sometimes it is due to muscle and tissue development alone, but its volume index is not changed because of one or the other cause.

The influence of this specific upon its physical regions that gives them relaxing and bending power is not very well understood, but necessarily has the effect of giving more than ordinary elasticity to the ligaments of the joints, freedom of movement to the processes of the bones at the joints, and possibly a great degree of over-relaxation to the muscles. This muscle and bone flexibility does not add to the quickness of the individual, but to ease of action beyond the ordinary, as when a man can readily stand straight-kneed and place the palms of his hands upon the floor, or in opposition to bending forward, can over-bend, or over-extend backward, the joints of the back and hips.

Large flexibility generally gives gracefulness and smoothness in motions, as seen in the professional dancer and the figure skater.

The action of large flexibility is especially noticeable in the “recovery” in a physical emergency, as the unexpected slip, stumble, or effort to dodge an obstruction or unexpected thrust; and in ordinary working vocations
where suppleness of bodily movement is frequently required, but not of an orderly nature.

From these aptitudes, flexibility in mobile actions resembles versatility in constructive actions, and is important in mastering any general task where great varieties of movements and sudden changes of direction are necessary.

The most conspicuous example of great flexibility is seen in the contortionist and gymnast, where the muscles and the joints of the skeleton are brought under great elastic and flexion control. In ordinary vocational life such extremes of flexion and of body torsions may not be necessary or of practical value. In many vocations a more than average man's flexibility is of considerable value in relieving stress, fatigue of attitude, and in giving ease in temporary work positions. The broad chin in this region indicates ease of accomplishment, in proportion to the individual strength and endurance, in those vocations where lumbar back muscles and the hip and leg muscles need to respond readily and freely to the vocational exertion.

Thus in lifting weights from the floor, or in bending and twisting movements, a stronger man may not always compete with a more flexible one of considerably less actual strength. In those vocations where bodily suppleness is important, as in various forms of ground floor moulding, machine assembling, gardening, coal mining, street paving, calking, and rigging, or where the stooping is carried low, the amount of flexibility possessed by the individual may be a critical matter.

The Specific Strength:

The specific strength has reference to the local muscular regions already referred to under flexibility, and not to the rest of the muscular system. The other regions have their own specific influences and control.

The specific strength influences the region of the chin before and above flexibility. It does not seem, from occasional exceptions, invariably to indicate uncommon locomotor strength when large, but generally holds true; its index when small is not invariable, and these facts can apparently be explained by the probable fact that the power of the regions in the body is somewhat due to other causes not yet discovered, or at least defined.

The sign, when small, as seen in the commonly described "weak chin," holds true to its measure when the regions of
Aversion, Destruction, hardihood and independence are medium or below. When these are fair and the specific strength is large, the pelvic and thigh muscles are generally above the average strength in proportion to the rest of the individual's muscular system.

The vocations that require considerable strength in the legs and back, where there is an occasional strain upon these muscles, where the lifting or other exertion is relatively heavy, should have a large or very large strength index.

The solid, heavy lower side-face and the powerful mandible are noticeable features of the successful heavy worker. But many men of low quality and degree of intelligence, though not possessing more than average strength and endurance, are compelled to work at hard labor in vocations where they are not physically fit to keep up an average of hard work, because they are not mentally fitted for any higher walks of life, or because those walks are all full of men better able to succeed in them.

For these reasons, one sees in the gangs of workmen men who are not fit, but who cannot do any other kind of work. Lack of education, low quality, deficient ambition, are causes that keep men who are physically below the average strength at work in heavy labor jobs; often, however, there is in the small knotty-muscled man a distinct liking and ambition for hard physical work, even when his quality and mental abilities are high enough to make a more mentally active vocation possible to him. Large Industry, Liberty, or combinations of other faculties, may be the origin of the desire for the freedom of a laborer's life. For, after all, sentiment and egotism aside, the outdoors laborer and worker has more freedom and liberty of action than have the vast majority of clerks and indoor salary workers. The employment manager, the foreman, and the gang boss, all know that it is quite impossible to rate the amount of work done by a laborer with anywhere near the accuracy that clerical work is rated.

We recall a construction firm that watched with great detail of the number of lines written per day by their stenographers, while in the gangs of laborers and among their mechanics there were heavy percentages of men who were thirty per cent below the average and over forty-five per cent below the maximum production of the gangs or the trade units. The amount of "supervision" necessary to keep a gang of laborers "average busy" is nearly as expensive as
their wages, and the labor stunt always trends toward the amount reasonably possible to the low power men in the gang or the shop.

On the other hand, because of other kinds of mental endowment and cultivated abilities, one often finds physically powerful men engaged in vocations in which strength or mobile endurance is not necessary or an advantage.

**The Specific Endurance:**

The sign of endurance is located in the lower and more forward region of the faculty, in almost a triangle with strength and flexibility. It protrudes the chin, and along with physical persistence often creates a ridge, with a vertical mid-valley between, in the end of the chin. The valley of the chin is not essential to the sign, and we have not been able to find a reason for the existence of this modeling in the faces in which it occurs. The probable cause of the valley is the normal division of the muscle attachments and the bony symphysis, or place of “growing together” of the lower jawbones, thus under the stimulation of persistency of certain kinds causing the variation in fullness on the sides. Men of the same weight vary more widely in endurance than in temporary strength. The endurance itself is relatively greater the longer the period of work or stress. The more intense the effort, the more nearly the value of endurance is reduced to the performance of the strength element; this can be expressed in the statement that a strong man with great endurance has little advantage over an equally strong man who has small endurance, if the stress is relatively brief, as with the prize fighter, sprinter, and some tasks of the emergency fire fighter.

**Prolonged Stress and Endurance:**

Physical endurance is a prime specific in many vocations where there is needed a continuous series of efforts, where the stress falls upon the lumbar and hip muscles, or upon the endurance of the legs, as in long distance walking or running, in lifting in the steel and iron industries, in heavy building work, and in the case of postmen, messengers, trappers, farmers, etc.

While not as directly concerned in the mental executive fields as are the other Will specifics, endurance has a distinct mental effect upon those efforts that are concerned in commercial activities. Its mental interactions reinforce the faculties of Stability, Industry, Caution, and Defense. In this mental
reinforcement it gives forcefulness, reserve power, impulse, and endurance to the nervous system.

In the fields of skilled labor, endurance and flexibility give added exactness and a variety of supporting tendencies, especially when such work is carried on by one in the standing attitude; also in occupations where "footwork" is an essential factor; in those professions or arts where bodily expression is important, as in acting and dancing; in climbing, and in foot-power press-work; where balancing on the feet is important, as in the vocations of train conductors, brakemen, carpenters, laddermen, window cleaners, firemen, sailors and tree-trimmers,—as occupations where effort may be unduly prolonged and nerve strain on the motor nerves quite constant.

It would be well to suggest to below normal weight men who need much endurance to keep up their day's work, that a largely whole grain, brown rice, nut and fruit diet, and a reduction of the meat and fish diet, will be an advantage in the matter of endurance, general working strength and health. Excessive fresh vegetable diets are not as favorable as with the full combination of whole grain flours, brown
rice and fruit. Grain eating vegetarians the world over have greater endurance than have the flesh eating peoples, and generally have more even temper.

Some Relations of Mobility:

On account of the general relations of Mobility to many of the vocations and to skill and its combinations resulting in skilfulness, we have deferred especial treatment of skill and skilfulness, dexterity and footwork, to be briefly considered in this lesson.

In considering these elements of Mobility, and of skill, dexterity and special physical aptitudes, only a brief survey can be given to some parts of the problem, but it is well to note them here, as associate subjects with Mobility.

Centers of Motive Control:

Physiologists have located through paralysis, disease, electric stimulation and other means, many general regions of the brain that are associated with local areas or muscles of the body. The greater number of these general regions of the brain were placed by experiments upon the brains of apes by Dr. David Ferrier. Dr. Ferrier called them regions of transient expression; but other anatomists have contradicted Ferrier by calling them motor centers. But which of these centers are regions of primary direction, of co-ordination, or of specific control and compara-
tive power, is not, we think, fully settled; disturbances either in regions of directive control or in combinations of motor tracts might have similar effects.

There was another obstruction to the experiments of Doctor Ferrier, in his correlating the locations with those of the human brain: the ape has a far less number of mental faculties than man has, and the convolutions do not hold the same regional relations in the brains of the apes as in those of man. In the human brain the regions must be located lower and further back than in the surface of the ape's brain.

But it is pertinent to our study to note a few vocational relationships under this lesson on Mobility, with reference to the regional influences over the muscles in their actions in particular classes of movements.

**Muscular Dominance:**

The contours and body powers of the muscles, acting under specific control of local regions, chiefly of the Will, vary somewhat in their proportions to each other and in different indi-
individuals. These variations would be greater, as is the case in the regions of the face, were it not for the physiological fact that many regions are opposite each other in the body and so are compelled to resist each other or to aid in mutual actions that arouse development and endurance. Marked differences in the comparative strength of opposed flexor and extensor muscles are often noted, and great differences in the comparative size of larger regions, as of the arms when compared with the legs, or the shoulders with the hips or the lumbar regions. Variations from majority heights or lengths of the torso and limbs are frequent. These variations are orderly, but sometimes of complex origin in mentality, and many of them have been determined.

Regions of Diminished Stimulation:

Men often break down physically through the give-way of the weaker local region of the body and its lack of mental direct support. Other men sometimes “go to pieces” physically through a realization of lost mastery of themselves or of the conditions they had formerly controlled. The Will energies become confused and lack potency. Cowardice, for the same reason, unnerves one; it may be the withdrawal of Defense, Aversion, or sometimes of Liberty, or all of them, from the dynamic field of activity. It is as if a general concedes defeat and in disorder attempts to withdraw from the field of contest; the power that remains in his troops is largely lost in non-protective effort.

The depressions due to adversative influences upon the Will faculties as individual organs may be illustrated by any of the faculties. Integrity is notably affected by conditions of doubt or by whatever it recognizes as injustice, and its influence is felt by physical depression, particularly in the cardiac and under-arm chest regions. Whether it rightly or wrongly involves that attitude does not modify the effect. It is the mental attitude and consciousness that is disturbed and affected.

The consciousness of being dealt with unjustly strikes at the faculty of Integrity and its neighbors and casts a damp mental atmosphere over the industrial energies, slowing down the processes of repair and invigoration. Instead of relaxing the tissues in morbid fashion as do the poisons of true despair, melancholia, and similar depressants, the hurt Integrity over-tenses and over-stresses the body in every interested organ,
and there results misapplied or unused energy or activity. Under such conditions large Aspirations may do much to neutralize the adverse effects, particularly if the condition does not last considerable time, or there seems to be a chance for change.

But such an exercise of the Aspirations is in itself a waste of energies and a source of interruption to mental rebuilding. The Aspirations are themselves then working under the attitude of condoning or of being an accessory before or after the fact of mental depression.

This illustration is given in order that we may understand why, under such conditions, skilfulness may be defeated without outward or commonly apparent reasons.

**Potential Ability, Experience and Technic:**

Another fact of importance to the personnel or employment manager, is that he is reading the capability to be or to become skilful in a technical sense, in the sense in which we have distinguished **skill** from **skilfulness**. In any line of effort one may possess remarkable capability, great potential ability, but never have experienced or trained that ability. We have a Lincoln still splitting rails, or a Grant still in the real estate business. We have thus the conditions of potential ability which the analyst is seeing in the face, but cannot always tell whether or not is yet experienced, and the condition of yet having to gain practical technic, which is an experienced skilfulness or even skill. The individual can satisfy this question by describing his amount of experience. In order to set this at rest in the student’s mind, we will briefly describe actual skilfulness already possessed as the experienced abilities of the individual in the work he has done or is best fitted by nature to do.

**Technic, as a Degree of Experience:**

Technic is not a specific, but a condition of ability at the time considered. Technic or technical ability is that degree of thorough, experienced, or trained knowledge of a combination of mental specifics or of a special branch of one of the great vocations that is expressed or implied by the word expertness, or adeptness, or facility. It implies an unusual amount of ability already gained in a particular branch of human activity, or special effort, or talent arising from un-
### Mobility

common quality of mental organism, that enables one to excel in that branch.

The possession of technic does not imply greater ability than is required in a broad vocation, but may only distinguish the individual as having, or being capable of, extreme power in a narrowed field. It is generally the outgrowth of relatively capable faculties working in a specialized vocational effort; it is the mental condition of having gained a high range of specialized mental aptitudes, as of great skilfulness exerted in restricted fields. It implies a more highly mental effort than skill, but may be much less broadly operative or distributed than skilfulness. Technic may be the mastery of a special sector or part of a vocation to which the individual gives marked attention or effort, and which, therefore, distinguishes him as having a degree of ability superimposed upon the competent mass of ability ordinarily possessed by those in that vocation.

Thus in the face of Fig. 431, of Christopher Mathewson, who has great Mobility, skilfulness, technic and mastery of the mental and physical requirements of baseball, and naturally had the potentiality required for any vocation paralleling the aptitudes needed in that game, the un-

![FIG. 430](image-url)

| Organic Temperament | Faculties: 20 50 70 90 100 | Sub-Var. Mental | Social | Executive | Object-form | Nature-form | Individuality | Face-shades | Representation | Figure-Order | Quantity | Calculation | Separation | Notice | Mental-form | Sensitivity |
|---------------------|---------------------------|-----------------|--------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------|------------|-----------|--------|-------------|------------|
| Form | | | | | | | | | | | | | | | | | | |
| Color | | | | | | | | | | | | | | | | | | |
| Number | | | | | | | | | | | | | | | | | | |
| Attention | | | | | | | | | | | | | | | | | | |
| Memory | | | | | | | | | | | | | | | | | | |
| Language | | | | | | | | | | | | | | | | | | |
| Inspiration | | | | | | | | | | | | | | | | | | |
| Reason | | | | | | | | | | | | | | | | | | |
| Constructive | | | | | | | | | | | | | | | | | | |
| Amity | | | | | | | | | | | | | | | | | | |
| Reform | | | | | | | | | | | | | | | | | | |
| Sociability | | | | | | | | | | | | | | | | | | |
| Faith | | | | | | | | | | | | | | | | | | |
| Love | | | | | | | | | | | | | | | | | | |
| Hope | | | | | | | | | | | | | | | | | | |
| Dignity | | | | | | | | | | | | | | | | | | |
| Stability | | | | | | | | | | | | | | | | | | |
| Laudation | | | | | | | | | | | | | | | | | | |
| Integrity | | | | | | | | | | | | | | | | | | |
| Industry | | | | | | | | | | | | | | | | | | |
| Liberty | | | | | | | | | | | | | | | | | | |
| Caution | | | | | | | | | | | | | | | | | | |
| Economy | | | | | | | | | | | | | | | | | | |
| Defense | | | | | | | | | | | | | | | | | | |
| Aversion | | | | | | | | | | | | | | | | | | |
| Destruction | | | | | | | | | | | | | | | | | | |
| Mobility | | | | | | | | | | | | | | | | | | |
| Impression | | | | | | | | | | | | | | | | | | |
| Feeling | | | | | | | | | | | | | | | | | | |
| Appetite | | | | | | | | | | | | | | | | | | |

FIG. 430
experienced vocations were potential, the experienced were actual with the technic of the game.

But this remarkable face of “Christy” Mathewson has much more in it than the required technic of the pitcher and all-round baseball player. Notice the long reach from the ear opening upward and forward and the responses to this in the mobile, genial, aspir ing upper lip, the presence throughout the face of serenity, good-will, justice, honor, moderated temper, fine carving and tonicity; the specifics in many regions seem carefully balanced with relation to mental and physical ease in accomplishment.

A contrast in endurance is shown in Fig. 432, the face of a man of powerful physique. An analysis table is included for each face, Fig. 431 and Fig. 432, where the contrasts can be worked out by the student. It is suggested that the regions of the chin, upper lip and upper forehead be carefully considered.

Skill, as a Complemental:

Skill is the routine or imitative phase of Construction when in combination with the Industry responses of Construction. In many fields of effort skill is a complemental of Mobility, though not arising from Mobility; it is to the

FIG. 433
Mobility arm and hand what Mobility is to the leg and foot. In many vocations, such as engraving, carving and chasing, skill is so much a manual effort as to place it out of the field of Mobility relations. But there are many skill vocations in which the co-ordination of the hands and feet is a factor, in which Mobility becomes a complementary faculty to the dominant from which skill vocations arise, and in which a large amount of manual exactness, accuracy of operation, and rapidity of movement enter.

Skill is in fact that trained knowledge and ability in a particular part of an art, or trade, or science, in which great exactness or accuracy of action is required, as in the expertness of highly specialized trades or other vocations. It may or may not imply quickness or rapidity, or it may imply great exactness, as in the case of the steel-plate or copper-plate engraver, but it does not imply that the operation carried on shall be the deft and expert ability of the needs of a varied, diversified vocation. A piece-worker, and a specialist in machine operation, or those operations described as operative vocations, require skill, but not skilfulness. One may say that vocations that require operative Attention and exactness, which can be gained by many people through repetition, are skill vocations.

In skill vocations, a fair percentage of men and women who enter into them can become fairly competent, even when these operators are quite limited in general ability. Nevertheless, they are at a disadvantage against one who has natural aptitude in the line carried on.

Some Differentials Are:

That skill is acquired by repeating the action many times; that it is gained in proportion to the quality of the individual; that it is finally gauged by the automaticity of the operations; that it varies less in different individuals than do the higher forms of dexterity or skilfulness; and that it can be gained by some who cannot become dextrous. The specifics skill, object-form and observation (Fig. 436—2, 2, 3) are usually large when skill is uncommonly gainful; the addition of fairly large utility and Economy is an advantage where the whole forearm is involved in the skill of the hand.

Dexterity:

The consideration of questions of skill next leads us to the matter of dexterity. In order to understand the facts of
the apt use of the hands we must remember that the acts of dexterity, like the acts of speech, are always mental concepts and mental habits before they are physical acts or physical habits; however brief the preparation for hand motions, there is a particular congregation of mental nerve relations. It is necessary mentally to work out the path of motion and other parts of hand use. The ability consciously to work out these combinations varies greatly in different persons. The problem in manual education is that of training the mentality to pre-vision, one might say, the direction and stress of hand action—really, to train the mentality to act.

The muscles and other organs of the hand are the same in general structure in all hands and for use in all trades and professions. The combinations of actions, of stress, of directive planning, are the criteria of manual ability.

Men often establish wrong habits of hand-work that make work much harder than is necessary. A course in manual training that taught the use of the hands instead of merely how more or less awkwardly to make things or use a few tools, would be energy and time saving. Manual awkwardness is often simply due to a lack of realizing one's manual faults. It is well to give some reasons why this is true.

**Dexterity, a Complex Capability:**

Dexterity, often called manual dexterity because it implies the deft use of the hands and arms, is not a specific of the mental faculties, as are the one hundred and eight subfaculties. Dexterity is a complex result arising from the favorable acting together of a number of faculties that have highly specialized relations to the hands and the forearms. Dexterity is a result of combinations of specifics. The forearm muscles are under wide constant influence, and this fact aids the smaller muscles of the hand in the great variety of hand abilities, and partly accounts for the differences between the manual skill and manual skilfulness of different people. The hand itself is still vastly more complex in its subjection to the constant mental influences than are the dextrous abilities, and from this fact of natural control it is partly an organ of expression, as well as an organ of the Intellect in formative direction and activity, and of the Will in executive activities. All quadrupeds of high order have greater variety of use, or of command over, their fore feet than over their hind feet—the mule's reputation to the contrary notwithstanding. Lower animal life often concentrates these dextrous functions in the antennæ or antennulae.
The mental assessment of dexterity is made by an equation of the following specifics in or nearly in this order: skillfulness, object-form, observation, Economy, choice and utility. Sometimes this ability is varied in expression by vocabulary, emulation, display, and the basic endurance as a support from Mobility. When the above specifics run fairly large, it is safe to predict large dexterity; if one or more are small, the variety of manual spontaneous actions is reduced proportionately. The order of dominance of four to nine, as shown on the face of Fig. 436, is not as specifically important as indicating dexterity, as the dominance from one to four.

The major actions and powers of the hand arise from the muscles of the forearm carried through the wrist to the hand. These are aided in the smaller movements by the local muscles of the hand, the smaller muscles controlling or aiding in directing the fingers and thumb.

It is well that the student of vocational dextrous requirements has a fair idea of these relations; the abilities possessed by the hand of the individual are not as clearly nor as fully shown by the hand as by the face. The hand is by far less specialized and less definitive than the face is. It must work; that is its chief function; its mental expression in gesture is incidental to its working ability, even when that expression is transient.

The general contours of the hand are too general as indexes to be of much value as vocational indexes, and since we believe it a waste of energy either to learn or to practice a second-best or third-best method of doing anything, and certainly so when that method is both less certain and less easily mastered than another, we shall not describe the indications here. The distinctions created by large dexterity are important.

Dexterity is a manual readiness to required change in hand-work; in anticipated precision in choice of manual action; in nervous and muscular control in any form of hand or craft workmanship.

In our early studies in these problems of dexterity and its various phases of manual ability, studies of thousands of machine operatives in the jewelry, die cutting, printing, and other industries, we found great variations in the accomplishment graphs. In these variations, the greater the rapidity of action, or frequency of the piecework, the longer the time required to determine from experience the natural aptitude of the individual. In other words, under actual ex-
FIG. 436
Mobility

experience, accuracy in work could be determined much sooner than the maximum of dexterity could be determined. It was noted on page 508 that some operatives move up rapidly in the scale of accomplishment and then fall back or reach their final earning rate. Others moved up and down in the amounts of work done, but gradually gained high constant records, while others started fast, stopped much below the general grade, and could make no more progress. It was proved time and again that general intelligence, special talents in other work, ambitious desire, parental aptitude, seriousness, desire for salary success, and many other personal qualities and desires, had little determining value. Proved manual facility at one machine or one kind of operation was a fair criterion of the possible work at another, provided the other required the same quality and order of mental specifics—as motion-form, imagination, object-form, flexibility, observation, or other vocational specifics. The most satisfactory primary tests and short-time determinations were those operations that depended largely upon the sense of touch, and, in simpler form, the next satisfactory short-time working tests were generally in the natural aptitude in counting and common arithmetic. When the conditions that create dexterity are right, the hands are particularly quick in response to mental direction; and in proportion to the culture, are particularly deft, accurate, and responsive in movement. In the rapidity by which mental associations of motor paths are established, there is great variation in different people and in different muscles of the same individual. It seems certain, from experience, that each particular act is much dependent upon the mental feeling out and cultivation of a particular association path, a particular nerve path through the brain, and that the natural ability is a result of rapid path-formation by the individual under the direction of motion-form and observation. Sometimes these are simply variations from more or less routine actions, and sometimes clearly new actions which are worked out in the mentality for the particular job in hand. Variations from routine actions are much more easily made by some individuals than by others. If the co-ordinations required are readily and easily made in one line of activity, they will be equally deftly made in others using the same muscular regions, though the experienced movements will not necessarily aid in the new movements, except as a general culture of the faculties involved, particularly if the experienced movements have become somewhat habitual.
As illustrations of vocations that require uncommon dexterity we can cite nearly all of the music instrumentalists, typewriters, tool dressers and tool sharpeners, template makers, linotype operators, printing pressmen and compositors, make-up men, bookbinders, die casters, lace makers, pantographers, shaping machine tenders, sewing machine operators, leather cutters, nearly all shoe shop workers, some kinds of cabinet making and carving, jewelry making, brass finishing, and many other vocations described in these lessons and in "How To Choose the Right Vocation." It is notable that the majority of these dexterity requiring vocations arise under the dominants Form, Construction, and Attention.

Some Vocations in Which Mobility Is an Important Faculty.

Steel Erector: The steel erector is a trained mechanic in the trade of handling, setting and fastening steel columns, beams, plates, girders, trusses, and other elements of structure; he should have mechanical abilities and enjoy structural work. The dominant is Construction, with skilfulness and imagination leading, sometimes invention closely following; these have Mobility as an essential from the necessity of lifting and moving over the structures with ease and certainty. These should have the close support of object-form, motion-form, calculation, vigilance and observation.

Turret Lathe Hand: The turret lathe hand has usually specialized on one of the standard turret lathes, ordinarily the Gisholt, Libby, Jones and Lamson, Monitor, Potter and Johnston or Steule, and operates his special machine more readily than any other. He must read drawings, understand their terms, be able to use the tools of his trade, calculate and make measurements with calipers, micrometers, combination square, and by the various gauges, and perform the various skilful tasks of his vocation that are normal products of his specified machine and general to his vocation.

The dominants of the turret lathe hand are imagination, skilfulness, Mobility (for heavy work); essential object-form and motion-form; supporting observation, dexterity (for light work), calculation and vigilance.

Borer; Gear Cutter; Threader; Nut Tapper; Shaver; Miller Machine Hand: These require closely the same specifics, and in practice much the same kind of experience, as the turret
lathe hand, varied as much, perhaps, by the class of work in each vocation as by the different branches of work in these vocations. Observation should be larger than in the turret lathe hand, where there is rapidity of action or frequent variations in the work; vigilance should be higher where conditions or work have increased accident liabilities; calculation should take second or third place where measurements are exacting and frequent calculations or large memory of numbers is necessary.

In some of these operations, especially where rapid changes are necessary, dexterity should be high, and it generally is where the specifics are those noted as required. The employment manager or foreman will take into consideration the heaviness, rapidity of action and the manual accuracy required.

In those jobs where the work is repeated many times, large skill may take the place of imagination and general skilfulness, but it is almost always so taken at a loss of interest by the mechanic.

Brakeman: Must have good eyesight, hearing and general education. Dominant observation; essential Mobility; supporting vigilance, motion-form, object-form, Color, calculation. Observation, Mobility and vigilance should be nearly equal, and the general Will region fairly represented.

Boiler-Maker: The work of the boiler-maker varies considerably with the kind of boilers constructed, whether stationary, locomotive or marine, large or small, although the work is generally heavy, in part due to the weight of the tools or materials. The size of Mobility and of vigilance required is governed somewhat by the amount of bodily torsions and the danger of working conditions.

Construction is dominant; essential object-form; supporting observation, calculation, Mobility and vigilance. Where the burden falls upon the shoulders, considerable pride and perseverance are indicated.

Sawyer: The great variety of work done and the skilfulness employed by sawyers necessarily modifies the order of specifics. A log Sawyer, in directing by levers, cant or hooks the course of the log in sawing, should have Construction large, Mobility, object-form, motion-form, observation and vigilance; the band Sawyer on light work, may have vigilance and Mobility change places in the scale of sizes, unless his feet have important work to do with breaking, bracing or con-
control of the work. Many sawyers of light work require the grouping of specifics that gives dexterity.

**Machine Assemblers:** Assemblers of heavy machines and structures generally need to work in all kinds of positions, sometimes under heavy temporary stresses on their legs, backs, and hips; under such conditions, imagination, skilfulness, object-form, Mobility and vigilance are required; in some positions dexterity is also an essential ability in accuracy, ease and quickness of handwork. Some kinds of piece-assembling are so light and routine that only object-form, dexterity and observation are necessary as competent aids to Construction.

**Moulder:** The bench and small castings moulder needs a practical knowledge of foundry practice ranging from simple to intricate castings, of moulding sands and mixing them, and of making dry-sand facing washes; he should understand core making, and setting, gating and sprew placing; he should have a practical knowledge of handling moulds, and of casting temperatures. See Large Floor Castings below.

**Moulder—Large Floor Castings:** The floor-moulder makes large castings and must understand setting up the moulds and cores; requires assistants and should be able to direct their work, to handle masses of metal and the heavy products of his work. The moulder requires steady muscles and fine dexterity for handling moulding material, particularly in dry sand moulding and where small moulds are required. In all forms of moulding—loam, bench, snap, machine iron or brass—the dominant is object-form, with essential Construction, and supporting dexterity and Mobility.

**Blacksmith:** Blacksmithing is carried on as accessory to many factory productions, where anvil work and light and medium forging, both original and repairs, welding, drawing, making samples and templates, are done; it requires a practical knowledge of grades of iron and steel and tool steel, of tempering in oil, water and air, and of the use of oxyacetylene and thermite welding.

Dominant, Form, especially object-form, and observation, because nearly all of his work depends upon hand shape and free design; essential skilfulness and imagination; supporting Mobility, vigilance, hardihood and Stability.

**Horseshoer; Blacksmith’s Helper:** These require the same specifics as the blacksmith, and all should be able to read drawings, make fair calculations, have good health, general
strength and a strong back. In horse-shoeing, Mobility and vigilance should be large.

Anglesmith: The anglesmith should be able to bend and weld and direct the beaters, handlers and helpers in short lengths and light angular shapes from flat-iron, channel-iron, and tee-iron stock; should be able to use oxyacetylene, electric-arc, and spot welding, doing all kinds of work from drawings, patterns or templates. Dominant object-form, motion-form; essential skilfulness; supporting imagination, Mobility, vigilance and Industry.

Bending-Machine Hand: Has the general functions, by machine, of the anglesmith, and the same order of specifics.

Forger; Drop and Die Forger: Must understand setting up and operating all kinds of drop and steam hammers for roughing, trimming, and finishing forgings; must be able to control his heaters and back handers, and to manage the various kinds of furnaces. Dominant Form; essential Construction; supporting Mobility, vigilance, Stability, good health and muscle system in general.

Forger; Heavy Forgings: Must be able to work from drawings, samples, and templates; must understand heavy hammer work ranging from ingots 4 to 18 inches in diameter, and manage bending, drawing, welding, upsetting and forming work under coal, coke, gas or oil fires; must have ability to endure heat and dust air, to control his aids, and manage production. Dominant Construction; essential Form; supporting Mobility, vigilance, Stability, and Impression.

Welder; Autogenous, Oxyhydrogen or Oxyacetylene: Must understand and be skilful in gas welding on any form of work on any metal; in planning and handling welding for manufacturing, shop and repair work; in building up bronze, aluminum, cast iron and mild steel in sheets, tubes and repair work; in automobile jobs; understand preheating, blocking up, clamping, and alignment. Dominant Construction; essential object-form; supporting calculation, vigilance, observation, Mobility, and Industry.

Other Welder hands require approximately the same specifics, and all should have careful apprenticeships in practical preparatory work to foremanship.

Furnace Man; Annealer: Must have thorough knowledge of annealing and heat-treating for annealing, of the operation of pyrometer apparatus, of temperature control and requirements.
Must be skilful in annealing in boxes or open-heat treatment hardening, and the general details of technical treatment of foundry metals. It is well to have had a technical education in metallurgy. Dominant Construction; essential analysis; supporting object-form, vigilance, observation, calculation, Mobility and hardihood.

Thermite Welder: Must understand thermite welding of large steel parts or their repair; construct moulds, control preheating, understand the use of gas, oil or gasoline torches for such purposes, be able to manage hand, electric or pneumatic grinding, clipping or drilling and the preparation of parts for the work. Mental specifics as for the Furnace Man.

Electroplater—Foreman: Superintends the plant in all forms of copper and nickel plating and processes of galvanizing. He must understand motor and belted generators, all bus tanks and tank bars, connectors and rheostats, handling and mixing standard solutions for pickling, washing and plating, hanging the work and anode principles, current time for various kinds of work, and the various forms of washing and drying. He must understand the work done by the metal plater’s helper, metal polisher, and the niter bluer.

In these Electroplater jobs, Construction is generally required dominant in order properly to run the plant, though Form is often found the dominant with fair Construction essential. Dominant skilfulness, imagination, object-form; supporting observation, scrutiny, Mobility, vigilance, firmness, Industry, Defense and Economy.

Master Mariner: A master mariner must have a thorough and practical knowledge of navigation, especially on the high seas, a mastery of the ship’s personnel and technical management. As an absolute monarch of his ship at sea, he should have an equable temperament and high honor. As a general rule men are promoted to a captaincy on the sea only after long experience and severe trials of character and competency. All of the executive positions below the chief officer are subject to the same rule of general good conduct and secure trustworthiness. Like the locomotive engineer, the responsibility for life is so great that only men of high honor, courage, and mastery of their vocation are worthy of the trust.

The sea captain needs firmness, perseverance, the Aspirations, Dignity, analysis, spontaneous judgment, independence, reciprocity, courage, vigilance, Mobility, imagination, skilfulness, observation and calculation.
LESSON TWENTY-NINE
The Regional Influences and Products of the Aspirations and Other Affections

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THE ART OF JUDGING PEOPLE

LESSON TWENTY-NINE

The Regional Influences and Products of the Aspirations and Other Affections

Regions of Specific Influence of the Aspirations:

The influence of the Aspirations is in the upper lip, within the line of the parenthesis and blending with Laudation along the crest of the valley beneath the nasal septum.

The faculties read upward from above the corner of the mouth, Faith, Love, and Hope, and in the top-head read in the same order backward from Sociability.

We shall treat the three faculties in this study. It will be noticed that the three faculties and their specifics do not lie in planes, but that their margins with each other form a general triangle. Hope lies toward the wing of the nose, Love toward the mid-lip region, Faith toward the corner of the mouth. The specifics blend closely and without distinctive margins, hence must largely be read by their cants, by the blending fullness of their regions. In many faces the cant or

FIG. 437
inclination of the specifics is great enough to read as a marked variation, and there are equally great variations in the faculty or specific powers; in other faces the regions are quite evenly developed and appear harder to segregate or to estimate. As a matter of fact, like all other specifics, they must be read and estimated just as they are; if even, read them even; if varied, read them so. It is not more uncommon to find large belief without much serenity, or the reverse, than to find large synthesis with small analysis. To use an engineering term, each of the mental specifics has its own feed-gear and pulley ratio, those of the Aspirations as truly as the others.

In Fig. 438, the face of a celebrated clergyman, the specifics are very large, quite evenly developed, the upper lip very thick and protruding. These Aspirations give him great optimism, and emotional enthusiasm.

We include here a page illustration of the face of Socrates, Fig. 439, and advise the student to make a careful rating of the specifics, then compare this rating with the recorded abilities and characteristics of his life.

In Fig. 440, face a has very large Aspirations, also large Amity and Reform, and fairly large Sociability. It is the face of a noted educator, long devoted to the enthusiastic advocacy of liberal support and encouragement of high grades of education in the common schools, and the advance of industrial education.

Contrast this face with face b, of Voltaire, in which the specifics are intensely variable, the whole region far below the regions of the end of the nose, the brows, or Caution, Industry and Liberty in the cheek. In Voltaire, serenity is comparatively high, belief and confidence extremely small; the enthusiasm of Hope swells out somewhat and with ex-
FIG. 459
The specifics that run smallest among these Aspirations are those of Love, that is, good-will, trust and philanthropy, the largest being philanthropy. The thin, tense, constricted region of these specifics, and of belief and confidence, illustrates vividly the hypercritical, half-cynical, agnostic attitude stimulated by his extremely large Liberty, extreme analysis, and vivid and constructive imagination. The thin upper lip does not modify by its friendships the tenor of the Intellect or the Aspirations.

In many faces the thin upper lip has an almost mummified appearance in its drawn effect over the upper jaw, indicating very small Aspirations. The protrusion of the bony part under the thin lip is not a true index of large Aspirations. Sometimes the upper lip is not thick, or deep, but has great mobility, flexible expression, and emotional play; in this case the specifics may be rated ten per cent higher than the comparative size, it being probable that small Laudation or Amity and Reform must be accommodated.
The Specifics of Faith:

The faculty of Faith expresses itself through the specifics, belief, confidence and serenity, as shown by their locations in Fig. 437 and Fig. 438.

The Specific Belief:

The specific belief measures the quantity of static receptivity and worshipfulness as shown in the emotional and social realms. It gives responsiveness to those forms of belief that are not rigidly proved, that have the elements of futurity in them, that are based upon the sensibility to general evidences of religious benefits, or those that we ordinarily define as arising from belief.

Belief is, in fact, that ability of the mentality to accept as a possibility and a probability something not yet in operation, not yet "concrete," as the philosophers say, but as yet in a potential condition—what the business man, judging from experience, classes as a prospect.

The Specific Confidence:

The specific confidence when large gives an intention to be frank and direct both in action and in social relations; as a result of its influences there is generally an attitude of altruism somewhat like that growing out of large Amity.

Confidence also creates a desire to trust others and to make ventures in the varied fields of accomplishment.

The Specific Serenity:

The specific serenity has in it more of the attitudes of congeniality than one ordinarily attributes to the fact of Faith. Yet, confidence in one's success, in one's own prospects, ideas or security, adds serenity to Faith. Serenity goes farther than

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**FIG. 441**

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confidence or love or good-will in its yielding to the mentality a condition of genial calm, a cast of quiet, sunny disposition, and a somewhat placid tendency to overcome troubles by making light of them. Large serenity charms others by its radiance of congeniality and its incentive toward good-humor; it shortens the day’s labor by glossing over and smoothing out irritations, by choosing to dwell upon the best of happenings instead of allowing the irascible side of life to possess one, or dispossess others. It aids in instigating that agreeableness and distinction of personal relations that adds pleasure to social life and attractiveness to one’s mental attitudes.

The complaisance arising from large serenity and its support from the praise of Laudation, are stimulants to good manners, to ease in gentility, add a glow to good humor, and a pediment to benevolence.

When below medium or when small, serenity does not aid in driving off worry, restlessness or irritability through its influence on the other faculties, but often allows Faith to become austere, severe, ascetic; it has a depressing effect that is the opposite of the mental attitudes that arise from large serenity. This is particularly so when its mental confrères are not large enough partly to offset its influence. It then inclines toward severity and a kind of negligent indifference to appearances of enjoyment or of interest in the pleasures or success of others; it cannot, alone, depress the effects of the whole region of the Aspirations, but it does not aid other specifics in their joyful or serene expressions and desires.

The Specifics of Love:

The tentative analysis of the Aspirations shows us that the second faculty of the group, Love, is the most static of even this static function. Its specifics are good-will, trust and philanthropy. The use of the word Love as a faculty name is in the impersonal sense, philo, to do well for or well by or exercise good-will toward others, because of impersonal love or affection.

The Specific Good-Will:

When good-will is very large it widens personal interest and the social view; it prods one to renew every effort that has any prospect left in it whenever there are others to be benefited by the action. Whatever may be the selfishness and
aggression that stand back of the individuality in the Will regions as incentives, the specific good-will takes its own part unselfishly, or generously, if one may so state it. Good-will has toleration in it, and the feeling of forbearance. It is easily seen why these specifics of Love are aids in promotion.

The Specific Trust:

The second specific of Love is trust. This trends to give every problem a chance, like the fair hunter who spurns a dead certainty in his sport. Trust usually dislikes the drastic attitude; it expects changes for the better whenever there are opportunities for improvement; it advocates pardons and mercies and generosities as parts of the struggles toward ascendency and conquest. Its low power was one of the depressing states of mind in the old Roman life; there few trusted each other, few had the aspirations that should have been fit companions, mentally, for their harsh and sometimes exalted ambitions. Nor was it simply true of those in power; the common man was equally dependent upon the brute force of his arm—as are some other mass philosophies of a late date,—on the substitution or rigid order for a blended structure of aspirations and directive laws. To make an evil vicissitude a cause for never doing a trustful act is to shut oneself in a rather dark cell.

The Specific Philanthropy:

The specific philanthropy, blending from above with Reform, is the most dynamic expression of Love in the nature of generosity in aid, of compassion in the emotions, of humanity in all attitudes of punishment, in all recourse to power.

Philanthropy does not imply the absence of a true sense of justice, but the desire to place the prospect of reciprocity in the balance, to give opportunity for growth in oneself and others.

In Fig. 442, Booth-Tucker, Faith and Love are very large, as are Amity and Reform. The slender lower face has little power in competition with these high Aspirations and friendship faculties. The synthesis, intuition, foresight, and observation in the nose, the vocabulary and imagination in the side head, with persistence and self-esteem in the chin and cheek, are the supporting powers in this mentality. The faculties of Devotion and Heredity in the under lip are very large,
while Parentity, Reverence and Patriotism are medium.

The rugged, varied, widely dynamic and intellectually powerful face of Franklin crushes into conformity with the Intellect and the Will the whole region of the parentheses, including, too, the enormous faculties of Parentity, Reverence and Patriotism in the regions below the under lip.

The comparison of these faces—that of Booth-Tucker, emotional, imaginative, ethical and worshipful, with the face and character of Franklin—is a particularly interesting study in the contrasts of emotions.

The Specifics of Hope:

The specifics, or subfaculties, of Hope are enthusiasm, zeal and exaltation, located beneath the alae of the nose, and giving by their size fullness to that region within the upper curve of the parenthesis. We have changed the term urbanity used in the analysis tables to exaltation, the latter word more fully expressing the specific ability.

Hope has less freedom in its indexes so far as extreme variations are concerned than have Faith and Love, but the ratios can be determined just as clearly. The flesh here is often thick and full, its proportions to the whole face high and marked.
The Specific Enthusiasm:

One hardly needs to define enthusiasm as a specific, in its ordinary creation of emotions, but its effect as a stimulant to enterprise is often overlooked or underestimated, because enterprise of a commercial nature is supposed to be largely a product of cold facts and calculation. As a matter of fact there is no other branch of human knowledge or accomplishment in which chance and incident are more potent factors, or where enthusiasm is more involved in the progress or extension of the work in hand.

Earnestness and optimism are segments of this specific. Words, like clothes, have their vogue, are often worn threadbare, but the things or attitudes they represent do not change as frequently. Enthusiasm gives an expression of vigor and intensity that tends to throw Messers. Gloom and Grouch out of the factory as well as out of the office, and the firms who employ these mental gentlemen as executives, superintendents, foremen or employees are destined to involuntary retirement.

The Specific Zeal:

The specific zeal is another expression of Hope, generally more constant in its force, and more specific in its expectations, than is enthusiasm. Zeal has in its forces somewhat of the anticipation of struggle as a factor of success; it urges on against doubt, defeat—and other well-known d's.

The Specific Exaltation:

Exaltation is that activity of the faculty of Hope that arouses one to a high sense of accomplished results. It often does this when the results are still potential, in posse, having the power to be what one hopes for. Thus we see that exaltation does not alone concern the past or present, but also the prospect of the future. It is in this a true tonic for struggle, acting in advance of the time or place of greatest stress, trouble, or success. It previsions or anticipates a successful to-morrow of to-day's failure.

One can readily see why the faculty of Hope has such power in beating down the poison of defeat, in bearing up under the oppression of illness, in returning one to the contest in commercial affray, and why it acts as an apt support to the courage of Defense or to the rigor of Destruction.
To the man of science, to the artisan, to the mechanic, or to the financier—whatever the trend of one's life-work—the rare accomplishment brings its own stimulant to the specific exaltation.

The Aspirations in Employment:

The Aspirations have another mission in the mentality, one that is growing more powerful in the new atmosphere of commercial and industrial life. That mission is the creation of intellectual courage, the courage to indorse or practice what one thinks is right. One may say, in fact, that these are creating the new atmosphere, the open-mindedness that accepts the reasonable fact, the new method, the accomplished thing, without forever and always condemning what one does not understand, while still refusing to pay for an understanding. We believe it was Lord Bacon who told the critic who said that he could not understand his (Lord Bacon's) argument, that it was his intention to furnish the Honorable Lord with facts and other evidence, but that he was under no obligation to furnish him with an understanding.

The "Man Higher Up" is again returning to the concept of the French and Belgian crafts, the concept that in the world of production enormous values may be found in the mentality and the Aspirations of the Man Below; that sometimes the locked door keeps more value out than it secures within; that the man who discovers a new truth, a more practical way, a surer process, a larger incentive, may have already done his part without making of it a gratuity to the pessimistic objector who berates him. Men who do unusual things are seldom heralded, but in the shop, in the office, in the world of invention, ways are being found to discover the potential in men, to find the unexperienced powers they do not know they possess. The commonest men may possess high Aspirations and may feel the exaltation of their accomplishment, and it is the appreciation of these intellectual or emotional states of their minds that the new industrial age is beginning to recognize, to utilize, to encourage, by representative meetings in the shop, office, and after-hour council. When employment selection, management, and promotion settle down to the fundamental basis their importance warrants, the Office of Personnel will be the great place of appraisal of capabilities, motives, vocational aspirations and products of every individual hired, educated or promoted. A suitable shop for a
man's mentality is as important as a suitable shop for his body.

Some one asks, "Why should the personnel manager care about Antonio's aspirations?" But Antonio cares for his own aspirations, and one Antonio employed a year is better than ten Antonios a month each; so, to some extent, up to the top. It is natural that a man should copy his official superior rather than his official inferior; to imagine himself moving upward rather than downward or as standing still; to praise those above himself, and to criticise in both directions; to break the line of promotion next below himself and stepladder the line above. If a man has evidence that somewhere definitely among the vocational powers above him there are friendly and sincere interests, he will bear heavier criticism, will respond with easier initiative, will accomplish more with a given amount of nutrition, or direction, will forget vocational wanderlust, and repay in full the investment of superior intelligence in stimulating the best of himself.

Incentives in the Aspirations:

. Many persistences and struggles that are attributed to Ambition are in reality the outgrowth of the Aspirations, are desires rather than executive and other dynamic purposes; so many of the efforts toward congeniality are aroused by feeling rather than by any intellectual conception of either ethics or good manners.

Thus face a, Fig. 443, of Victor Cousin, the noted French philosopher, has extremely moderate ambitions. For nearly fifty-four years his Aspirations led him through the enormous struggle of scattered fragments of psychological and social philosophy of his time; kindly, intensely, critically and profoundly weighing the generally abstract and impractical metaphysics of the verbalists, or trying to harmonize their thought with his own, or influencing in particular those who opposed him in the profounder views. Thus we often find that the Aspirations hold men constant to one great life-work, where on the other hand the Ambitions are far more inclined to bound from one aim to another. The dynamic Ambitions are restless even in success.

Face b, of a great college coach, has only moderate belief, confidence, philanthropy, and trust, but it has large good-will, enthusiasm, zeal, exaltation and serenity. Dignity and Stability are powerful, controlling, and supported by many of the
other specifics. The balance of Will and Intellect, the presence of nutritive vitality, the refinement in the expression of the mouth, are evidences of ability to control men of material refinement, of a disposition to manage without ostentatious effort, and to set a temperate example in group action.

**Some Vocational Relations:**

Vocationally, the virtue of these static faculties lies chiefly in the fact that they cannot realize failure, loss, or defeat. The "feeling"—Faith, Love, or Hope—that success is hidden somewhere in the clouds and shadows and in the turmoil of protracted effort, has carried many a vocational crusader, no less than religious ones, over the entire course.

At all times these faculties act like tonics to the rest of the mentality. They are an antidote to that mental attitude—self-depreciation—which causes many a capable man to become in middle life practically a human derelict. They prevent one's becoming pessimistic or long remaining dispirited—"Hope springs eternal in the human breast," when these faculties are large in the human head.
The activities of these faculties renew one's confidence in one's possible individual accomplishment, even after recurrent failures. A man having these faculties large would have more power of rebound, would be much harder “to down” than would a man who was equally capable intellectually, but who was not sustained by the tonic influences of these unreasoning faculties.

The degree of power of these static faculties in a man's mental make-up should always be considered by the vocational counselor, especially when the man being vocationally analyzed is a candidate for a position where there are liable to be many discouragements and set-backs.

In the man who has large or very large Aversion, or Destruction, or Economy, these Aspirations have a restraining effect upon some phases of hard and drastic purposes. Sometimes men of very large egotistic specifics are moderated into people of very companionable dispositions by the congeniality, and the impersonal influences of the Aspirations, especially when the faculties of the Culture group are fairly large.

**Dangers of Extreme Emotional Influence:**

When the faculties of Aspiration are disproportionately large in comparison with the leading intellectual and executive faculties, they may, if unchecked, lead a man to overweening self-confidence and to unwarranted optimism. Colonel Sellers with his prospective millions is a fine fictional example of this type. These faculties can modulate the foolish man as easily as, if not more easily than, they can modulate or materially influence the wise man.

Their influence is adverse, vocationally, when they key a man's enthusiasm up to so high a pitch over his possible advancement that his intellect does not take due cognizance of the change of abilities required in advancing positions, even in seemingly the same line of effort or work. For instance, a man having disproportionately large faculties of Aspiration and only limited analysis, who is a good bookkeeper, might feel that he could become an expert public accountant, and might in consequence become dissatisfied with his right vocational job, bookkeeping. Bookkeeping can be learned by rule and method provided a man has fairly large Form and Number faculties, but accountancy is the solution of equations
having many different and unexpected factors, where large analysis—not to be learned of books or rules—is required.

The vocational counselor should aim to steady a man who has exceptionally large faculties of Aspiration, should give him some understanding of his relative mental powers and their probable bend—an understanding that may serve as a balance wheel. Fanatics usually belong to this emotionally unbalanced class.

Many illustrations of the adverse effect of the overtopping influence of the faculties of the Aspirations are seen in those who aspire to the more difficult vocations, particularly to the professions and to executive fields where a complex mentality and fine quality are essential for success, where the requirements for vocational accomplishment lie beyond the accumulative faculties—the Sensations, Perceptions, and Retentions,—but in whom the higher faculties are not large enough.

A man is often able to gain the information necessary in a particular vocational direction by virtue of his good-sized accumulative faculties. Such a man may be an "honor" man in his college "exams"; nevertheless, he may be quite lacking in some of the necessary mental equipment for success in the particular profession in which he is scholastically well informed.

Professional practice demands that the accumulative faculties and their products be supported by some strong elaborative and executive specifics. The thousands of lawyers, doctors, dentists, oculists, teachers, architects, engineers, and other professional men, who fail in their chosen professions and then succeed in some chance vocation, is evidence of the folly of trying to make a man fit a vocation for which his mentality is unqualified, even though he may be emotionally attracted to that vocation. Of the innumerable "stage-struck" girls—that is, the girls who are emotionallly attracted to the art of acting—probably not one in ten thousand has the mental qualifications of a histrionic artist.

If a man who has prepared himself for a profession in which he cannot succeed in actual practice, because of the lack of certain essential elaborative or executive faculties, has the Aspiration faculties large, he will doubtless be much longer in finding out his professional deficiency than he would be if his judgment of himself were free from emotional influence or bias. Some men never make this emotional self-discovery, notably as among ministers and other teachers who feel that they have "a call" to their work, although their lack of the
right order of specific predominance may have in it clearly insurmountable vocational deterrents.

Contrast of Aspirations with the Lower Will:

In many of the great executive vocations, men with powerful Aspirations and Culture faculties realize the need of the power expressed by the lower Will specifics, and at the command of their own Intellects temporarily exercise and exact destructive forces, do destructive or oppressive acts, wholly out of consonance with the better nature of themselves. In the great war, men were daily heart-sickened by the necessities of their work, by the very concepts of what they were expected to do, must do as a part of their uncongenial tasks. Others there were who saw only the victory and their own fruits of victory, who coldly calculated the destruction as a game of ambition, a normal lust for conquest, the life-debt of the present to their own gainful future, who reckoned the lives and bodies of men as no man of spiritual intention could freely account for the lives and bodies even of the sensing brute.

As an illustration in point, take the leading generals of such a war as men had hoped could never come. Compare the faces of one who had worked to prevent and of one who had struggled to create it. "In the face of von Hindenburg, and in eight of his associate generals in less degree only by comparison with himself, one sees what appears to be well-nigh the ultimate of evil genius. His heavy cheek, sunken upper lip, and sagging jaw show hardness and destructiveness. Contempt for the humanities is indicated by his flat forehead. There are signs of scorn for all high aspirations. The face is not only wide, heavy, and coarsely modeled, but it hangs low from the eyes. The upper forehead and upper lip have in them no indexes of cultured emotions, no powers to neutralize the disposition to utilize human life for selfish or brutal ambitions. Dominant signs of merciless strategy are to be seen in the combination of the heavy face with the straight-drawn parenthesis of the mouth and the end and flared wings of the nose. Inordinate memory is shown by the creviced regions back of the brows. The combinations of heavy base cheek and box-ended nose indicate a power for constructive executive decision, along with cold-reasoned harshness.
“Hindenburg had great ability to visualize enormous masses of men and to mobilize them as a vast machine, apparently indifferent to their sacrifice as human beings.”

His analysis-line retreats at Inspiration, Amity, Reform, Sociability, Faith and Love, and rises somewhat at Hope, then again retreats at Economy.

The enormous Industry, Liberty, Caution, Aversion and Destruction depress the line of the Intellect, notwithstanding the great breadth of the forehead.

We have superimposed the outline of the head and forehead of Foch over that of von Hindenburg, with the auditory openings level.

If the student reads the analysis of Foch (the circle-line analysis), he sees that it is dominant at Reason, close to the maximum at Construction, runs high through the Culture, Aspirations, Rulership and Industrial groups, and retreats at Wealth, Commerce and some of the senses.

At Aversion and Destruction the face narrows markedly when compared with the nose, temple and zygomatic arch. In response to the tall head, the upper lip is so full, broad and expressive, that the base of the nose seems to retreat, to set in a hollow between the banks of Dignity, the Aspirations and praise.

In contrast with these faces of men cast in voluntary or involuntary rôles of destructive destinies, the faces of Fig. 447

*Extracts from article in People's Magazine.*
are a relief. These are portraits of two wonderful women, talented, courageous and mentally beautiful—Josephine Evans and Jane Addams.

The Aspirations are high, supported by the Culture group, and by almost too evenly balanced Intellect and Will faculties. Face a was devoted to the philosophy of mental life and sociology, to the study of woman's place in the world of civil and educational life. Face b has a tinge of melancholy, wrought from its years of profound experience in guiding youth and the wayward into paths of good intentions and worthwhile doing, in advocating public eudemonic reforms and social advancement. The executive, equable temperament, the strong Parentity and Patriotism, the large Inspiration, have led to an inspired life.

There is an important lesson taught by these faces and their indexes of clear balance of favorable powers in the high regions, without extremes of emotional vagaries, and without the conquest-lust for personal gain arising from the low regions, yet controlling and directing along paths of uprightness others who do not possess the power to so act on their own initiative.

The vocational nature of extreme specifics depends much upon the nature of the specifics and their being so
grouped that they do not drive one into erratic or impractical efforts. The appetites, high emotions, and the low Will faculties are the regions most liable to ill effects from excessive dominance, or from the other extreme, deficiency.

Extremely dominant Aspirations and other high range emotions do not often destroy the mental or social status of the individual, but sometimes depress his vocational usefulness or security. When these emotions are deficient they often have a direct vocational demerit effect.

Extremely large appetites and defensive and impulsive faculties are often vocationally injurious, as already described under their own lessons, and often their marked deficiency is a vocational deterrent.

**Indifferent Aspirations:**

Very often we have found that the sullen and the moody are so from the mental fatigue and antipathy caused by working at the wrong job; that a change of vocation has changed a querulous and irritable individual into a satisfied and genial worker, that the indifferent and neglectful man finds himself engrossed and made enthusiastic by a new work of which he had no thought before. Many quarrelsome and sullen people are so because driven to despair by the innocent or other actions of those surrounding their home life, and go to their work with a mental tack in their disposition shoe.

The class in general who are malicious and unreliable from choice rather than from lack of knowledge of right, who enjoy their perversity, who find pleasure in their general meanness, are the kind for whom the counselor and employment manager should keep the unstuffed club in a handy place. The egotism of enforced attention is not easily reduced by milder means. Small Aspiration or Culture faculties are slow growing and require reviving more often than large faculties.

The sources of eccentricity in vocational life are very many, seldom vicious or at least called so, and are generally subject to counsel, to utility promotion, or to some specialized work that is not easily carried on by the general run of employees. If there had never been an eccentric individual, the world of affairs would doubtless have moved much more slowly. The Merton Method as readily finds the virtues as well as the demerits in the mentalities of those so specialized, as in those of more evenly balanced dispositions. There are probably thousands of cases of mental or vocational aberration, not
Seneca

Plato

Scipio

Hier Savonarola

Achilleides.

Ancient Rome's first great orator.

From La Clerc's Histoire de la Méditation.

Jacob Behme

Mirabeau

Jacob Cazabon

Milton

Ch. Montesquieu
extreme enough for the asylum or the penitentiary, yet which neither the counselor nor the psychiatrist can fathom or correct. But the great majority of such individuals can be beneficially advised and directed, understood and set right, if their vocations are rightly chosen and their Aspirations and Ambitions given what seems to them to be the best incentives. Some exceptions we have noted as those in whom the balance of mental power is too strongly in the wrong generating region of their mentalities.

**Aspirations and Social Relations:**

Under the Law of the Mental Ellipse we have shown that the Aspirations are social faculties, at the top of the mental organism, the last to become generally dominant in the mass of mankind, and that, like all feelings and emotions, they do not necessarily act either logically or consistently. Generally their forces are attractive to or are attracted by what harmonizes with themselves or what gives them the feeling of security or gratification. The description of their faculties, Faith, Hope, and Love, implies these facts; their influence on the individual proves them to possess these dispositions. In all their influences we realize that they have a social basis.

**Demand for Recognition:**

The chief demands of the Aspirations are for recognition from what they esteem to be in some way their superior. All worshipfulness has in it the recognition of at least beneficial relations, some belief in the power to aid and give security. But these faculties have in their scope of action no means of measurement, no power to realize exact values, but such sensibility as seems to satisfy or to gratify themselves.

**Their Consequent Indifference to Equality:**

The Aspirations thus seek and feel recognition, whether or not it is received from their equals, or whether they ever expect to attain an equality; one man is gratified by a possibility of success that another man would spurn; one is satisfied by evidence wholly inadequate in the opinion of another; one man is depressed by reverses that to another man would feel like trifles. Equality of interest, of recognition, of evidence of success or security, of defeats or of troubles, is
found to be as relative to the aspirations of individuals as are their varied talents.

But Faith, Hope, and Love, as vocational factors, as vocational forces, must nevertheless be reckoned with; are worth while to study and measure in the individual. The Ambitions seek power; the Aspirations seek social recognition and give a sense or feeling of security.

Aspirations the Self-Element of Personality:

Men may admit the fact of superiority of others in matters of ability, wealth, power, or any other quality except personality. The Aspirations are at the basis of this. It is proved by the fact that men are willing to trade places, conditions, aptitudes; that they wish they had other men's skillfulness, talents, money, recognition, good looks—almost any other individuality matter, except personality, except the thing they look upon themselves as being. We have never known a man either so high or so low in the scale of human accomplishments or quality, that he wished himself someone else, that he did not wish to be recognized as himself, or to remain the person he thought himself to be.

These facts have an intensive bearing upon the matter of industrial relations, upon the problems of personnel management and control, upon the preferred attitude and actions of employer and employees.

Aspirations Affected by Indifference:

The Aspirations of the individual are intensely affected, favorably or unfavorably, by the degree of interest or of indifference shown them; the larger the Aspirations, the more sensitive they are to either attitude of others.

The pride and self-esteem of large Ambition may be indifferent to personal recognition from any particular source; large firmness, perseverance and fortitude may override even antagonism for the sake of their own ends; but it is different with Faith and Hope and the social Love.

Belief, confidence, serenity, good-will, trust, philanthropy, enthusiasm, zeal and exaltation, are not aroused and sustained by, or even neutral to, indifference, neglect, or rebuffs received from sources from which the opposite disposition is thought to be due or is expected. Their being affected one way or
another is not even under voluntary control, however much voluntary power may be brought to resist their influence.

Reading over the nine specifics of the Aspirations certainly reveals much of the cause and origin of loyalty to friend, firm or cause.

These specifics of the Aspirations have in them a decided influence toward reciprocity in loyalty, a social reciprocity similar to the political and industrial reciprocity of Liberty. It is equivalent to saying that loyalty should not be one-sided, that vocational loyalty does not solely arise in the wages paid, but is a gratification and mutual responsibility that rests equally upon all people who must act with confidence in and dependence upon each other.

Just as a man works more easily who loves his work, so will he work more easily who esteems his concern, who feels a counter-current of interest and respect, a return of goodwill that would stand some loss in return for loyalty.

An employment manager, superintendent, foreman, or executive, may carry to the employees much of the intentions and aspirations of the concern, may stimulate the employees with a certainty of constant intention toward their betterment or security, but it should be in its nature that of direct representation.

It may be interposed that in these days of corporations and large concerns it does not matter whether employer and employee are affable or inaffable, relations or functions recognized or unrecognized; that the magnitudes of either party prevent personal or individual recognition. We are not making a plea for comradeship, or for waiver of responsibility in wage earning, but for such form of industrial encouragement, individual prospect, and vocational security as is consistent with the position held.
THE STATIC INCENTIVES

The Social Affections:

It is in harmony with this treatment of the Aspirations, that we should describe, even if briefly, the Affections that are the chief incentives to vocational effort, and that complete the range of human mentality.

In our study of the Law of the Ellipse we described the nature of the static regions of the mentality as consisting of the Affections, mentally occupying the central zone around the brain, and acting under the nearly equal influence of the forward and backward centers of the brain.

But whether so located or not in the mental organism, we know that the regions of specific influence in the face are those marked for the Aspirations in the upper lip, above the Culture faculties, and for the function of Sexation in the red part of the under lip, with the strictly Parental and Family regions just below those of Sexation, in a rather narrow horizontal band above contempt.

With the elaborate tables of tentative analyses of these functions and the fact in view that these faculties are somewhat massed in their effects upon vocational aptitudes and relations, we do not need to treat them extensively.

TENTATIVE ANALYSIS OF SEXATION

<table>
<thead>
<tr>
<th>Desire</th>
<th>Adoration</th>
<th>Yearning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winningness</td>
<td>Persuasion</td>
<td>Sweetness</td>
</tr>
<tr>
<td>Ardency</td>
<td>Fervency</td>
<td>Passion</td>
</tr>
<tr>
<td>Mating</td>
<td>Affinity</td>
<td>Transference</td>
</tr>
<tr>
<td>Procreation</td>
<td>Fecundity</td>
<td>Spirituality</td>
</tr>
<tr>
<td>Perpetuity</td>
<td>Offspring</td>
<td>Conservation</td>
</tr>
<tr>
<td>Luxury</td>
<td>Fervor</td>
<td>Fondling</td>
</tr>
<tr>
<td>Amusement</td>
<td>Companionship</td>
<td>Romance</td>
</tr>
<tr>
<td>Gratification</td>
<td>Harmony</td>
<td>Concord</td>
</tr>
</tbody>
</table>

TENTATIVE ANALYSIS OF PARENTION

<table>
<thead>
<tr>
<th>Parental Love</th>
<th>Youth-love</th>
<th>Tenderness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authority</td>
<td>Control</td>
<td>Power</td>
</tr>
<tr>
<td>Providence</td>
<td>Solicitude</td>
<td>Indulgence</td>
</tr>
<tr>
<td>Filial Love</td>
<td>Piety</td>
<td>Veneration</td>
</tr>
<tr>
<td>Service</td>
<td>Dependence</td>
<td>Attendance</td>
</tr>
<tr>
<td>Modesty</td>
<td>Gentleness</td>
<td>Diffidence</td>
</tr>
<tr>
<td>Home Love</td>
<td>Domesticity</td>
<td>Public spirit</td>
</tr>
<tr>
<td>Clanship</td>
<td>Nationality</td>
<td>Tribalism</td>
</tr>
<tr>
<td>Earth Love</td>
<td>Nastorianity</td>
<td>Abidingness</td>
</tr>
<tr>
<td>Pastorality</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FIG. 450

FIG. 451
We have written the faculties and their subfaculties, or specifics, in the tables in the order of their local relations in their regions. Thus the specific desire of Sexation is near the mid-line of the under lip, and the specific gratification is nearest the corner of the mouth. Parental love is near the mid-line under the margin of the mucous membrane section of the lip, and the specific earth-love near the corner of the mouth, and read in that order, as shown in the analysis tables. These blend with each side in general or abrupt contours in ratios to their sizes.

It is found in every tentative analysis of the Affections, even the Aspirations, that the terms of definition are less definite than are the same degrees of analysis in the Intellect or the Will.

The Vital Sensations:

In the vital Sensations the specifics vary in definiteness somewhat in accordance with the conscious recognition of the effect, and with the part duplication of the particular parts of the function performed.

Another distinction also makes a tabular statement of the vital Sensations difficult to make distinctive in comparison with the definiteness of the formal sensations; this is the fact that one should include in the table only those factors, or abilities, the function itself performs and not the result of the sequent actions of other mental and physical organs. Thus the chief stimulant to the appetite is hunger; its gratification chiefly through two distinctly different senses, the senses of taste and smell, and the result, growth and regrowth, are largely performed by a number of other specifics in conjunction with the faculty of Appetite and with various organs throughout the whole body. The result of a large Appetite would appear in the whole individual because of its relation to the nutritive vitality of the whole individual. A large Impression would seem to be far more restricted, though not necessarily so.

The Appetite would record itself markedly in the size and constitutional disposition of the individual, while Impression would markedly record itself in its own particular kinds of pleasures, desires and actions. The effect on the body of large Appetite is often depressed or increased by the action of the other governors of the body, as the nervous system, motive system, etc., while a single inadequate organ of the body may depress the general nutrition of the whole.
The vital Sensations which have occasionally been referred to in the text by their faculty names, Impression, Feeling, and Appetite, are in many ways of vocational interest and importance. The senses of smell, taste, feeling, touch, and the nerve-force sense, are all gathered in this group.

Those vocations that require the critical ability and exercise of these senses should have the particular specifics very nearly as large as, or near to, the dominant; in some vocations one or another should be the dominant.

The faculties of Impression, Feeling, and Appetite are revealed by cranial signs, although the facial regions of influence are superimposed over the brain regions, and thus represent both. The lower range specifics, touch, motion-sense, and growth, are apparently in the central underneath regions of the brain, and probably closely mixed or blended over a considerable surface given to the less specialized but widely distributed forms of sensation. Thus our only means and place of measuring the size of these specifics is by measuring the proportionate cranial width in the regions marked for the specifics that are exposed.

In the analysis tables used throughout the lessons there is a variation from this order of tabulation, due to an effort to make the equations more easily drawn and understood by the student; the order of their local relations is, however, as given here.

The relative width in this region indicates the individual’s sensibility to organic quality (QU, Fig. 452), that is, to the quality of living things or those that have the energies that markedly influence the nervous system without destroying its tissues, and have various effects ranging from anesthesia to coma. Some men are very much more sensitive than others to one or another of these organic effects; some gain greater

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**TENTATIVE ANALYSIS OF IMPRESSION**

<table>
<thead>
<tr>
<th>IMPRESSION (Sense of)</th>
<th>Pain</th>
<th>Therapy</th>
<th>Toxics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anodynic</td>
<td>Coma</td>
<td>Stimulants</td>
<td>Somnolents</td>
</tr>
<tr>
<td>Agony</td>
<td>Ectomelons</td>
<td>Narcolesys</td>
<td></td>
</tr>
<tr>
<td>Impression</td>
<td>Sedatives</td>
<td>Nervolent</td>
<td></td>
</tr>
</tbody>
</table>

- **RADIANCE (Sense of)**
  - Pleasure: Difference, Buoyance, Personality
  - Nerve-Spheres: Consciousness, Nerve-Power, Recursion, Consonance, Periodicity

- **TOUCH**
  - Smoothness: Plainness, Curvature, Roughness, Adhesiveness
  - Friction: Viscosity, Cohesiveness, Softness
  - Hardness: Elasticity, Adamancy

**FIG. 453**
immunity than do others to the effects of hypnotics, anodynes, anesthetics, antispasmodics, stimulants, sedatives, emetics, cathartics, irritants, etc. The smaller the faculty the greater ease in gaining immunity. The treatment of this subject properly belongs to mental medicine and the medical staff of the concern.

The specific radiance is the sensibility to radiant nerve energies from others and to the nerve energies of the animal kingdom, as well as the sensibility to one's own vital state in general.

It is probable that this specific has a radiance of nerve energy that may influence others, but the difficulty of solving the problem is increased by the fact that all of the nerve system has some quantity and form of energy radiance, and we believe that in addition to this purpose radiance, the nerve system, in spite of its high insulation, has a variable corona loss.

Individuals of great vigor and high nerve tensions impress us as having high potentiality, and some people do not differentiate this from a marked personality. However, there is a great difference. A man of unusual capability and quality does not lose these qualities under fatigue, distress or discouragement, while generally the radiant energies are greatly diminished under these conditions.

The specific touch seems to be lower or beneath the temporal lobe, in the uncus and hippocampal regions of the brain, but it gives width and fullness to the regions marked TO.

The specific smell is slightly back of quality (SM), and extends under the temporal lobe, blending with the specifics of heat (HE) and motion (MO). The specific taste (TA) is in a broad area of the lateral occipito-temporal convolution and the central portions of the inferior and middle temporal convolutions, blending downward and underward with hunger (HU) and growth (GR).
The Aspirations

The elaborate tables will act as descriptive text for these faculties and their specifics, and those elements of feeling and consciousness possessed by them; their degrees of power are expressed by their size.

Vocations requiring an acute and lasting sense of smell, or of taste or of touch, are quite numerous; but so distinctive are these senses in their vocational relations that we hardly need to include the main list here. Among these vocations, as illustrations, one may note acid makers, bakers, caterers, chemists and apothecaries, cigar makers, confectioners, and tea, coffee and spice dealers or experts.

The judgment of size in these three faculties is based upon the width of the head in the regions influenced, just as is the judgment of the faculties of Number, Language, and Construction.

Some Bodily Relations:

The effects of the size of Feeling and Appetite upon the structure and weight of the body, is of importance to the counselor. As a general rule when the head is wide in its central regions, the individual inclines strongly to fleshiness. It does not hold true that the wide headed person is or always will be by mid-life quite fleshy; many individuals inclined by nature to accumulate flesh and become comparatively heavy, have such intense nervous and motive action that the structure of adipose tissues is prevented, and the weight kept down as in a wasting disease.

But it does hold good that a very great majority of persons with wide heads develop fleshiness, that extremely wide heads do so almost invariably, that those with such head widths regain fleshiness rapidly when it has been reduced by any cause that is then relieved.
It also holds true that very few fairly narrow- or very narrow-headed individuals become fleshy under normal conditions, or easily stay so when "built up" by any special care that would be excessively fat-producing. This is particularly true if the head is narrow in the regions of the vital Sensations. Sight and hearing are, of course, sensations, or special senses, but are formal and Intellectual, and their size has little bearing upon the physical constitution; large musical or number ability is more apt to be associated with large vital Sensations than is Attention, Memory, Form, or Color. The various specifics have a specific bearing upon the various organs, or upon the functions of the organs, of the body, upon the comparative size of muscle-regions, and, in a much less specific way, upon the osseous system, but even in this highly immobile structure, the mental specific influences are often distinctly marked in the bony processes and shaft structures.

Some of these effects of regional influences upon the so-called physical body have vocational value, but the subject is too extensive to be treated in this course.
LESSON THIRTY

Quality and Power as Expressed by Modeling and Texture

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by
HOLMES W. MERTON
General Considerations; Principles and Definition:

From elder-pith to lignum vitae is a wide range of fibre grades, working qualities and structural values in woods.

But this range of quality in wood structures is narrow in comparison with the textures established by the possibilities of accomplishment in the nervous system of living things or the mentality of man.

The principle of Quality of Structure as a quantity gauge as here used has in its meaning the nature of nerve tonicity, endurance of effort, complexity of cell and fibre forms, and quantity of perfection in their mental activities; there seems to be no single word that can describe them, and the term Quality is here used because it is the nearest in meaning to mental and vital conditions under discussion in this study.

General Considerations; Visible and Invisible Differences:

While there are visible differences in cell structures, depth of convolutions, complexity of nerve paths and tissues, it can hardly be believed that these observable differences are great enough to account for actual and recognized differences in the quantity of mental abilities of individuals.

We may say that there is a condition in the living world that enables one nervous system to accomplish vastly more than can another similar one; that one is endowed with mental or vital or motive possibilities to which another apparently equal nervous system cannot nearly approach.
It may not be within the scope of present knowledge to describe the reasons why this variation of apparently equal organs exists. Not only in men does this enormous difference exist, but in the animal kingdom, as illustrated by the mental ability of the bee and the serpent, in which one nervous system is many million times larger than the other.

Nor is this difference in ability in simply one phase; in some instances it has extreme sensitiveness to outward conditions, in others great mental ability with comparatively low sensibility; in some individuals it is associated with uncommon refinement in conduct, in others with enormous power and yet with apparent lack of refinement in conduct; and in others there is ruggedness that is capable of extreme burdens and resistance to mental fatigue.

Hence we find that terms indicating sensitiveness, refinement, vitality, and many other actual conditions, are not broad enough or definite enough, or the conditions constant enough, to answer our descriptive purpose or the facts included in our meaning.

Many people, among them able philosophers, have thought that since men consumed the same kinds of foods and were chemically much alike, that pound for pound of weight they should be nearly equal, and that the chief differences in the amount of accomplishments of different persons are due largely to variations in environment, educational opportunities, and the degrees of individual ambition to take advantage of these conditions.

The above conditions have their bearing as supports or hindrances to the progress or attainments of the individual, but they account only in small measure for the differences in quantity power found under similar environment, or for the equalities of abilities found under very unequal conditions. It is important to the counselor to realize these facts; it will save him considerable energy.

Other thinkers take the profounder view of general hereditary endowment as the basis of quality, which is, however, only another statement of the fact that some are more highly endowed than others of the same species. These hereditary sources and indexes we shall consider after the subjects of Modeling and Texture, because these latter evidences of quality endowment values and ratings are much more evident, and ancestral evidences are difficult to trace and not often within the purview of the counselor or manager of personnel.
In the text of this lesson there are frequent repetitions of the theme, in order to bring the various phases in closer relationships.

**General Considerations; Altitude of the Scale:**

A low Quality face and a high Quality face having the same shape would have the same proportions of the specifics, supposing that two such faces existed. The difference in Quality might make it possible for either man to do what the other could not. The basis of vocational choice and recommendation is thus founded upon natural aptitude, and upon organic quality; the Quality value would establish the altitude of the scale of specifics, just as a rating in capital would establish the reasonable limit of credit extension, other factors being equal.

Some form of determining the quality of the individual is an important part of any method of vocational determination, of promotion, or of making an effort in preparation for advancement. In other words, Quality is a standard by which to judge the probable height to which a man may climb in the work he is best fitted by his mentality to do.

We have seen a good many mechanics, artists, business, and would-be professional, men with the mental ratios of first-class men in their fields, but the quality was not there, and no amount of time and effort could make them anything but ordinary. In becoming good all-round carpenters, or what not, they had exhausted their volume of power, reached their climax of complex thinking or acting, and every excess effort left them at the same old vocational height. The simple fact was that they could not carry a heavier load; excess training only blurred an equal part of what they already knew; ambition made some of them appear like boasters, vocationally resembling a Cadillac body on a Ford chassis. Opportunity after opportunity only proved the futility of attempting to advance them beyond their Quality index. Watching for periods of five to thirty-five years the vocational history and predictions of thousands of clients has proved that acute Quality rating made as described in the following pages can be made from indexes independent of the experience of the individual. These should be made by the beginner in a clearly tentative way, giving the benefit of any doubt to the favorable side, and gradually gauging the judgment to severer boundaries as proficiency becomes greater. The several means
stand in preference in the order described, but this is also
the general order of their decreasing difficulty of mastery, the
"past experience" being the last and easiest and simplest and
least valuable criterion of Quality grade. The reason why the
past experience of a man in a vocation is the least certain
index of his Quality is that he may have been in the wrong
vocation, or under very adverse conditions, or without suf­
ficient means. A man can make progress in the wrong voca­
tion; but it is usually at a relatively great expense of effort
and time.

It is often as great a loss to the individual to attempt voca­
tional accomplishment considerably beyond his possible qual­
ity as it is to struggle along in the wrong vocation. Converse­
ly, it is a common matter of experience to find a man failing
in a work because he is far superior to that work—a wrong
vocation—who imagines he can do no better in anything else
and "under the circumstances" has reached his stalling point,—
the top of his vocational ladder.

By knowing that his Quality is much beyond his job
requirement, one knows that he is in the wrong vocation. The higher quality work should be suggested; either a new
vocation or a more difficult part of his present one, as his
specifics indicate.

We have stated that there are various means of determin­
ing approximately the grade, or fineness, of mental quality
and the mental capital, so to speak, the man or woman has
to invest in a vocational life. None of these means are rad­i­
cally new, but their values have been heavily discounted under
the conditions that in themselves they were but part of the
problem and so were of but general use, and often, under mis­
application, they were in reality misleading. A high Quality
man choosing, or working in, a misfitting vocation, condemned
the indications of high Quality; no one stopped to condemn
the unadaptability of his misfitting vocation to himself. A
boat may be a fair craft in water, but is generally a cumbersome one on land.

The indexes of Quality need not be treated in particular
order, and different students will find preferences, based upon
their own natural qualities.

Of the various indexes of Quality, the one that is most
generally observable is the modeling of the face. But this
facial modeling may be misleading in its significance unless
the character and tone of the modeling are carefully observed
and fine distinctions are drawn between the indications of the different kinds of modeling.

**The Inscrutable Nervous System:**

As the nervous system cannot be examined directly, judgment concerning its Quality must be based upon mental energies and the exterior signs. Chief of these is the modeling of the face, and, in the following order, the radiant energies of the individual, the fineness of the skin texture, the observable arterial and veinous structures, the mobility of the joints, the fineness of the processes of the bones, and the modeling of the hands. We have placed the index modeling first, because it is the most constant and readily observed index. It is not the easiest to read.

**Modeling as a Quality Criterion:**

If we take two faces we shall see in them the influence of the specifics, and also definite kinds of modeling or moulding of their contours. The various blendings of the margins of the features will differ in several respects; the ovals will seem to have particular tensions and textures. If one face is that of a powerful mentality, as is the face of Julius Caesar, or has potential qualities that could have been aroused to more than ordinary activities, we shall see that it has modeling that gives it distinction of a particular kind, which we may call a high Quality index. (See Julius Caesar, Fig. 456.)

**High Quality Modeling:**

The modeling of faces where there is high Quality of mentality varies greatly in degree, but it is always significant. Sometimes it is rugged, deep, and powerful, blending ovals with firm and meaningful plateaus, as shown in the faces of Michelangelo, Humboldt, and Lincoln. Sometimes it is neither highly variable nor extensive, but its effect is to give finely finished and clearly chiseled contours and consistent, well-designed, expressive features. In faces having this latter order of modeling, the indentures and hollows have finely marked boundaries; the rises from the hollows are somewhat varied in different parts of the face as if there had been exerted in every surface a design and purpose. A face of fine Quality may be comparatively smooth in contours, but every margin and relief will be apparent, however delicate it may be.
As an illustration of this blended high Quality modeling, take the two wonderful constructive executive faces, Marshal Joffre and George W. Goethals. These faces have self-evident power of uncommon amount; every contour displays the fact in itself, and taken together in the whole face the fact of their capability to do great things, the fact of powerful energies exerted upon their faces by their mentalities, would be irresistibly apparent to any critical observer.

In the character of the contours of these faces, the marginal surfaces and the indentures are clear fine Quality indexes, independent of the general characteristics or of the indexes of particular abilities that can be rated in the table of specifics.

One could say of these faces that both indicate the general traits of natural benevolence, inherent humanism, good intentions, appearance of nobility and vividness. But these traits could be possessed in some quantity by men of very ordinary power, very common qualities; but then, the indexes of Quality would be of a common order, there would be lacking those distinctions described as high Quality indexes.

Medium Quality Modeling:

Watch the faces of a thousand low-grade intelligence men and women, and observe, that however alert and active, however generally "regular" their features, there is a kind of carelessness of detail and of structural perfection, a lack of what one may call finish to their faces. Watch the faces of middle-aged and old men and women who have lived lives of transient ideas, worries, passions, small-power accomplishments—all great enough to them,—and observe the apparent lack of purpose, of definite intention, the not uninteresting but not compelling lines and contours. Such faces are moulded under the competition of the mental specifics, but the competition is not intensive.

Our aim is thus to call attention to what we may describe as medium modeling and medium Quality, or of low-toned or untoned modeling as an index of medium or low Quality.

Common Modeling; Common Quality:

In contrast to the face that has power and indicates it by fine modeling, the ordinary face may have much variety of contours, many lines, many peculiarities of features, but still lack the indexes of fine Quality and capabilities. Take as an
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illustration and for comparison with the face of Caesar, the old workingman’s face, Fig. 459, and other faces of low vocational order in other lessons.

In such faces, especially of those past forty years of age, who have only ordinary Quality of mentality, there is considerable modeling, as if they possessed an overabundance of integument with lack of skin tonicity or usefulness. The modeling in ordinary Quality faces nearly always has the appearance of being without purpose or significance—a kind of sogginess; there are unnecessary lines, relaxed contours, meaningless rolls and hollows that together betray the lack of mental order and intention. In critically studying these contours one soon realizes that they are governed by untrained or disorderly mental faculties. Sometimes these faces plainly show the indexes of numerous flitting, small activities.

Some Comparisons of Modeling:

Note the extensive modeling of face a, Fig. 460: the quantity of the specifics is disorderly, ill-proportioned, without any apparent undercurrent of energies that have directed and sustained mental effort or willful purposes, and, as far as they indicate Quality, they show it to be of a low order.

Face b has an orderly modeling; not much of it, and not sharp, clear or “careful” in detail; there is little stress or intensity in the specifics of the faculties. The face is typically Samoan, with the indexes of the easy-going, vital, beautiful-bodied, semi-cultured, semi-civilized folks of those Islands. Face b is a modeling of an ordinary orderly Quality without indexes of potential power.

Face c has clearer, sharper, and more distinctive indexes of an orderly mentality of a fair Quality and some potential power.

The moment we bring face c into comparison with face d, the cameo-modeling of the features of the latter face stand out in contrast. Notice the wings and the ridge of the nose, the contours of the eyes and of the ear. The regions of Caution, Defense, Industry and Integrity have ovals and plateaus that are full of expression; the regions of Reason, Construction, and Attention have such purposeful contours as undeniably to indicate high Quality and culture.

Face a, Fig. 461, is of moderate Quality, untensed and highly harmonic in temper. It has, evidently, never made much effort at other than the common social attainments. This
kind of modeling is the most difficult to rate; its oval features, quiescent eyes, large nose, full mouth and negative chin are interesting, attractive, non-committal indexes; in fact, however, these very conditions are a criticism against there ever being notable accomplishments as an outgrowth of this mentality. It would voluntarily surpass face c of Fig. 460, but in competition with face d of that figure would be far outclassed in intensity and organic quality.

Face b does not have extensive indexes of modeling for a face as strong and large as this face is, but the regions of the eyes, nose and chin have some very sharply carved contours that give a high rating. This face also has the characteristic of greatly varied expression. It is extremely changeable when animated, and the immobile contours—as the nose and forehead—are given considerable contrast carving.

If the student will look back over the text many examples of degrees of modeling will be seen, the study of which was left for this lesson. The Quality indexes will be found to conform, in so far as the illustrations could portray them, to the characters and accomplishments of the individuals. As an illustration, in Fig. 6, the enormous forehead
and nose, highly carved, and the delicately modeled side-face, mouth and mandible, indicate the quality of a masterly intellect.

Among the many great faces of the text are Figs. 13, 14, 15, 85, 87, 169, and 241; among the uncommon faces are Figs. 59A, 62, 229, 235, and 236; among the medium and common Quality faces are Figs. 9, 10, 45A, 141, and 192; among the low order faces are Figs. 199, 206, and 240.

Other faces fill in the ranges with these, which the student should review for Quality indexes as well as for vocational aptitudes. Some Quality indexes, as of the texture of the skin and the veins, cannot often be noted in illustrations or photographs. These seldom reveal the quality of the integument elements, nor the radiance of the mentality. Some achievement or other index must be used in these instances.

Textural Indexes of Quality:

To some extent there are Quality indexes in the skin and the finer membranes, as in the lips and eyes, when fine or good Quality gives them the appearance of tonicity and refinement, particularly noticeable before the years of mid-maturity. With or independent of this there is usually in the skin and tissues the appearance of strength or elasticity or structural tone and translucency that is “sensed” rather than seen, and that is often remarkably distinct to one who continues to make comparisons.

The best way to learn to judge Quality indexes is to make comparisons of the indexes of those whose known accomplishments have a rating value.

The Radiance of High Quality:

The vocational counselor should attentively aim mentally to sense the Quality of those he studies. This cultivation of sensibility to nervous energies or to the appreciable “atmosphere” of an individual is a process quite apart from the ordinary observation or even the intense scrutiny of the individual; it is the kind of sensibility one refers to when speaking of having intuition. Intuition is often more sensitive to Quality than it is to ideas.

Intuition is a part of the faculty of Inspiration; from Inspiration arise the mental impressions of intuition, foresight, and the appreciation of refinement. These capabilities of this
faculty, when all are active, are the origin of the broadly used term, esthetics—the art of cultured refinement, and of the appreciation of formal spirituality, although esthetics is often used as a term to describe artistic sensibility and appreciation of the beautiful, whatever its form.

**Inspiration** does not always receive all of these specific qualities in the same degree; like other faculties, it may receive one kind of impression from without and not the others; that is, it may be sensitive in one of its specifics and dull in the others.

There are other organic qualities received through the vital senses that measure some kinds of Quality; the student is referred to the faculty of **Impression**.

Sometimes the basis of what many people sense as "personality" in others is the presence of fine Quality, of an intense expression of capability, in the mental abilities of those to whom they refer.

Many very capable mentalities do not realize their sensibility to the mental quality-forces of others as distinctive forces; their attention and their own positive dispositions negative their recognition of this form of impression.

It seems impossible, however, to account for the constantly recurring verifications of
"first impressions," of prophetic impulses and sensibilities, of otherwise unexplained recognitions of dispositions and latent general ability, upon any other basis than that every one to some degree radiates a mental energy that is indexical of his general quality and dominant disposition; that every one has, to some extent, a sensitiveness to the vital or mental energy of others. The ability to estimate approximately the quality of this energy, combined with a judgment of the modeling and bearing of the individual, is the basic ability for judging the Quality and texture rating of the individual under consideration, and thus establish a place for him in the scale of possible accomplishment.

This radiant quality is not necessarily attractive and pleasing, but whether so or not indicates its volume as being powerful or vigorous or intense or capable or the reverse of these. One can realize that the presence of Robert Louis Stevenson would be quite different from the presence of Bonaparte or Washington, and that the dynamic energies of Joffre would be much unlike the harmonizing, emotive, formal forces of Viviani. Yet few people of experience would be deceived by a soft pated braggart who temporarily imitates those of high Quality.
The power of a Duse or an Eleanor Robson, of a Louise Homer or a Viola Allen, is not in the face and voice only, but in the invisible radiance of their mentalities. The compelling power of many a plain face is the force of the spirit and intention that animates it, an unpaintable something felt apart from known acts or ideas.

The stubborn setness of a "Stonewall" Jackson, the passion for human betterment of an Albert J. Kennedy, the religious enthusiasm of a Moody, the social intellectuality of a William James, are keys to Quality known apart from achievement, something that even mute meeting does not conceal.

An imitation snake does not "charm" a bird, nor an artificial cat very greatly alarm a mouse. The "natural enemy" sense in nature has doubtless something apart from hereditary or other experience; an impressibility perhaps somewhat dulled by variety among humans.

It is clear to any one experienced in the matter of human accomplishment that the majority of people in the civilized nations are of medium Quality; a minority part are above and another minority below that grade, forming, as it were, not a pyramid but a bipyramid. Thus the comparatively few of extremely
fine Quality, texture and power form the top, the gradual increase in number toward the average forms the central mass, the diminishing numbers of coarse and very common Quality forming a gradually decreasing smaller and smaller proportion near the bottom of the Quality scale.

In experience, the same comparison is found true in the requirements of the human vocations, some vocations requiring great ability and effort in order to master them or to reach distinction; others, which form the great majority of the skilled, semi-skilled and generally learned vocations, requiring good quality and considerable effort to reach a general, recognized proficiency; and below these the common labor vocations reach downward to the finally lower and lower grade low-intelligence occupations.

Neither the rate of wages nor the time required in gaining proficiency in a vocation is a generally constant measure of its required quality, unless natural aptitude is also taken as a factor in the valuation of the quality needed. The real factors of a vocational-difficulty standardization are Quality, natural aptitude, education, and time given to the vocation's mastery.

This lesson treats the matter of Quality through modeling, radiance, and other means of judging the scale of capability; the judgment of the sizes of the specifics and the matter of mental requirements of the vocations are treated in the general text.

We do not advise the student to attempt to read through intuition the distinctions in vocational abilities other than in the matter of Quality values; he will probably be misled if he does. Even a person's disposition is seldom readable by intuition, since what one gets is often the self-opinion of the person read.

Quality of Texture; Quantity of Product:

The fact of high Quality may express itself in various ways. What these ways are depends upon the vocational dominants and their supporting specifics. One of these ways may be in a narrow, intense, highly developed line—a line requiring great expertness or specific talent. Another mode of expression may be in the ability to handle and determine a great number of problems, directions, or detailed considerations. Still another expression may be found in the massing of great facts in preparation for discovery, invention, or ex-
ecutive acts. The quantity of mental effort may thus be seen in the skilfulness of a specific vocation, in the mass of activities carried on, or in the profound occasional effort.

Age and Quality Indexes:

The judgment of Quality is, naturally, more difficult in the youth than in the maturity of the individual. In youth there is present the normal vigor and brightness that has somewhat the characteristics of high Quality; there are often present the clear skin, the vigorous movements, and the appearance of nerve-tone. Generally there is an absence of highly characteristic modeling. All of these conditions test the vocational counselor's perceptions and judgment. He has a right to every assistance he can command in this judgment, including the knowledge possessed by the parents or friends, or the history of the youth's accomplishments.

Effects of Quality Grades:

When the quality of the nerve-fibres and nerve-forces is comparatively of low grade, the mental progress of the individual will be comparatively slow. The mentality in such instances stops making progress at an earlier maturity; and, usually, when the mental efforts are not frequently repeated, constant relearning is necessary, or the mentality becomes tired, or slow, or even stops short of understanding.

Low-grade mentalities generally do much better at piece-work, or where repetition makes work easy, than elsewhere. Orderly advancement is not to be expected in comparatively low-grade men, unless the appetites or some of the other senses stimulate them in a particular direction. Even then it reaches an early maximum, and it is waste effort to urge much further progress. Sometimes, as in the case of animals, low Quality men show quick response to sense impressions, especially to those of sight and touch.

When the quality of the nerve-fibres is of comparatively high grade, the mentality is capable of greater culture and accomplishment; the mental progress of the individual will be much more rapid than where the Quality is of a low or a medium grade. The mentality in such instances has initiative, versatility, and tenacity of vigor. High Quality makes mental progress a lasting process, if one's desire be to that effect. It often increases sensitiveness to poisons and stimu-
lants, and sometimes increases one's appreciation of the delicate phases of the senses.

The vocational counselor and employment manager will gradually develop the ability to discern these Quality indexes until the high culture texture will seem to have a distinctive quality, somewhat in the nature of what might be called a luminosity unlike any impression receivable by the senses. The nearest likeness to this perceptive sensibility is that described by the psychometrist and by some diagnosticians. The observer gets an impression of the tonicity, of the vividness, of the potential or possessed power of the individual that may remind him of the impression received from sounds that are said to have peculiar "timbre," or from hues that have something beyond or differing from the effect of intense luminosity, or from an atmosphere that has "vigor" in it.

But whether or not this high Quality gives an impression that can be likened to the action of any of the recognized senses, there is generally an effect that one may recognize as distinguishing or impressive.

The less powerful or capable textures are indicated by their departure from the described indications of those of high Quality.
Hereditary Criteria:

The laws of heredity are the chief laws of life; their importance in this art, or the arts and sciences upon which this art is founded, is great. But their use as criteria is quite another matter. The reason this last statement is made here we will briefly consider.

Heredity as a gauge of Quality, to be valuable, must be observed in its extension back through all the ancestral lines for several generations, because vocational endowments as specifics and the strong characteristics as traits are inherited as whole endowments or whole characteristics each from a single ancestor, and conflicting endowments may be held in suppression, that is, as "recessives." Recessions may thus be hidden for two or three generations and then, the opposition being set aside, may appear as particular characteristics.

For these hereditary reasons, one feature, as coarse hair or fine hair, light eyes or dark eyes, coarse skin or fine skin, fair skin or dark skin, or several other variable characteristics, are not good indexes of anything in the mentality as character or aptitudes, but relate only to their own particular functions. Incidental analogy is seldom logical, especially where the exceptions are much more numerous than the coincidences.

That such pigmentary and capillary traits have individually but small value as vocational criteria is proved by the self-evident fact that millions of people succeed in activities of an opposite nature from the capability supposed to be indicated by the trait, or fail in spite of having the trait supposed to indicate the required abilities.

The profounder facts of heredity as consisting of the sum total of reproductive life in the endowment of natural laws, in the predominance of temperaments, in the variation of faculty powers and the capability of changes due to culture and use—in brief, the constitution of man as a composite of mutually responsive organs,—forms the basis of this art. As some of the expressions of this constitution, the texture of the skin and the forms of the skeleton processes and local body contours are uncontradictory, because specialized, indexes.

The ancestral chains of influence in the heredity of the individual are too complex and involved, too numerous and hidden, to be of extensive use as indexes in this art, however much they are a part of its foundation. The hereditary history of the individual is generally obscure in its facts; gen-
erally only the observable effects and the known results of heredity, in the manner treated in these studies, are useful to the purposes of this work.

Expressed Ability; Experience:

It sometimes happens that the vital and motive systems of an individual do not give such clear indexes of the fineness of the nerve system that the latter can be determined by observation of the other two more apparent systems. When this is the case, and when for any other reason the counselor finds difficulty in judging the Quality from observation, another possible key may be found in what may be called "expressed ability."

Expressed ability, or experience, is some kind of mental ability that has been fully enough brought into action to have demonstrated a rating, a degree of power of some group of mental faculties that will be a key to the quality of the whole.

The kind of mental ability and its accomplishment is less important in this matter of judging Quality than is the amount; it is a test of Quality, or power of a particular part of the whole, in order to establish the rating of the whole mentality on the percentage of the used or experienced faculties.

In order that this past-action test should have considerable value, it ought not to be in the nature of mental jugglery, time stunts, or accidental success. A trade test proves that a man has had experience in that particular trade or part of the trade, and is useful as a Quality index just in proportion to his experience in that trade, his natural aptitude for that trade, and the difficulty and thoroughness of the test.

The past-action test as a true Quality index should be a fundamental accomplishment, prolonged enough to merit consideration.

Many youths accept positions without sufficient previous training for the work, and discredit their natural or potential abilities by lacking professed information and experience; the same fact appears in many tests.

Expressed Ability in Education:

As early life tests or accomplishments, the Quality grade may be expressed by natural educational ease in grammar, high school, or academic work; not the ability to pass every
study test, but some of the main studies, because the brightest boy in a school district with small Number might flunk in arithmetic, or, with small Language, might flunk in grammar or history. The rating should be based upon some naturally easy, expressed "gift" or success in mental mastery.

Sometimes the test of Quality may be found in learning and carrying out some part of a vocation suitable to youth, preferably something requiring more than a good memory.

Time and again parents bring us good Quality youths with small or medium Perceptives and Retentives, but with large Reflective faculties and good Will specifics, yet declaring that they do not know what to do with such youths who are "behind in so many of their studies and cannot keep up with even ordinary children." Especially was there difficulty when Language or Number or object-form or fact Memory was comparatively small. Their trouble was not in their Quality rating but in their small faculties that were the ones being cultivated, while their larger abilities had not been reached in the educational system. Knowing that the high power faculties are not under study pressure, but that the low power faculties are, removes the certainty of the boys being of low quality; it makes it a negative index.

High or good Quality is sometimes readily apparent in the all-round vividness and capability shown by the irrepressible youngster who excels wherever he comes in competition with his equals in age and opportunity. His failure, however, to keep up one line of study or of work is, taken alone or without a faculty rating, no criterion whatever of low quality, because that line of study or work may arise from a medium or small faculty in his mentality. Graduation in itself, in educational institutions, is only a criterion of fair Quality and size in the faculties under instruction; the curricula in general seldom reach above the receptive ranges of faculties, and are necessarily governed by the possibility of a normal-quality graduation that can be passed by a large majority of the students matriculated. Generally the Reflective and Executive ranges of mental faculties are beyond the main curricula of the institutions of common and receptive education. Of course this does not hold true of education in the professions and higher industrial lines in Intellect specifics, but in the main the Will is still untested, unmeasured, and often unaroused to any definite extent. Here again failure does not prove low Quality, since the major studies may fall upon the small-power faculties of the individual.
When a youth or an adult "runs away from his field" of competitors, when he distinguishes himself in some line or accomplishment, when he gains an end that is much beyond the common run—then his Quality is distinguished as high or uncommon, and whether he is wholly at his best in that line is determinable by his mental regional influences, and his potential abilities are to be judged accordingly. His failure to do more than an average in any line of study or mental effort is a good criterion of average or less grade of Quality, although many youths mature slowly and are far from their best in early pre-maturity. Note suggestions under Stages of Maturity.

Expressed Ability and Analysis Graph:

The accomplishment record of a man of some experience, when taken in conjunction with his mental analysis graph, is often an important gauge of his Quality, and when known should be a part of the assessment of his natural ability as a whole. It is so much plus information added to other means; its value is equivocal unless used in connection with his mental analysis. As an illustration of this statement we cite this of many similar instances:

A young man became a designer in his father's machine shop; was a very common success after three years of effort. At his father's suggestion we made an analysis of "my dull son—the others are very capable." We urged cost and production accountancy; result, he became the ablest of the family. His Form, Color and skill were too small for designing; his analysis, calculation, imagination, mental-focus, Stability, Economy, and Defense were too large. His two years' study and three years' experience test as designer were false criteria of his Quality, natural aptitudes and industrial intensity.

It is within the bounds of experience to say that in more than a majority of people their potentially high abilities have never found an opportunity for either vocational culture or experience, and that the actual things done are not satisfactory measures of their possibilities in the right vocation or under favorable opportunities.

Some of these days the employment manager and the superintendents or foremen will jointly route their personnel, suggest preparation, give open encouragement, and predicate
promotion, with comparatively as much care, interest, and success as the chief planning and dispatching supervisors plan the course of materials for a particular piece of construction.

**Elementary Tests:**

In the consideration of Quality criteria, the question of psychological and generalized intelligence tests will necessarily arise. The Merton Method, based upon the art of reading the sizes of the mental faculty specifics by their influence upon local regions of the face, and upon a faculty constitution in the mentality, differs fundamentally from psychology.

In order to avoid any possible bias on our own part, a judgment was solicited from a number of eminently able and practical men, some of whom were familiar in practice with both methods. From these we selected the most liberal opinion, taken from an address delivered to commercial men and most closely in accord with the experiences and expressions submitted to us by army officers, educators, and managers of personnel; it was as follows:

"During the war it became necessary that out of vast numbers certain men should be so classified that the right men might be put in the right place. Thereupon, the psychologists came to the front with several practical methods to determine the mental fitness of men so far as alertness and quick perception were concerned. Various methods were experimented with, and Quantitive Psychology became recognized as a valuable aid to classification where perhaps no other method would have been nearly as practicable under the numerically tremendous circumstances. The tests consisted largely in completing sentences with missing words, making calculations that were only perplexingly simple, and unraveling problems that were only confusingly easy, but in all of them the test was against time, to determine the degree of mental agility. They all accomplished just exactly what they were intended to do; namely, to separate the sheep from the goats; they indicated men that were mentally alert and the dull-witted were passed by. No one will deny that so far as the tests went they were practical to that extent.

"So well did this method of selection result in this mammoth problem, that since the war thousands of industrial concerns have adopted much the same methods to weed out applicants for mercantile positions. The same tests are used whereby the sheep are separated from the goats, but beyond
fundamental alertness I cannot admit the usefulness of this process in commercial practice. Admitted that it does so classify, what then? Men come through with the one main fact demonstrated that some are more alert and self-possessed than others, but this is a primitive sorting that only gives general classification and does not carry far enough. In the absence of any other plan, by all means follow any course that leads in the right direction, but don't be led to believe that because a man is able to give speedy and correct answers to puzzling questions that he is qualified thereby to become a good salesman, or a skilled mechanic, or that he is destined to fill successfully an executive job. There are a few vocations that a man is fundamentally fitted for, and many others for which he is totally unfitted, and the old problem of 'picking winners' is not solved by a dozen or more tests of mentality against time."

These tests are not, of course, of the nature of trade tests, which are experience tests, and tryouts, somewhat more carefully planned and briefly elaborate than the good old-fashioned way of beginning a job in fact, and not particularly a substitute for predictive determination. Having failed in proving any
vocational values of consequence, those who have banked so much upon intelligence tests will now turn to the obviously useful trade test.

**Trade Tests:**

The utility of trade tests lies in their value as a measure of the proficiency acquired in the previous experience of the individual under test. The educational world has long been accustomed to the use of examinations as a means of determining the extent of intellectual knowledge. Trade tests had but limited application prior to 1917. Their principal use was in the examination of applicants for city trade licenses. When the United States entered the war the urgent need for experienced mechanics and artisans in a wide variety of vocations became imminent. General Pershing in France was calling for men upon whom he could depend; he needed crane operators and other skilled artisans to speed the handling of incoming supplies. Men were selected for this special work from the various cantonments upon the strength of their own statements as to their experience and ability. They were assembled and rushed to France, but upon assignment to their posts great numbers...
of them were found to be inexperienced and incapable in the fields in which they professed efficiency. To prevent repetition of this experience, the Personnel Department of the Army set themselves immediately to the preparation of trade tests that would adequately determine the degree of skillfulness of applicants and make sure that each man was as good as he claimed to be.

The success of such tests naturally depends upon the completeness and thoroughness with which they cover their particular trades. This is accomplished through the use of oral, picture, and performance tests. In the preparation of a test the Government obtained complete information about the trade from the labor union, employers, schools, and trade publications. A careful analysis of this data revealed the essential features of the trade, which were incorporated in a tentative set of questions or a task. To determine the worth of this tentative test it was tried out on a number of workmen of known degrees of ability,—experts, journeymen, apprentices and inexperienced men. Such modifications as were necessary were then made and the revised test was applied to several hundred men of the different degrees of ability noted, and in different parts of the country in order to avoid any local trade peculiarities. The results of these tests were then analyzed to determine the features that differentiated and distinguished the work of the men of the different degrees of skill. The tests with their interpretation were then ready for the examiners.

In order that the personal equation arising from the individual judgment of the examiner should be eliminated, all questions included in the tests were so prepared that there was but one correct answer to each; this answer entitled the one being examined to full credit, whereas any other answer was rated zero. One will readily recognize the significance and responsibility resting upon the analytical work which determines these questions and their answers.

The oral and picture tests indicate one's knowledge concerning the trades, but have no value whatsoever in indicating one's proficiency, skillfulness, or dexterity. It is necessary to use the performance tests to measure these elements. Even here we may not obtain a correct indication of the worker's ability, for some may produce results inferior to what they are capable of producing when not under the strain of being tested; there are others who are stimulated by such
a test and exceed their normal capabilities, although these are much fewer in number.

The performance tests provide the worker with the necessary tools, materials and instructions for making an article or performing a task within a given time, either of which involves the essential operations of the trade.

Such tests possess considerable value to the employment manager in supplementing the Merton Method of selecting employees, at such times when a department is in need of skilled workers and cannot take the time to train those who may be potentially qualified for the work. The trade test of itself is not sufficient to determine the fitness of an applicant for a particular job, for there are many engaged in vocations for which they are not qualified, but who through their experience are able successfully to pass the test. The most efficient workers are those possessing the mental qualifications necessary for their work, coupled with trained skillfulness in that field. Many employment managers do not see the practicability of putting applicants through such a thorough examination; others function too largely as “clerks” operating under pressure from various department heads. The employment manager functioning in his true and complete capacity is responsible for and has direct control over all matters involving the human relations in the works. Girded with this authority he can gradually install these methods of employee selection which will result in the greatest human efficiency with lessened liability to labor difficulties.

Environment:

Environment is an important factor, more often as a deterrent to marked success than as an assistant to success. Necessarily, environment varies greatly in its elements. In the main it consists of the somewhat constant effects of the family life, of the associations of friendships, of the range of early educational effort and chance, and of the opportunities that intelligent direction can bring into effective play.

These environmental conditions are valuable, whether or not they stimulate and cultivate the faculties, just in proportion as they bring growth to bear upon the individual’s latent and potential qualities, or in proportion to the extent to which these sources of advancement reach the range of the dominant faculties and their natural aptitudes. Unless the environmental influences are in accord with the dominating mental abilities,
their effects are depressed as vocational assets, or as Quality criteria.

A great many men and women of high Quality and uncommon natural ability are tied down to commonplace lives and vocations by obligations, duties, and honorable burdens that prevent them from taking such steps as the culture and exercise of their abilities need in order to demonstrate their uncommonness.

Environment is of the emotions, affections, and associations as truly as it is of the vocational opportunities or the matter of freedom from financial restrictions, and millions of men and women find uncommonness and extreme happiness in leading a simple life, when that life is surrounded by natural beauty and interest, a life unnoticeable any considerable distance from themselves or apart from their range of personal acquaintanceship.

An environment of low social order or of low physical order, devoid of natural scenery of some kind, or with species of squalor, unhygienic home surroundings, and the fatigue of commonness, has sometimes conscious and sometimes unconscious depressive, restrictive, irritative or devitalizing effects. The counteraction is toward sluggishness, intemperance, restlessness, or moroseness.

Environment that stirs the ambitions and esthetics, that has in it an optimistic atmosphere, that arouses emulation and imaginative responses, has also power toward industrial vividness and vital recuperation. Environment may change the quality of one's work or of one's disposition, but not the quality of one's constitution. It is an educational or emotional or dynamic feature, training or depressing the natural aptitudes, the emotions or the purposes of the individual, and in that way and as a source of happiness, the character of the home and the industrial environment is of considerable importance.
LESSON THIRTY-ONE

A Natural Method of Employee Selection and Promotion

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by
HOLMES W. MERTON
In this lesson we purpose to outline a practical and natural method of selecting the best employees. The Merton Method is adapted to the needs of concerns of any size and in any line of industry. In addition we propose to indicate a method of promotion of the individual in his natural aptitude studies or vocation, through preferred positions in the industries, and to indicate the lines of progress of the individual in the most highly compensating work, and of aid to those who coach him in his natural aptitudes. In the industries Employment Managers, Interviewers, Personnel Directors, Adjustment Supervisors, Superintendents, Foremen, or other executives who know the Merton Method may be the advisers.

The student is advised to review Lesson Sixteen carefully in conjunction with this lesson, to note that that lesson is devoted to the practice of the art of the Mentalist in the analysis and rating of mental specifics for vocational purposes. One may be able to read the specific ratios and still not be able to do skilful placement or counseling work; the requirements of the vocations must be known. A knowledge of the quantitative vocational requirements as given in the specific lists of Lesson Thirty-two is absolutely necessary to good practice.

The employment manager should be fairly familiar with the trade or vocational job specifications of the positions to be filled, and with the experience necessary to carry on the work of the position. That phase of employment has had centuries of study and is open to direct observation and investi-
Vocational Counseling

Employing
- Labor sources
- Interviews
- Preliminary—critical
- Job specifications
- Record investigations
- Mental tests
- Working tests
- Physical examination
- Hiring
- Assigning
- Introducing

Records
- Hiring
- Medical
- Clock cards
- Individual records
- Turnover
- Badges
- Photographs
- Certification

Education
- Apprentices
- Vocational
- Part-time
- Correspondence

Safety
- Safety Engineering
- Organization
- Education
- Fire hazard
- Accidental
- Occasional

Medical
- Physical specifications
- Physical examination
- First aid
- Medical advice
- Culinary
- Dentist
- Fatigue studies
- Rest periods
- Sanitation
- Lumination

Organized Relations
- Shop rules
- Wage scales
- Bonus system
- Work hours
- Limitation of hours
- Overtime limits
- Conditions
- Legal ages
- Prohibited occupations
- Committees
- Unions
- Demands
- Safety plans
- Suggestions
- Plant paper
- Foreman's meetings

Individual Relations
- Transfers
- Promotions
- Discipline
- Follow-up
- Shortages
- Complaints
- Quits
- Rules
- Legal aid
- Loans
- Nurse visits

Service Relations
- Profit sharing
- Group insurance
- Pensions
- Hospitals
- Housing
- Elks & Loan Society
- Conveniences
- Restaurant
- Clubs

FIG. 470

The "Job Specification" of about 600 positions has been written and widely published in various Government documents, particularly those of the United States Army and the United States Department of Labor. But these do not treat of the mental specific abilities required by the individual as natural aptitudes—dominant and supporting abilities—but do dwell upon the general experience qualifications as the main acts to be performed, what one must be able to do. These descriptions do not define the kind or order of the mental specifics required.

During the past forty years the author, by methods of analysis and topographic specific charts, that is by comparative and composite graphs and the study of mental laws, has worked out the mental specifications of over 1400 mentally distinctive vocations or vocational groups of occupations (covering something over 8000 occupational positions) as arts, sciences, trades, and industries, or particular segments of human effort.

There is yet much to be done in the extension and specialization of these vocational mental requirements. But it will necessarily require extended experience and rating ability, along with considerable knowledge of mental laws, in order to be able to work out
original sequences of specific vocational ratings. Changing conditions in modes of procedure and in the technical demands of the vocations will necessarily change the order of dominance in such instances. The author hopes to elaborate and record such mental laws as he has been able to bring to bear upon the analysis of mental procedure and relations, and others will supplement these laws of mentalogy.

Several hundred distinctive vocations have been treated by specific graphs or otherwise in previous lesson texts, and nearly all of the 1400 will be rated in their natural specific sequences in the text of Lesson Thirty-two.

Some of the extremely specialized branches of the learned professions require greater specialization in effort rather than in specifics, and some of the journeymen trade industries, as that of the tinsmith, blacksmith, or the cigar maker, when he opens a shop for himself, often require simply the business specifics added to the trade specifics.

The counselor or employment manager can readily realize the fact of the required sole-proprietor business specifics that must be possessed under these circumstances, and that the matter of added responsibilities may also demand a variation in the individual quality. The main elements of these variations are noted under Special Suggestions in Lesson Thirty-two.

The Use of Functional Relations Charts:

In many concerns the executive and superintendence offices have elaborate Functional Relations Charts, carefully planned to aid in the routing, to note functions, to describe distribution of tools, properties or documents, or exercise of supervisory powers. These charts have proved to be of great value. They are also of great value in the many temporary relations and calls for help from the various departments in interchange with other departments under special stress or conditions, such exchanges often requiring the utmost good judgment on the part of the employment office, and considerably involved records.

Charts are practically a necessity to any large industrial activity, and may be designed to include the vocational function, and in prime instances of shop, factory or office, the layout of the floor plan.

The addition of the Merton Method does not disturb these charts, or any chart of personnel relations or layout or "breakdown" either of operations or of transits.
Such great variations of functions, properties and processes exist in different concerns, industries, and modes of handling production or products, that only a specimen chart is given here.

The Merton Method is designed to add an art to the functions relating to personnel. It does not imply the installation of new officials, graphs, blanks, or processes, except in their graphic aid to the mental efforts of the administrators of personnel and employment control, so that they shall have at their command either in memory or in memoranda the mental specific analyses of their particular group of employees and of their functions. Where desired, these memoranda may be made a mental specific chart in the employment or other divisions of the plant in which the supervision is familiar with the Merton Method. A card file of the mental specifics of the vocations carried on in the concern (seldom more than fifty in the executive offices and sixty in the operating or production departments) can be made to take the place of a function chart or board, although not as convenient as the latter.

This combined chart or board, made up of the Mental Specification Chart and the Functional Relations Chart, can be called the Function Specification Chart. It would then represent the Job Specifications, the Man Specifications, and the order of responsibility or the transit of procedure.

The Mental Specification Chart:

The Mental Specification Chart (Merton Method analysis) and the Functional Relations Chart can be the same, where used by those in control of employees. The focuses of action of the Merton Method may vary in order of importance, but are generally as follows: the Employment Manager, Employment Interviewer, Foreman, Sales Manager, Office Manager, Department Personnel Supervisors, Branch Office Managers, and various supervising executives. Any of these officials or managers, who have a functional relations chart or transit of procedure chart and who understand the Merton Method, can pin mental specific cards on the chart and in a remarkably short time will become expert in reading natural aptitudes, lines of promotion and prognosis of the employee's course. In the industrial and educational world it will be found that the Merton Method is fundamentally prophetic.
FUNCTIONAL CHART

Employment Management

Adjustment Division

Trade Test Department

Messengers' Department

To Source of Requisitions for Help

From Source of Requisition for Help

Applicant Waiting Room

Interviewing

Information

Recording

Inspection

Physical Department

Photograph Department

Classical Department

Pass Department

Educational Department:
Part time, Shop Instruction, General Instruction, Foreman Classes

To Source of Requisitions for Help

Welfare Department:
Restaurant, Entertainment, Boys' Club, Men's Club, Hall Club, Band, Y.M.C.A., Y.W.C.A., Gymnasium, Housing, Transportation, etc.

FIG. 472
Employee Selection and Promotion

FUNCTIONAL RELATIONS AND MENTAL SPECIFIC CHART

Employment Management

EMPLOYMENT MANAGER
- analysis, synthesis, judgment, Memory, calculation, Language, Industry, Stability, Amity, Aspirations, Defense, Ownership, Destruction

Personnel Manager
Personnel Director
Employment Agent
see Employment Manager

Educational Departments:
- Part-time, Shop Instruction, General Instruction, Foreman Instruction, Foreman Classes

INDUSTRIAL EDUCATOR
- analysis, imagination, skillfulness, observation, enthusiasm, exhibition, serenity, Stability, Integrity, Industry, Liberty, ownership, vigilance

Physical Department

MEDICAL EXAMINER
- See Physician

Welfare Department:
- Restaurant, Entertainment, Boys' Club, Men's Club, Ball Club, Band, Y.M.C.A., Y.W.C.A., Gymnasium, Housing, Transportation, etc.

WELFARE DIRECTOR
- Industrial Welfare Administrator:
  - imagination, synthesis, Aspirations, Amity, observation, Memory, Stability, Industry, Defense, vigilance, Mobility

WELFARE WORKER
- Synthesis, Aspirations, Amity, Sociability, vocabulary, intuition, observation, Industry, Stability, vigilance, Integrity

FIG. 473
Vocational Counseling

In the hands of men noted above, or those vitally interested, this art can be made extremely useful in the original selection or rejection, in the placement and control, and in the adjustment and promotion of all employees. It gradually carries its cumulative effect into the whole organization and personnel of the concern, without disturbing its management, but rather adding to its corps spirit and mutual understanding.

The Merton Method can be made of great value in directing trade and vocational education, but the general subject of industrial education or of vocational education cannot be elaborately treated in this text.

Rightly organized all educational systems above the grammar school should more and more specifically trend toward the natural aptitude vocation of the individual. While these changes are gradually being established this method can aid in taking advantage of such opportunities as are offered under present conditions.

Dealing fundamentally, as this course does, with employee selection and management, we propose to use as illustrations, as far as briefly possible, the employment department, and the relations of the employment department to the pay-roll and its course, and to outline problems of promotion. Variations from this outline will be required in nearly every concern, but these are subject to inculcation or omission to suit the needs of the concern and of its personnel.

Functional Relations Chart:

Our first concern is with the functional relations chart. This chart should outline the functions performed by the particular office, section or department, either by itself or in its relations to other stations, sections, offices, or departments. Several functions may be performed by one individual or one function by several individuals, the matter depending upon the complexity of the work, the size of the concern, and the specialization or elaborateness of the work of the official. Thus, the employment manager may do the interviewing, rating, and hiring of an applicant for work, or the applicant may pass under the attention of an interviewer, inspector of applications, recording clerk, etc.

The plan of the functional relations chart can be arranged as a floor plan if desired, or in the relations of successive steps of the operations.
Mental Specification Chart:

The functional relations chart should be combined with the mental specification chart, on which is noted the specifics required in the personnel of the section, department or office described by the functional relations chart. The employment manager or any of his aids who are competent in the Merton Method then has before him in synopsis the functional relations and required abilities of the personnel. The mental specification chart may be made of cards to be hung upon pins and changed at will.

In a functional relations chart the tracing lines of operations often leave one department and pass through other departments, then return to some particular function in one of the employment departments or of the industrial relations officials. In Fig. 473 the adjustment supervisor may handle matters sent to him by foremen or brought to him by employees or referred to him by the employment manager. The employment manager often has the functions of employment manager, adjustment supervisor, and educational director.

A view tracing the employment department’s functions necessarily carries with it a side-view of the pay-roll functions and has to do more closely with them than with any other series of records or actions throughout the operations of a concern.

It will be well to sketch the path of administration of both series with some of the procedure associated intimately with the employee relations to the employment department and to the concern, as shown by the pay-roll and its sources of information. The various forms and blanks are subject to the particular routine of the concern; especially is this true of the blank forms from E 8 to E 13. Various technical methods of accounting, checking controls, distribution of costs, and cost accounting records, vary the details, order and number of blanks. The prime law of accounts—debit the thing received to the thing receiving it—can be treated in many ways. It follows, then, that the pay-roll, the record of the greatest expenditure in a majority of the industries, is highly involved, and its results the most tentative or equational of any expenditures made. Its basis, employee selection and control, should be founded on judgment and administrative ability comparable with those abilities in any other function in the concern.
FOREMAN, OR OTHER SOURCE OF PERSONNEL REQUISITION

(1) Drill Press hand needed; foreman sends employment department Personnel Requisition.

![Personnel Requisition Table]

EMPLOYMENT DEPARTMENT

(2) Employment interviewer receives foreman's Requisition card (E-1) for drill press hand; studies or knows Employment Interviewer's Specification Card (E-2).

![Order of Mental Specifications - Job Specification Card]

FIG. 474

FIG. 475
EM PLOYMENT RECORD
(Firm name) Date... 192. Application No.

Name.......................................... Address ..................................... Tel.................. Emp. No. ...........
Place of birth................................ Date.................................. Age................................ Nativity ..............
Parents' name................................ Address .................................. Tel.................. Nativity ..............
Relatives employed here................................ Positions held.............
Religious preferences................................ Fraternal orders (optional)

Native................................ Common school........ Single................ Children ............
Naturalized................................ High school............... Married........ Boys ..............
1st papers................................ Trade or bus. scho. Widower........ Girls ..............
2nd papers................................ Corre1. Scho. Widow........ Other dependents 

Did you serve an apprenticeship? How long? What trade?
What experience...........................................
Best adapted for......................................... Position desired...............
Willing to work as................................. Shifts........................ Overtime........... Nights ..............
Start at what price...................................... Commence when........ Want permanent job

Ever employed here before........................ What department..............
Under what foreman..................................... Discharged...................
Where employed now.................................... Laid off.....................
Where last employed.................................... Quit .........................
Cause of leaving........................................

Check familiar occupations, double-check those you are skilled in, and give years of experience.

(Column of occupations in concern) yrs yrs yrs yrs yrs yrs yrs

PREVIOUS EMPLOYERS AND EXPERIENCE

Name of Employer............................................ Address............................................
Position filled............................................ Length of service..........................
Reason for leaving.........................................
Preferred occupation..................................... Letter........................ Personal interview
To progress to............................................ By........................ Result..............
Willing to study............................................ For Department.................. Occupation
Applicant's signature.................................... Signature of Interviewer..........
Remarks.....................................................

PHYSICAL IDENTIFICATION

Height................ Weight........ Build.................. Color of eyes............... Hair ..............
Robust................ Medium................ Delicate................ Characteristic marks ..........
Have you any chronic ailments...................... What..................
Vertigo...... Back disease........ Chronic diarrhoea........ Piles........ Gall stones...
Rheumatism............... Rupture............... Difficult breathing............
Spitting blood............... Consumption in family.. Rejected by Insurance Co
Have you ever had an injury......................... When..................... Where
What caused it............................................. When ..................... Where
Ever undergone a surgical operation................ When
Are your eyes good................ Right eye........ Left eye............... Glasses
Hearing good...........right ear........ left ear.......... Right handed........ Left

(This card should be adapted to the particular information desired by
the physical examiner, also the rules and agreement of the employee re
tools, keys, badges.)

Signature.............................................

FIG. 476A
(2a) The Mental Specific—Job Specification Card E-2, can be hung on the proper pin of the Functional Relations Chart or placed in the "Available Help" file with the available help's application card E-3, or replaced on its pin when the applicant is hired.

(3) Applicant fills out Employment Record blank E-3, which can be made an extremely elaborate folder record if desired, 8 x 13 inches, folding to 8 x 5 as a pocket for other records of the employee; sometimes called an Application Record.
(4) Applicant is interviewed by interviewer or by the employment manager, rated and demerited on E-3, and passed on to the inspector of applications, the recording clerk, information clerk, photographer, medical clerk, and medical examiner, who rates under “Demerits” any vocational defects, then sent to pass clerk.

(5) Pass clerk assigns clock number, issues combination “in-and-out” job and pass card, E-4. This card should fit the time recording clock or machine.

(6) Applicant with Employment Record blank (E-3) and Pass Card (E-4) is usually interviewed by the employment manager.
(7) An Employee Record Card E-5, is filled in by the recording clerk, sent to the timekeeper's office, via the messenger and the foreman.

![Employee Record Card E-5](image)

(8) Employment department sees that the new employee rings in on Pass Card E-4, and is known to his foreman. Employment department messenger hands Employee Record Card E-5 to foreman to keep until the employee ceases working for him.

The line of action now moves to the timekeeper's department, but these relations should be understood by the employment manager's aids, though not directly recorded or controlled by his department. The following outline is tentative and the functional routine varies greatly in different concerns on account of size, products, and routine accounting requirements.

**TIMEKEEPING DEPARTMENT**

(9) Issues daily, form E-4, "in-and-out" job card.
(10) Stamps each card with date, name, number, and places in "ringing in" rack.

**EMPLOYEE**

(11) Takes card and rings in, out at noon, in at return, out at evening, and in and out on overtime.

**DEPARTMENTAL CLERKS**

(Calculation of Earnings)

(12) Collect at set times daily, job card E-4.
(13) Collect inspection slips E-6 from foremen, showing
Employee Selection and Promotion

the kind of work and how much, quality, and inspected acceptance. These are used as basis of rate and piece-work earnings for E-4 job or pass cards, or may stand for any kind of work done as a wage basis. On receiving E-4 and the

(14) Foreman’s Slip E-6, showing number of hours and class of work of employee, as data for day work or piece work earnings on job cards, to be sent to the timekeeper,

TIMEKEEPING DEPARTMENT
(Preparing the Pay-Roll)

(15) Issues weekly or monthly for each employee an Employment Distribution Card (E-7). This provides for distribution of piece and day earnings in accord with the products.

(16) Receives job cards daily and enters earnings on E-7.
(17) Totals earnings shown on cards E-7 at end of week and transfers totals to pay-roll sheet (E-8), column headed “Earnings.”
Transcript of Pay-Roll Sheet—Earnings:

(18) Adds bonus to earnings and shows total in “Earnings” column (E-8).

(19) Deducts all advances and shows amount of balance due in “Balance Due” column.

Preparation for Wage Payment:

(20) Issues Pay Check card (E-9) for each employee, showing his total hours, merchandise or cash advanced, and amount to be paid; includes date of end of period, employee’s name and number.

(21) Cards E-9 distributed to all foremen to hand to employees.

THE EMPLOYEE

(22) Receives pay check from his foreman, notes amount, and accepts or complains.

(23) Signs bottom half of his pay check, returns it to foreman as receipt.
TIMEKEEPING DEPARTMENT

(24) Issues pay envelope, with clock number, name, and amount printed on its face; amount taken from pay-roll sheet.
(25) Sends pay envelope and E-6 to head office.

HEAD OFFICE

(26) Checks pay-roll with amounts on pay envelope.
(27) If correct on pay-roll, makes out total check on bank.
(28) Determines by "denominator" the number of bills and coins needed.
(29) Inserts amount due in each pay envelope, and carries to station.

THE EMPLOYEE

(30) Signs top half of pay check card E-9, and presents card to paymaster.
(31) Receives his wages.

TIMEKEEPING DEPARTMENT
(Cost Accounting and Production Uses)

(32) Makes out a Recapitulation Sheet E-11 for each department with column specifications of the products or processes of the department. (E-11 to E-13 are not shown in illustration.)
(33) Transfers from Employment Distribution cards (E-7) each total product to E-11 and department share in cost and production.
(34) Checks totals for department on E-11, with totals of Employment Distribution cards E-7, for men in each department, found in E-11.
(35) Opens a department pay-roll Distribution Sheet, E-12, for each department.
(36) Sorts out classes of Employment Distribution cards, and enters on E-12.
(37-38-39) Totals all classes of labor, all checks, and checks amounts, on E-12.
(41) Transfers particulars from E-12 to E-13, for analysis.
(42) Sorts Employment Distribution cards for items done in other departments.
(43–44) Makes interchange and charge sheet with other departments.
(45) Indicates debit and credit for each department on E-13.
(46) Shows total adjusted department pay-roll.

THE QUESTION OF DISCHARGE

(47) The employee quits or is discharged, the foreman takes E-5 out of his live file, fills in the facts called for, sends it to the timekeeper.

TIMEKEEPING DEPARTMENT

(48) Demits the clock number of E-5 from the pay-roll, sends it to the employment department, adjustment division.

EMPLOYMENT DEPARTMENT

(49) Receives card E-5, acts on information, transfers details to Employment Record blank E-3.
(50) Destroys foreman's E-5, transfers E-3, with notes, to the dead file.

AVAILABLE HELP FILE

Lathe Hand Asks for Work:

(51–3) Applicant fills out Employment Record blank E-3.
(52–4) Applicant is interviewed by interviewer, and rated on blank E-3, as: Quality 10 (on a tentative scale of Job Quality from 1 to 10); imagination, skilfulness, invention, analysis, calculation, quantity, observation (Industry, firmness, perseverance, vigilance, ownership, Destruction, Mobility—high supervisory specifics—potential shop foreman). (Remarks: With a little practice and reference to the list, the rating may be written: im. sk. inv. an. ca. qu. obs. Indus. fir. pe. vi. own. Dest. Mobi.)
(53-2a) Blank E-3 placed in Available Help File, with Card E-2, Lathe Hand, plus Shop Foreman.

Second Lathe Hand Asks for Work:

(51–3) Applicant fills out Employment Record blank E-3.
(52–4) Applicant is interviewed by interviewer, and rated on blank E-3, as: Job Quality 4; imagination, skilfulness, Mobility, object-form, motion-form, observation, dexterity, calculation, vigilance—all above the
Employee Selection and Promotion

85 per cent line. (Turret Lathe Hand; no executive specifics high.)

(53-2a) Blank E-3 placed in Available Help File with Card E-2, Lathe Hand.

Third Lathe Hand Asks for Work:

(51-3) Applicant fills out Employment Record blank E-3.
(52-4) Applicant is interviewed by interviewer, and rated on blank E-3, as: Job Quality 2; imagination, skillfulness, Mobility, object-form, motion-form, observation, dexterity, calculation, vigilance.

(53-2a) Blank E-3 placed in Available Help File, with Lathe Hand, E-2.

Fourth Lathe Hand Asks for Work:

(51-3) Applicant fills out Employment Record blank E-3.
(52-4) Applicant is interviewed by interviewer, and rated on blank E-3, as: Job Quality 6; object-form, calculation, observation, scrutiny, dexterity, motion-form, Industry, Aspirations. Demerits: imagination low (60), medium skillfulness (75), low vigilance (65). Only fair recommendations, ten years experience, last at high practice concern. Should be recommended to take up draftsmanship, as his specifics fit him for that vocation much better than for a lathe hand. (To be called on only in stress for help.)

(53-2a) Blank E-3 placed in Available Help File, with Lathe Hand, E-2.

(1) Lathe Hand needed, foreman sends employment department Personnel Requisition card E-1.
(2) Employment interviewer receives card E-1, sends it to the inspector who takes out all blanks E-3—E-2 Lathe Hands.

Remarks: The interviewer, inspector, or employment manager finds from Cards E-3 and E-2 that applicant No. 1 has high job quality, the right order of specifics, fair recommendations, plus potential shop foreman supervisory and job visioning abilities; material for promotion being a surplus of quite large invention, analysis, calculation, Industry, firmness, perseverance, ownership and Destruction.

The interviewer finds that applicant No. 2 has the right specifics, no potential supervisory or executive power, and just fair quality.
He finds that applicant No. 3 has the right specific but the quality is low, and useful only under stress of employee scarcity. He finds that applicant No. 4 has fairly high quality, but should never have been any kind of a mechanic but a fairly good and rapid draftsman, also that he required his high Industry and Aspirations to have driven him into ten years' life as a mechanic; that his numerous changes under favorable deportment express the fact of misfit vocational life.

No. 1 is hired because of the need of potential foremen; or No. 2 is hired because a steady and long interested, satisfied-with-his-job man is desired. No. 3 is kept in file for an emergency scarce-labor market; and because of shortage in potential draftsmen, No. 4 is recommended to probational study in the vocation of draftsman.

**Employee Promotion:**

The **Merton Method** of employee promotion is that part of the employment department function that relates specifically to the matter of selecting the best natural ability and the best trained individuals in the personnel of a concern for promotion to well fitting positions. It is based upon the fact that great natural ability in one vocation or position does not imply even good ability in another vocation or position, but that the possession of the right natural aptitude specifics does evidence success in the new vocation, and that every advance in the functions of an organization is almost certain to require specific natural aptitudes that were not required to the same extent in the lower or other vocational position.

We have dwelt upon these facts in many cases throughout the text. We have asserted in several ways that careful follow-ups in many individual instances have proved that a variation from the required specifics, and often from the required quality with the right specifics, is defeating. In many instances equality in size of the high specifics neutralizes vocational maximum success, even though the required specifics fit two vocations by ranging fairly close to the par or vocational dominant line.

The employment manager or the vocational counselor need not, however, draw such fine distinctions in quantity ratios as to become finically exacting, but should use judgment.

When a specific highly important to a particular promotion is medium or low, it is extremely adverse to that promotion or vocation selection. When two or three specifics unneces-
sary to the promotion are on or near the par line, they are adverse to the promotion but not as much so as when necessary specifics are low; the unnecessary high specifics are more easily lived down than the necessary low ones raised high.

So many adverse conditions may surround the first choice of vocation that a second or third choice may be necessary, but the specifics should be as close as possible to the line.

Promotion opportunities fitted to the individual may not be open or possible in the employing concern, nor even in the resident city or town; that is, a first choice natural aptitude promotion may not be possible, so that circumstances will compel a "near-to-right" vocation.

**Promotion Material:**

In the concern the problem of promotion material, of promotion preparation, and of the best choice of men for promotion, is of great importance. The importance in a particular instance varies with the position to be filled; in the total, with the magnitude of the position in the concern and the mass of its executive requirements. This importance is being more and more realized as the industrial organizations are becoming more complex and industrial production as well as financing is more widely and exactingly involved.

While employee selection is thought to be a somewhat transient and time exacting fact in relation to an individual, and its requisition demands immediate filling, promotion is generally looked upon as a fact of known experience and as comparatively safe in its results; the very laws of mentality often completely upset this theory.

The classic mode of promotion has been that of the immediate next step, due to evident success in the position from which promotion is made. Thus one has the series of special machine operator (or other part of the trade), the machinist, the mechanic, the subforeman, the foreman, the assistant superintendent, the superintendent of a department, the general superintendent, and finally, in breadth of action, the master mechanic or works manager, or other higher executive position above the local superintendency.

This method is based upon the premise that each succeeding step requires only an increased information, opportunity and knowledge of the same elements of the line or those required in the beginning. In some trades, arts and sciences
this is true; in some businesses it is true so long as the business is within the oversight of one man.

But in the great mass of employee management, the mental requirements increase in variety with either increase in the size of the job or in the line of promotion. In this fact of promotion the Merton Method is predicting potential abilities, is able to measure specific abilities that have not measurably been expressed vocationally.

A foreman needs strong specifics that he did not need before becoming a foreman; these abilities generally only relatively few men possess. In the shops of many fairly large manufactories the foreman material, as it were, of the required quality is not sufficient to supply the positions; second-rate and third-rate foremen are certain to be found unless every ounce of foreman ability is utilized. Occasionally there are concerns where, as a matter of chance, much good foreman ability is present. Sometimes the greater part of it is unrecognized either by the supervisory powers or by the potential foremen themselves. All of the mechanics may hope to be potential foremen and superintendents, but that neither

<table>
<thead>
<tr>
<th>Automatic machine operator</th>
<th>Mechanic</th>
<th>Journeyman machinist</th>
<th>Foreman</th>
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* Arithmetic and measuring.  
* Elementary mathematics.  
* Physics and high-school mathematics.  
* Executive or mathematics.  
* Management or control.

FIG. 483
defines what they have or what they need and do not have. To think generally of what one needs to do in a position and to do what one needs to do are very different abilities. Knowing what one needs to do aids in doing it; it is part of the job, but a long way from all of it, when other specifics are important factors or when the work increases in mental complexity.

In Fig. 483 let us take one of the most direct lines of promotion, through one phase of the machine shop. First, let us ignore the key of quality, the basic education, and the chances of sufficient experience. This places all of the men on an equal footing except for natural aptitudes, and over-aptitude, which also often defeats recognition.

The automatic machine operator who is to operate a full automatic or semi-automatic machine requires the specifics noted: imagination and skilfulness to keep him in mechanics and give him the conception of power and device action; object-form and motion-form to give him a true sense of drawings, designs, materials, cam layout, proper tools, feed plans, time elements, etc. The other specifics follow in sufficient power to accomplish their parts of the work. Raise some of his specifics or add considerably to others, as seen in the fifth column, and the lower or simple classes of work would become intensely irksome even with prospects ahead, the ability for which he can only guess he possesses.

If the automatic machine operator has only the specifics noted as necessary, he will need, for promotion to the next grade, to raise his heretofore not needed number (arithmetical ability) to a place at least equal to his object-form. His arithmetical calculations and measurements may become somewhat frequent, careful and complex. This difficulty is comparatively easily remedied; he may be told to study and so raise this arithmetical ability.

The next promotion from mechanic or machinist's helper to the journey machinists' grade also requires his raising observation from a general attentive ability to an automatic attentive grade, and already having vigilance enough to avoid danger, he has a stimulant in vigilance to aid in giving working observation. But the step introduces two new mental factors of a serious kind; these are analysis of problems and management, spontaneous judgment on the same problems, and the ability to see the uses and processes of elementary mathematics—namely fair geometry, algebra and trigonometry. In some positions these last are of minor importance; in other positions they are of major importance, and may be head-
beams that will hinder promotion, or stop progress within the vocational field of machinist's helper, or a machinist who has his work elaborately worked out for him, as is often the case in the highly organized plants. With Industry among the ten high specifics, intensive effort and good conditions make this promotion a fair prospect. In the steps from journeyman machinist to foreman, however, a decidedly new set of powers enters into the requirements, not simply intellectual, but of the Will.

This new set of powers are firmness and perseverance, specifics of Stability, and the faculty of Industry raised into power in elementary management and supervision. This step is just possible from the three preceding ratings. The potential specifics in these ratings, that is, vigilance and Mobility, are not highly executive nor have they the kinds of power needed. Industry is not sufficient and is low on the list.

If our automatic machine operator is a good quality man he may reach the journeyman machinist grade. The chances of his becoming a successful foreman are small and illustrate the condition that arises in thousands of shops where the lower grades of "skilled" and "semi-skilled" employees rank well, and the difficulties arise in inferior supervision. This inferior supervision is not often noticed by the concern, since it is often true that the concern has only its own elaborated force to make comparison with; its own foreman and supervisory personnel is its criterion. Occasionally a new outside subexecutive, either foreman or shop superintendent, is hired, sometimes better sometimes less able than the run of the shop. If better he may even then be neutralized or opposed, so that little gain is found. It is necessary to find a remedy for these conditions of non-potential abilities in the ranks of the lower grades of the force, and by means of installation of new ideas and studies to raise the general tenor of the whole force without increasing the energy pressure upon individuals.

The Merton Method foreman, assistant superintendent, superintendent, or employment manager has before him the permanent Mental Requirements Chart; he also has frequent observations of the faces of his working force, say of machine operators, machinists' helpers, or subforemen, or in whatever grade he can find most suitable promotion experience and natural aptitude. Among these faces he may find a foreman-requirements face in the first, second or third column vocations as shown on Fig. 483. The man may be restless, even indifferent, his Attention may have in it a vocational wander-
lust; the suppression of his analysis, judgment, mobile Industry, and Stability may even drive him into irritability. He does not himself realize the causes or conditions. But the Merton Method shop superintendent, or even his own foreman, understanding the stress and half-conscious craving of these forces for expression, suggests that by study or otherwise as needed, he actively prepare for a foremanship. At once the man is changed and the new position will have in it a power that neither column one, two, nor three as requirements can supply, but the possession of those specifics, with the additional ones required, at once distinguishes the one man in the group. Only a considerable test in the new position of the men who seemed generally least likely to fill the new demands would have found this particular man. The art of speeding up a shop is a subtle one. We have found many men who took up a correspondence or home study course to study in their margins of time who would not voluntarily attend educational classes, even on paid time conditions.

From our potential or actual foreman to shop superintendent or general superintendent in mechanical fields, is also a jump of considerable natural aptitude distances, even when we have the foreman with the potential abilities within vocational sight of his dominants and essential specifics. When these are not so close that they can be raised to closely supporting specifics, it is necessary to find one who has them so.

In some men the vocational specifics of the semi-skilled and skilled vocations stand close to the par line, then there is a falling off of the rest of the mental line to a fair level of abilities that can be cultivated to reach the secondary sizes of faculties needed. In these men a conscious need of exertion in the supporting specifics may gradually bring them within vocational use. Let us illustrate this fact by an analysis percentage chart based upon a fairly wide potential shop superintendent chart.

If we transfer the column groups from Fig. 483 to a ratio analysis and have thus a quantitative rating and relationship, we at once see the foreman mechanic specifics, as shown by the dots on Fig. 484. These are also the prime factors of the superintendent, but the cross positions must also be filled. Memory, synthesis, the Aspirations, and ownership must be raised approximately ten per cent; Industry and Defense should be raised even more than that. It will be noted that it is chiefly in the executive specifics that the stress of gain is found. Judgment and synthesis, facts, time and system,
are among executive requirements, but are not executive determinants; executive power requires executive specifics.

One rule of promotions is that the individual to be promoted shall have the specific dominants of the new vocation, and shall have the supporting specifics potentially near enough to the required ratios of the position to be brought into intensive, aroused, responsive activity, that is, near enough to be vocationally stimulated into pleasurable stress without undue fatigue. None of these conditions can be coaxed, cajoled, or self-instilled when the specifics are too small relatively to the par line of the new occupation. The par line itself is always determined to keep ahead if conditions allow it to do so.

The employment manager may think this plan is a very formidable scheme; but he may also find that any other method is considerably more so, when results are tallied up. In fact, too, it furnishes him with an easily ascertained and definite reason for promotion, transfer, and, sometimes, for discharge.

Fortunately the Merton Method looks backward as well as forward. It has had sufficient individual historical experience, prophetic experience, and voluntary personal confirmatory experience to know that its results are not mere coincidents or occasional fortunate guesses, and that the mass of its predictions were not drifted-out-of-sight-failures.

When it reads from the face the past-history failures or successes of the individual, it also reads in the same face what could at an earlier date have been the future failure or success history. The causes in mentality that made the success or the failure are largely present at any date in life, because of the logical natural fact that the specifics near the par line are dominants and struggle to keep so. In changing the range of natural dominants, the face is changed.

There are a thousand ways to do a thing wrongly, and sometimes two ways to do it rightly. We are not particularly interested in the wrong ways or false doctrines, but in every way to do our work rightly. The wrong vocational specifics not only incline toward not doing a particular class of vocational acts in an easy and right way, but also incline one toward doing them in a wrong way, and with mental difficulty.

The supervisory powers have thus an advantage of realizing the chief causes of failure, as well as the reason for transfer, promotion, discharge or accessory instruction. This alone is well worth the elaborate study of this method.
Employment managers or others who have ever seriously attempted and succeeded in fundamental employment work, know that their vocational field is equal in its mental demands to that of any of the learned professions, whether those professions are in the business office or in the world of private practice. It should and soon will be compensated as highly as these equivalents are. Its successes will be able to command recognition and compensation equal to that of other learned or highly skilful professions or vocations in the intellectual, industrial or executive world. Such is the case now in some few concerns, concerns which are not of opinion that the man or men who select and supervise the personnel functions need only be on a vocational par with a machinist's helper or the average grade employees of the concern—as in instances where a twenty-dollar-a-week "time study" man attempts to set standards for two hundred skilled mechanics and their foreman. The annual pay-roll account is a considerable factor in most industries, and a large part of its net returns depends upon the quality of the men enrolled upon it. Foremen, superintendents or instructors can hardly make over poor materials in mentality any more than they can make over poor materials of manufacture.

An employee's mentality and his experience in training that mentality is the essential thing he brings to his work, to his employer. Other things, such as his home life, environment, enjoyments, nativity—whether to others good or bad—may be as natural and native to him as are the features of his face, and though they modify his conduct they seldom have the vocational determining values that are to be found in his mental specific abilities, except as to where these shall be expressed; and it requires capable judgment on the employment supervisor's part to improve even these factors.

Promotion Relations in Office Personnel:

What is true of potential promotion abilities in the works force is true of the office force as a whole. Some lines of succession require decidedly different dominants.

As an illustration of a familiar line of promotion we take in Fig. 485 the general personnel in the secretarial fields, without any attempt to establish vocational quality grades, but treating the functions performed and their specifics.

In this set of functional relations there is unusual agreement, because all are performing the same general intention or series of actions; the mental tools and qualities of the purpose
are alike—the expression and recording of verbal expression and opinion. The variations in the requirements fall in the secondary and later sizes of the specifics when the new vocations are added.

Hardly another series in the office falls throughout on the same specifics. This has been shown in the instances of the bookkeeper and accountant, the salesman and the sales manager, and others through the course. What is ordinarily called character analysis is utterly useless in making these distinctions, and the "mind unit" of psychology is so often disproved that an endless series of evasions has made the exceptions a thousand to one bet against the supposed rule.

The employment manager should have at his command the greatest attainable certainty concerning the natural aptitudes and dispositions of his employees or applicants for positions. He should be a confidential adviser both to his firm and the employee. The larger interests of all three are mutual and in a definite degree interdependent. This mutual interest would appear at once, to all, were they the solely interested parties as are partners. The presence of large numbers of employees or of owners in a concern, and the lack of knowledge of the intentions and interests of each concerning the other, often obscures the mutuality of industrial relations. Quite often neither party actually cares, except in a vague general way, whether the other succeeds, is happy, or successful, or not. The employer and the employee under these conditions both need a representative who can arouse and represent the productive values of mutuality and reciprocity in their industry.
Waste and Non-Waste of Effort:

The objection sometimes made that the employment manager and his assistants, or the superintendents or foremen, have little time for counseling or for conference, is hardly valid when one considers the waste time of much needless "labor turnover," of misplaced instruction, of employee indifference to carefully given instructions, of minute and sometimes needless though expensive inspection, of wrongly selected promotions (however much merited by the misplaced individual) and other conditions where a careful survey of individual adaptability and fitness would have prevented the waste and irritations resulting.

Having tried many methods of interpretation, and like Belshazzar's soothsayers, many having been found wanting, we are all of us prone to forget that few great needs are filled except after many efforts at solutions.

The Merton Method student knows that this course in Vocational Counseling and Employee Selection is exactly what it professes to be—an extremely important part of employment management and industrial relations—but it does not profess to cover those vocations in other details of their phases of activities. For this reason it is suggested that Merton Method students who are not already familiar with other segments of employment management and industrial relations should study the best procurable authorities upon any particular part with which they are not familiar, choosing the subject next most necessary to the practical mastery of this work. There are many able, practical, constructive and conscientious authorities upon these other branches, as pointed out in this lesson. By avoiding ephemeral judgments and adopting a free, sympathetic, calm, constructive and broad-minded attitude, there is only a time limit to the variety and amount of mutual benefits that can be gained for both employee and employer.

Employee Replacement Costs:

As a matter of common fact, in the average offices and average shop the majority of the employees are misfits trying to compete with the fits, and often the whole force drifts into a crowd of misfits—uneven unenthusiastic producing units, many of them working with every ounce of ability they possess and still doing their work on a sixty per cent or less basis. In such conditions the question of employee replacement has
more than the direct cost basis to contend with; the total loss may not be sensed in particulars, but extreme advantages in business relations may be necessary to keep up the process of concern success. Through great ability of some members of the concern or some employees of the concern, the comparatively low value of other employees is apparently offset and no one in the concern realizes the deficiency in the minus quality employees. Such concerns are to be congratulated upon their ability to keep alive, to overcome the handicap of poor corps accomplishments in the deficient individuals and their adverse natural abilities. Transpose the misfits into right places, and the cast of the whole plant will change.

Under similar circumstances employee replacement cost has several definite phases that are fundamental in management. Those that relate to replacement and promotion must be treated with definite regard to each concern and its employment environment, otherwise any estimate of such cost becomes a generalized statement of generalities and consequently open to so many errors that it is of little value, just as generalized observation of the face is of little value—some truth in each method and some error in each method, but no one can tell which the truth is.

Direct loss in replacing quits for any cause runs from a profitable discharge to the full expense of re-employment and re-education; from the benefit of getting rid of the inept, unprofitable employee to the cost of hiring and breaking in perhaps several others before the position is profitably filled.

Returning to the unsatisfactory averages again, the Merton Method student should save a very large percentage of employee placement or replacement costs, which costs are approximately estimated as being, for a general laborer $25; for a semi-skilled employee $50; for a skilled operative $100; and for a trainman or other high-hazard vocation, or for a journeyman foreman $150; while heavier or specialized employees often run very much higher. Where the replacement process commands high grade units for each position, the gain is vastly in excess of that where only average units are chosen.

The time element in making vocational judgments is a very "touchy," and, we believe, inverted problem in the minds of most employers or their executives. Let us look at this matter pointblank.

The focus of the whole function is the selection of the best man, the rejection of as many wrong men as the conditions admit, unless the right one cannot be found. No other of the
numerous activities of the employment office should be allowed to infringe upon this part of its duties.

Naturally the analysis time element varies with the importance of the position or with the natural fitness of the applicant, but the approximate time required for selecting a man to fit the job, best choice of several applicants, is usually twenty minutes; for rejecting or selecting a single applicant for a particular position, from five to twenty minutes; for selecting a vocation to fit the individual (experience unknown or not considered) and counseling conference, one hour, sometimes more. Counseling an employee for improvement may run from five minutes to an hour, and if the employment manager knows his business, and the employee is worth anything, it should amply repay the firm and the employee.

The Merton Method is highly economic of time and effort and in offsetting discouragement in industrial training. The nearer this training comes to being apprenticeship or beginner training, the more satisfactory the results of the selective value of this method, as it is a natural aptitude criterion. Useful at all times, it is particularly so in the case of beginners and under standard practice instructions, thus preventing the waste of a series of misfit vocations, and the bad effects of wrong methods.
LESSON THIRTY-TWO
The Vocations and their Mental Requirements

New York
MERTON INSTITUTE, INC.
1921
MERTON COURSE
in
Vocational Counseling and Employee Selection
THE ART OF JUDGING PEOPLE
LESSON THIRTY-TWO
The Vocations and their Mental Requirements

The Order of Prominence of the Specific Abilities required in the 1400 Vocations which include about 8000 occupational positions.

Each vocation in the following pages is listed under its dominant faculty or subfaculty in one of the groups indexed below. Each group of the dominant faculties and specifics is placed alphabetically, so that the order of dominance in any individual can quickly be found, or the nearest approach to it that is listed. For example: Should the individual being analyzed have a dominant observation closely followed by Memory, vocabulary, object-form, and calculation, with no other important vocational specifics near, it will be found on turning to observation on column 18, and tracing down in alphabetical order, that the sequence of specifics that agrees with this is that of the File Clerk—which indicates the vocation, if quality and conditions are suitable.

See Alphabetical List of Vocations, p. 1025; Special Suggestions, p. 1032.
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Vocational Index

Brush maker object-form, dexterity, observation, industry

Molders:
- Flask maker object-form, dexterity, observation, industry, defense
- Shaker-out Industry, mobility
- Tumbler Destruction
- Trimmer
- Snagger
- Emery-wheel man

File cutter object-form, dexterity, observation, industry

Shingle layer object-form, dexterity, vigilance, observation, industry, mobility

Grainer object-form, hues, representation, dexterity

Advertising artist object-form, hues, representation, observation, display, esthetics, dexterity, imagination, utility

Modiste object-form, hues, representation, imagination, skillfulness, industry, esthetics, serenity, amity

Dressmaker object-form, hues, representation, observation, imagination, skillfulness, industry, esthetics, serenity, amity

Sculptor object-form, imagination, dexterity, esthetics, observation, skillfulness

Art pottery designer; terra cotta object-form, imagination, individuality, color, esthetics, skillfulness, dexterity, ownership, industry

Men's furnishings manufacturer object-form, imagination, individuality, firmness, fortitude, perseverance, protection, aversion, destruction, vigilance, display

Millinery manufacturer object-form, imagination, observation, individuality, color, firmness, fortitude, perseverance, intuition, ownership, industry, display, protection, aggression, aversion, destruction

Molders:
- Bench dry sand
- Green sand
- Loam
- Core maker

Wood pattern maker object-form, imagination, skillfulness, analysis, (mathematics), calculation (arithmetic), observation, dexterity

Metal pattern maker

Stone cutter object-form, imagination, skillfulness, dexterity, observation, esthetics, mobility

Dealers in art casts, statuary, antiques, sculptures, marbles, scagliola, bri-c-a-brac

Handwriting expert object-form, individuality, analysis, scrutiny, observation, display, dexterity, imagination, serenity, amity

Modeler clay object-form, individuality, calculation, skillfulness, dexterity, mobility, imagination

Artist, map cartographer object-form, individuality, calculation, skillfulness, dexterity, imagination

Chart engraver object-form, individuality, dexterity, observation

Pantographer cloth object-form, individuality, dexterity, skillfulness

Ivory turner object-form, individuality, dexterity, skillfulness

Engraver: crest, coat-of-arms monogram, jewelry, stamp, steel plate, etcher, stencil

Suits manufacturer object-form, individuality, dignity, stability, ownership, aggression, touch, scrutiny, industry

Cloak manufacturer

Corset manufacturer

Collar manufacturer

Shirt manufacturer

Lace goods manufacturer

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| **Die cutter** |
| Die sinker |
| object-form, individuality, skill, dexterity, observation, scrutiny, vigilance |

| **Felt hat** |
| Ironer |
| Presser |
| Molder |
| Polisher |
| Fuller |
| Shearer |

| **Jeweler, clerk** |
| object-form, individuality, vocabulary, integrity, intuition, skilfulness, imagination, kindness, courtesy, aspirations, utility, vigilance |

| **Molders:** |
| large floor castings machine |
| iron |
| brass |
| bronze |

| **Cloth finisher** |
| Calender man |
| object-form motion-form, Con-truction - general, dexterity, vigilance, Mobility |

| **Felt hat** |
| Buffer |
| Hardener |
| Setter |
| Sorter |

| **Planterer** |
| object-form, motion-form, dexterity, Mobility, vigilance, industry, ob-servation, Aversion, Destruction |

| **Cloth finishers:** |
| Soap machine |
| operator |
| Mangler |
| Sprinkler |

| **Felt hat** |
| Former |
| Fitter |
| Rounder |
| Coner |
| Finisher |

| **Wood carver** |
| object-form, motion-form, dexterity, vigilance, imagination, skilfulness, industry |

| **Hatters:** |
| Journeyman |
| Inspector |
| object-form, motion-form, imagination, skilfulness, dexterity, vigilance, Mobility |

| **Wood workers:** |
| Shaping |
| machine |
| tender |

| **Shaper** |
| Mortising |
| machine |
| tender |

| **Sticker** |
| machine |
| tender |

| **Molding** |
| machine |
| tender |

| **Shoemakers:** |
| Standard |
| screw |
| machine |
| operator |

| **Pegging** |
| machine |
| operator |

| **Heeling** |
| machine |
| operator |

| **Zoologist** |
| object-form, motion-form, individuality, observation, reason, vigilance, vocabulary, Mobility, Defense |

| **Metal miners:** |
| Diamond driller |
| Hand driller |
| Machine driller |

| **Shoemakers:** |
| McKay |
| stitcher |

| **Fair stitcher** |
| Goodyear |
| stitcher |

| **Fake** |

| **Tip stitcher** |
| Tongue |
| stitcher |

| **Buttonhole machine finisher** |
| Buttonhole finisher |

| **Cobbler** |
| object-form, motion-form, observation, dexterity, Mobility, industry, Aversion, Destruction (the Will fac-ulities for muscularity). |
### Vocational Counseling

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<td>Photo litho-printer</td>
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<tr>
<td>Photographer</td>
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</tbody>
</table>
Vocational Counseling

Weavers: object-form, scrutiny, observation, skill, dexterity, vigilance, Industry
Smash pleceer
Burler
Specker
Knotter
Mender

Dental laboratory mechanic: object-form, scrutiny, skilfulness, imagination, dexterity, hues, observation, Industry

Felt hat: object-form, touch, dexterity, observation, Industry, vigilance
Blocker
Velourer

Dancing teacher: motion-form, Mobility, music, Laudation, Amity, Sociability, Aspirations, Dignity, Integrity

Physical culture teacher: motion-form, object-form, Mobility, Reason, Inspiration, Laudation, Aspirations, Industry

Bail player: motion-form, observation, Mobility, Stability, Defense, vigilance, Laudation, Industry

Draper: hues, object-form, imagination, Mobility
exhibition flag
banner
bunting

Cleaning and dyeing: hues, observation, object-form, vigilance, dexterity, Industry, ownership, Defense

Paint makers: hues, order, representation, Construction, vigilance, Industry, Stability, ownership, Defense, Appetite
Foreman
Filterer

Color expert: hues, representation, analysis, synthesis, calculation, observation, object-form, vigilance

Dealers in artificial dowers: hues, representation, object-form, imagination, Defense, ownership, Caution, perseverance, Industry, Liberty, display
embroideries feathers

Glass painter: hues, representation, object-form, imagination, dexterity, esthetics

Artist, colors: hues, representation, object-form, imagination, skilfulness, observation, ownership, Industry
marine mural scenic heraldic ceramic
genre

Artist, colors: hues, representation, object-form, imagination, skilfulness, observation, Amity, intuition, Sociability, Industry
portrait miniature

Artificial flower maker: hues, representation, object-form, imagination, dexterity
Feather maker

Sign painter: hues, representation, object-form, observation, dexterity, Mobility, Industry, in black and white, object-form dominant

Designer, colors: hues, representation, object-form, imagination, observation, dexterity
portiere pillow-top scarf holiday card valentine embroidery favors

COLOR

Manufacturer: Color, analysis, synthesis, imagination, skilfulness, ownership, equity, Stability, Industry, Defense, Destruction, color extracts
paint oxides kaolin earths porcelain dye stuffs

Color tester: Color, object-form, analysis, synthesis, imagination, observation, Industry, touch
color extracts

Terra cotta workers: Color, object-form, motion-form, observation, scrutiny, dexterity, imagination, skilfulness, Mobility, Industry
paint oxides kaolin earths porcelain
Inspector
Decorator
Modeler
Colorer
Burner

Paint makers: hues, imagination, skilfulness, dexterity, Mobility, Appetite, Destruction, observation, Industry
Lead oxide furnace man
Red lead furnace man
Paint grinner

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<table>
<thead>
<tr>
<th>Vocational Index</th>
<th>Vocational Index</th>
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<tbody>
<tr>
<td>Decorator, china</td>
<td>hues, representation, object-form, skilfulness, individuality, imagination</td>
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<tr>
<td>House painter</td>
<td>hues, representation, observation, dexterity, Mobility</td>
</tr>
<tr>
<td>Dyer, warp piece</td>
<td>hues, representation, observation, vigilance, Mobility, Impression, utility</td>
</tr>
<tr>
<td>Lithographer</td>
<td>hues, representation, order, object-form, calculation, love of power, Industry, Stability, equity, ownership, aggression, protection, Aversion, Destruction</td>
</tr>
<tr>
<td>Decorator enterprise</td>
<td>hues, representation, order, object-form, imagination, Defense, ownership, Caution, perseverance, Industry, Liberty, display</td>
</tr>
<tr>
<td>Draper enterprise</td>
<td>hues, representation, order, object-form, imagination, skillfulness, independence, dexterity</td>
</tr>
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<td>Designer, wall paper</td>
<td>hues, representation, order, object-form, imagination, skillfulness, dexterity, observation, Mobility</td>
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<tr>
<td>Art dealer</td>
<td>hues, representation, order, object-form, imagination, intuition, Sociability, Language, Defense, Economy, Stability</td>
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<tr>
<td>Litho-engraver</td>
<td>hues, representation, order, object-form, imagination, skillfulness, dexterity, Industry, vigilance</td>
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<tr>
<td>Fresco artist, Decorator Painter</td>
<td>hues, representation, order, object-form, imagination, skillfulness, dexterity, Mobility, observation, vigilance</td>
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<td>Stained glass designer</td>
<td>hues, representation, skilfulness, imagination, object-form, dexterity, aesthetics</td>
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<td>Art salesman</td>
<td>hues, representation, vocabulary, object-form, observation, Amity, Sociability, Integrity, Aspirations, —salesman buffers</td>
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<tr>
<td>Temperer steel case</td>
<td>hues, scrutiny, object-form, observation, dexterity, Mobility, vigilance, protection</td>
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<tr>
<td>Lithographer (color) trade</td>
<td>hues, representation, order, object-form, imagination, skillfulness, dexterity</td>
</tr>
</tbody>
</table>

**NUMBER**

| Statistician clerk | calculation, analysis, synthesis, imagination, Memory, observation, mental-focus |
| Credit man         | calculation, analysis, synthesis, object-form, ownership, Caution, judgment, intuition, foresight, Defense, Aversion, Destruction. See also Accountant, C.P.A. |
| Treasurer general  | calculation, analysis, synthesis, ownership, Caution, Stability, Industry, Defense, Aversion, Destruction |
| Cashier store      | calculation, Attention, Memory, Caution, Economy |
| Price marker       | calculation, Memory, observation, scrutiny, dexterity, vocabulary, Industry, vigilance |
| Terminal train dispatcher | calculation, Memory, vigilance, Stability, Industry, observation, synthesis, analysis, judgment, Mobility |
| Time-keeper        | calculation, Memory, vocabulary, object-form, observation, Caution, Industry, Mobility |
| Comtoimeter operator | calculation, motion-form, object-form, dexterity, observation, mental-focus, Industry, Caution |

1003
<p>| Surveyor's aid | calculation, object-form, observation, Construction, Mobility |
| Level man Rodman | |
| Chairman Transit man | |
| Cashier | calculation, object-form, observation, scrutiny, vigilance, dexterity, Defense, Stability, Integrity, Industry, analysis, Memory |
| Railroad worker Transfer agent, freight | calculation, observation, object-form, Memory, vocabulary, Stability, Industry, Defense |
| Collection agency | calculation, observation, ownership, analysis, vocabulary, Stability, intuition, Aversion, Destruction |
| Insurance underwriter | calculation, quantity, Attention, Caution, ownership, frugality, Stability, Amity, Laudation, synthesis, judgment, analysis |
| Appraiser | calculation, quantity, equity, Memory, vocabulary, Industry, Stability, Defense, Destruction |
| Actuary | calculation, quantity, equity, ownership, Memory, object-form, Stability |
| Weigh master | calculation, quantity, observation, Integrity, firmness, vigilance, secrecy, Mobility, Construction, Industry, ownership, Defense |
| Stock chaser | calculation, quantity, observation, Memory, Reason, Caution, Industry, Defense |
| Stevedore | calculation, quantity, observation, vigilance, firmness, Construction, Industry, Defense, ownership, Aversion, Destruction, Mobility |
| Surveyor land | calculation, separation, analysis, observation, Construction, Caution, Mobility |
| Price clerk Bill clerk | calculation, separation, Memory, observation, object-form |
| Chief Engineer Bureau of Standards | calculation, separation, object-form, individuality, Memory, analysis, Stability, judgment, observation, Industry, ownership, Defense |
| Bookkeeper Ledger clerk | calculation, separation, object-form, individuality, Memory, mental-focus, observation, synthesis, Industry, Economy |
| Typewriter machine bookkeeper | |
| Surveyor's aid instrument man | calculation, separation, object-form, observation, vigilance, Industry, imagination, skillfulness, Mobility |
| Cashier | calculation, separation, observation, scrutiny, Caution, Stability, Economy, Reason, Integrity |
| Bank teller | |
| Calculating machine operator Card punching machine operator | calculation, separation, quantity, object-form, mental-focus, observation, dexterity, Memory, mental-focus |
| Stock clerk Stock man Warehouseman | calculation, separation, quantity, observation, object-form, Memory, Caution, Industry, Mobility |
| Receiving clerk Order clerk | calculation, separation, scrutiny, Memory, object-form, Caution, Industry, equity, firmness |
| Shipping clerk | calculation, separation, scrutiny, Memory, object-form, observation, Industry, equity, firmness |
| Paper dealer | calculation, touch, object-form, Industry, Economy, Stability |
| Florist | Attention, skillfulness, imagination, Color, dexterity, protection, ownership, Caution, Industry |
| Ensign | Attention, Stability, calculation, vigilance, object-form, vocabulary, Dignity, Mobility, Amity, Sociability |
| ATTENTION | |
| Progress clerk planning department | observation, calculation, facts, time system, object-form, analysis, imagination, Industry, Stability |</p>
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<th>observation, calculation, object-form, Industry, Mobility</th>
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<td>Jogger</td>
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<td>Job hand</td>
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<td>Mule spinner</td>
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<td>Wagon master</td>
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<td>Boss teamster</td>
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<td>Business broker</td>
<td>observation, imagination, equity, ownership, calculation, Stability, aggression, protection, Memory, vocabulary</td>
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</table>
Vocational Counseling

Inspector: Street car motors
observation, imagination, skilfulness, vigilance, object-form, calculation, Integrity, Stability

Tackleman
observation, imagination, vigilance, object-form, Mobility, Industry, Defense

Weavers:
Loom fixer
Chain builder
Harness fixer
observation, individuality, imagination, skilfulness, vigilance, object-form, Industry, Stability, ownership

Employment manager (general method)
observation, intuition, object-form, synthesis, spontaneous judgment, memory, calculation, vocabulary, industry, Stability, Defense, ownership

File clerk
observation, memory, vocabulary, object-form, calculation—varies with class of work

Airplane pilot
Aviator
Airman
observation, mental-focus, imagination, skilfulness, object-form, vigilance, Mobility, Stability, industry

Welfare workers:
Social industrial service department
observation, mental-focus, intuition, aesthetics, Amity, reform, Sociability, object-form, motion-form

Engineerman locomotive
Fireman locomotive
observation, mental-focus, skilfulness, invention, object-form, music (sound), vigilance, courage specifics (Amity, protection, hardihood, honor), Stability, utility, Mobility

Engineerman stationary
Fireman stationary
observation, mental-focus, skilfulness, invention, music (sound), motion-form, object-form, vigilance, hardihood, utility, Stability, Mobility

Firemen:
Firefighter
Fire engineman
Chemical engineman
observation, Mobility, motion-form, courage, specifics, vigilance, Defense (imagination small)

Weavers:
Alley boy
Alley girl
observation, Mobility, vigilance, Industry

Brakeman:
freight
passenger
yard
observation, Mobility, vigilance, motion-form, object-form, hues, calculation, Stability, industry, Destruction

Weavers:
Bander
Twister
Bobbin winding
observation, motion-form, dexterity, object-form

Cloth finishers:
Preparer
Stitcher
Dresserman
Slasher
Size man
Size maker
Reeler
observation, motion-form, dexterity, object-form

Moving picture manager
observation, motion-form, Vigilance, imagination—business ability

Conductor, street-railway
observation, motion-form, vigilance, Memory, Amity, Sociability, Stability

Signalman
Flagman
observation, motion-form, vigilance, Mobility, object-form, industry

Elevator operator
observation, motion-form, vigilance, Mobility, skillfulness, Stability

Undertaker
observation, object-form, Amity, Aspirations, Dignity, stability, Laudation, skilfulness, Defense, tact—buffers

Cloth finishers:
Rotaryman
Washerman
Beating engineer
observation, object-form, Construction, vigilance, Mobility
Vocational Index

Cloth Finishers: Kier hands; Kier roller; Open soaper; Bleacher; Vat folder; Steerer; Gray boy; Chemist; manslcier; observation, object-form, dexterity, Mobility, Industry.

Miller hands; Roller man; Roll grinder; Roll cutter; Stone dresser; Boiler; Purifier; observation, object-form, dexterity, Mobility, vigilance, Industry.

Glass workers: Stopper maker; Bandier; Ring maker; Glass cutter; observation, object-form, dexterity, motion-form, esthetics, imagination, skillfulness.

Art pottery-men; Jigger; Jigger diemaker; Dishmaker; Finisher; Dipper; observation, object-form, dexterity, motion-form, Industry, imagination, vigilance, Mobility, skillfulness.

Tobacco workers: Lump maker; Shaper; Priser; Potter; Box Priser; Caser; Roller; Twister; observation, object-form, dexterity, skill, Industry, vigilance.

Paper makers: Rag sorter; Shredder; Table girl; Overlooker; Rag cutter; Dusterman; Clay mixer; Silk maker; observation, object-form, dexterity, vigilance, Mobility, calculation.

Glasser; observation, object-form, dexterity, vigilance, Mobility, calculation.

Able seaman; observation, object-form, hardihood, independence, vigilance, imagination, skillfulness, Mobility, Stability.

Timber cruiser; Forester; Forest ranger; observation, object-form, imagination, calculation, vigilance, Mobility, Industry, Liberty, Destruction, Aversion, Defense.

Florist's helper; observation, object-form, individuality, skillfulness, Industry, Color, dexterity, Mobility.

Weavers; Filling hands; Roller; Coverer; Picker hands; Cotton shaker; observation, object-form, Industry.

Cigar clerk; observation, object-form, Industry, Defense, Amity, Sociability.

Weavers; Bobbin boy; Rail setter; Rail filler; observation, object-form, Industry, vigilance.


Glass makers: observation, object-form, Mobility, imagination, motion-form, skillfulness, dexterity, vigilance, Industry.


Shell (box) maker; observation, object-form, motion-form, dexterity, Industry, vigilance, scrutiny, calculation, separation.

Glass maker; observation, object-form, motion-form, dexterity, vigilance.
<table>
<thead>
<tr>
<th>Vocational Counseling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspector</td>
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<tr>
<td>Railroad</td>
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<tr>
<td>Deliveryman</td>
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<td>Masseur</td>
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<td>Glass makers:</td>
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<tr>
<td>Flattener</td>
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<tr>
<td>Annealer</td>
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<td>Lehman</td>
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<td>Kiliman</td>
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<td>Pottery makers:</td>
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<td>Slip maker pressman</td>
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<td>Sagger</td>
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<td>Wad-punchman</td>
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<td>Cloth finishers:</td>
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<td>Squeezer</td>
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<td>Pottery operators</td>
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<td>Acetylene gas compressor operator</td>
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<tr>
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<tr>
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<td>Acetylene gas compressor operator</td>
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<td>Tobacco workers:</td>
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<td>Marshmallow runner</td>
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<td>Gum selector</td>
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<td>Pit inspector</td>
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<td>Track foreman</td>
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<td>Motorman</td>
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<td>street-railway</td>
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<td>Chauveur</td>
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<td>Vocational Counseling</td>
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<tr>
<td><strong>Vocational Guidance</strong></td>
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<tr>
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<tr>
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<tr>
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<tr>
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<tr>
<td>Actor</td>
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<tr>
<td>Abstract clerk</td>
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<tr>
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<tr>
<td>Express agent</td>
</tr>
<tr>
<td>Writer</td>
</tr>
<tr>
<td>Telephone central operator</td>
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</tbody>
</table>

**Observation, Vigilance, Dexterity, Industry** |

**Subway guard** |
observation, vigilance, object-form, dexterity, industry |

**Printer** |
observation, vigilance, object-form, dexterity, industry |

**Press feeder** |
observation, vigilance, object-form, dexterity, industry |

**Subway guard** |
observation, vigilance, object-form, dexterity, industry |

**Gateman** |
observation, vigilance, object-form, motion-form, mobility, sociability, industry |

**Broker:** |
Technic, observation, vocabulary, calculation, imagination, synthesis, amity, sociability, aspirations, industry, ownership, stability, buffers |

**Route file clerk** |
observation, vocabulary, facts, time, system, calculation, separation, object-form, motion-form |

**Salesman counter or store, retail** |
See Technic. Goods technic, observation, vocabulary, object-form, calculation, amity, sociability, aspirations, industry. See jeweler's clerk |

**Salesman, traveling commercial canvasser** |
Technic, observation, vocabulary, object-form, imagination, synthesis, amity, sociability, aspirations, industry, stability, aversion, destruction, defense |

**Dental office assistant** |
observation, vocabulary, sociability, object-form, calculation, industry |

**Pass clerk** |
scrutiny, observation, object-form, facts, time, system, vigilance, defense, industry |

**Memory** |

**Purchasing agent** |
memory, utility, firmness, equity, protection, ownership, intuition, foresight, observation, scrutiny, object-form |

**Circulation manager** |
facts, observation, calculation, quantity, imagination, skillfulness, candor, synthesis, display, enthusiasm, zeal, protection, aggression |

**Information clerk** |
facts, time, system, observation, object-form, imagination, skillfulness, calculation, amity, aspirations |

**Medical clerk employment division** |

**Language** |

**Lecturer** |
language, aspirations, memory, laudatory, industry, sociability, imagination |

**Insurance brokers:** |
language, calculation, amity, sociability, imagination, synthesis, firmness, perseverance, industry, defense, vigilance, destruction |

**Stenographer** |
language, object-form, motion-form, dexterity, observation, industry |

**Typist** |

**Multigraph operator** |

**Vocabulary** |

**Actor** |
vocabulary, aspirations, amity, sociability, imagination, laudatory, mobility, intuition, defense |

**Abstract clerk** |
vocabulary, calculation, memory, object-form, individuality, vigilance, industry, defense |

**Telephone operator** |
vocabulary, calculation, observation, dexterity, mental-focus, amity, sociability |

**Commission merchant** |
technic of business; vocabulary, calculation, observation, ownership, defense, vigilance, aversion, destruction, industry |

**Express agent** |
vocabulary, calculation, quantity, observation, object-form, vigilance, stability, industry, defense, mobility |

**Printing solicitor** |
vocabulary, calculation, sociability, observation, stability, laudatory, industry, defense, destruction |

**Writer** |
vocabulary, dexterity, mobility, observation, object-form, motion-form, facts, industry |

**Telephone central operator** |
vocabulary, music (sound), number, dexterity, observation, mental-focus, object-form, motion-form, industry, stability, defense |
<table>
<thead>
<tr>
<th>Job Title</th>
<th>Required Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio operator</td>
<td>vocabulary, music (sound), observation, mental-focus, dexterity, Stability, Industry</td>
</tr>
<tr>
<td>Advertising manager</td>
<td>vocabulary, object-form, analysis, synthesis, observation, imagination, Color, display, Industry, Stability, ownership, intuition, foresight</td>
</tr>
<tr>
<td>Publicity manager</td>
<td>vocabulary, object-form, Color, mental-focus, scrutiny, aesthetics, imagination, foresight, praise, emulation, ownership, Industry, Stability</td>
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<tr>
<td>Mall clerk</td>
<td>vocabulary, object-form, dexterity, Memory, Integrity, Stability</td>
</tr>
<tr>
<td>Postal clerk</td>
<td>vocabulary, object-form, dexterity, observation, Memory, Mobility, Sociability, Aspirations</td>
</tr>
<tr>
<td>Baggage master</td>
<td>vocabulary, observation, object-form, Vigilance, Memory, Color, motion-form, Mobility, Industry, Defense, Destruction</td>
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<tr>
<td>Auctioneer</td>
<td>vocabulary, ownership, equity, intuition, Number, observation, Amity, Sociability, display, Industry, Destruction</td>
</tr>
<tr>
<td>Executive secretary</td>
<td>vocabulary, rhetoric, analysis, synthesis, imagination, observation, secrecy, vigilance, intensity, utility, firmness, perseverance, Defense</td>
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<tr>
<td>Supervision office</td>
<td>vocabulary, rhetoric, analysis, synthesis, spontaneous judgment, facts, system, time, observation, mental-focus, scrutiny, Amity, Reform, love-of-power, pride, Defense, Stability</td>
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<tr>
<td>Librarian Cataloguer</td>
<td>vocabulary, rhetoric, calculation, Memory, object-form, observation, scrutiny, esthetics, Aspirations</td>
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<td>Bookseller</td>
<td>vocabulary, rhetoric, equity, ownership, Defense, facts, system, observation, Sociability</td>
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<tr>
<td>Printers; Compositor</td>
<td>vocabulary, rhetoric, Form, dexterity, Memory, Attention, Industry</td>
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<tr>
<td>Linotypewriter</td>
<td>vocabulary, rhetoric, Inspiration, Amity, Sociability, Memory, observation, Dignity</td>
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<tr>
<td>Advertising copy writer</td>
<td>vocabulary, rhetoric, intuition, observation, calculation, imagination, analysis, synthesis, display, Amity</td>
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<tr>
<td>Secretary corporation</td>
<td>vocabulary, rhetoric, judgment, analysis, Memory, object-form, Amity, observation, secrecy, vigilance, industry, firmness, perseverance, Defense</td>
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<tr>
<td>Private secretary</td>
<td>vocabulary, rhetoric, judgment, calculation, object-form, observation, Industry, vigilance, secrecy, Aspirations, Dignity, Stability, Defense</td>
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<tr>
<td>Commercial secretary</td>
<td>vocabulary, rhetoric, judgment, Number, (arithmetic), Industry, vigilance, secrecy, Dignity, Aspirations, Stability, protection, Destruction</td>
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<tr>
<td>Commercial librarian</td>
<td>vocabulary, rhetoric, Memory, calculation, analysis, synthesis, observation, object-form</td>
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<td>Author</td>
<td>Specifics of subject matter; vocabulary, rhetoric, Memory, mental-focus, observation, imagination, Industry, Defense</td>
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<td>Librarian public</td>
<td>vocabulary, rhetoric, Memory, Number, Aspirations, Amity, Sociability, observation, imagination, publication</td>
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<td>Correspondent firm</td>
<td>vocabulary, rhetoric, Memory, object-form, calculation, Amity, Aspirations, secrecy, Defense</td>
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<tr>
<td>Linguist translator</td>
<td>vocabulary, rhetoric, (sound elements), Memory, object-form, individuality, imagination, observation, Caution</td>
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<td>Vocational Counseling</td>
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<tr>
<td><strong>Grammarian</strong></td>
<td>vocabulary, rhetoric, music (sound), object-form, analysis, facts, system, imagination, skillfulness, industry</td>
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<td><strong>Orthoepist</strong></td>
<td>music, vocabulary, number, imagination, dexterity, Aspirations, Laudation, Stability, industry, mobility</td>
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<td><strong>Philologist</strong></td>
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<td><strong>Teacher</strong></td>
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<td><strong>Interpreter</strong></td>
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<td><strong>Translator (firm)</strong></td>
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<td><strong>Proof reader</strong></td>
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<td><strong>Copy holder</strong></td>
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<td><strong>Reviser</strong></td>
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<td><strong>Corrector</strong></td>
<td>vocabulary, rhetoric, object-form, observation, Memory</td>
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<tr>
<td><strong>Ringman</strong></td>
<td>vocabulary, rhetoric, object-form, observation, Memory</td>
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<tr>
<td><strong>Editor</strong></td>
<td>vocabulary, rhetoric, number, observation, Memory, synthesis, judgment, imagination, utility, dignity, stability, defense</td>
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<td><strong>Correspondent</strong></td>
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<td><strong>news</strong></td>
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<td><strong>Reporter</strong></td>
<td>vocabulary, rhetoric, imagination, skillfulness, utility, firmness, perseverance, ownership, calculation, defense</td>
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<td><strong>Master printer</strong></td>
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<td><strong>Historian</strong></td>
<td>music, vocabulary, reason, intuition, imagination, skillfulness, object-form, calculation, industry, defense</td>
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<td><strong>Musician</strong></td>
<td>music, vocabulary, object-form, observation, memory, justice, honor, reform, perseverance</td>
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<td><strong>Instrumentalist</strong></td>
<td>music, vocabulary, object-form, imagination, skillfulness, object-form, observation, imagination, intuition, calculation, industry, defense</td>
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<td><strong>Conductor</strong></td>
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<td><strong>Composer</strong></td>
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<td><strong>Telegrapher</strong></td>
<td>music (sound), vocabulary, object-form, observation, imagination, dexterity, memory, object-form, industry, defense</td>
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<td><strong>REASON</strong></td>
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<td>reason, intuition, imagination, skillfulness, object-form, individuality, attention, vigilance, dexterity, Amity</td>
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<td><strong>Clinician</strong></td>
<td>reason, language, imagination, observation, calculation, Amity, sociability, Aspirations, liberty, dignity, stability</td>
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<td><strong>Diagnostician</strong></td>
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<td><strong>Field assistant</strong></td>
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<td><strong>Hydrographer</strong></td>
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<td><strong>Surveyor topographical</strong></td>
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<td><strong>Surveyor topographical expert</strong></td>
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<td><strong>Map surveyor topographical</strong></td>
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<tr>
<td><strong>Field assistant topographical expert</strong></td>
<td>reason, intuition, imagination, skillfulness, object-form, calculation, individuality, attention, vigilance, dexterity, Amity</td>
</tr>
<tr>
<td><strong>Map surveyor topographical expert</strong></td>
<td>reason, intuition, imagination, skillfulness, object-form, calculation, individuality, attention, vigilance, dexterity, Amity</td>
</tr>
<tr>
<td><strong>Triangulator topographical expert</strong></td>
<td>reason, intuition, imagination, skillfulness, object-form, calculation, individuality, attention, vigilance, dexterity, Amity</td>
</tr>
<tr>
<td><strong>Hydrographer topographical expert</strong></td>
<td>reason, intuition, imagination, skillfulness, object-form, calculation, individuality, attention, vigilance, dexterity, Amity</td>
</tr>
<tr>
<td><strong>Surveyor topographical expert</strong></td>
<td>reason, intuition, imagination, skillfulness, object-form, calculation, individuality, attention, vigilance, dexterity, Amity</td>
</tr>
<tr>
<td><strong>Field assistant topographical expert</strong></td>
<td>reason, intuition, imagination, skillfulness, object-form, calculation, individuality, attention, vigilance, dexterity, Amity</td>
</tr>
<tr>
<td><strong>Map surveyor topographical expert</strong></td>
<td>reason, intuition, imagination, skillfulness, object-form, calculation, individuality, attention, vigilance, dexterity, Amity</td>
</tr>
<tr>
<td><strong>Triangulator topographical expert</strong></td>
<td>reason, intuition, imagination, skillfulness, object-form, calculation, individuality, attention, vigilance, dexterity, Amity</td>
</tr>
<tr>
<td><strong>Hydrographer topographical expert</strong></td>
<td>reason, intuition, imagination, skillfulness, object-form, calculation, individuality, attention, vigilance, dexterity, Amity</td>
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<table>
<thead>
<tr>
<th>Vocational Index</th>
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<tbody>
<tr>
<td><strong>Executive industrial education</strong></td>
<td>analysis, imagination, object-form, calculation, skilfulness, observation, enthusiasm, exaltation, serenity, Stability, Integrity, Industry, Liberty, ownership, vigilance</td>
</tr>
<tr>
<td><strong>Agricultural County agent</strong></td>
<td>analysis, imagination, skilfulness, calculation, vocabulary, object-form, serenity, equity, justice, honor, utility, Stability</td>
</tr>
<tr>
<td><strong>Supervising industrial engineer</strong></td>
<td>analysis, imagination, skilfulness, perseverance, firmness, judgment, love-of-power, invention, synthesis, calculation, facts, motion-form, intensity, fortitude, candor, enthusiasm, utility, ownership, reciprocity</td>
</tr>
<tr>
<td><strong>Veterinarian Farrier</strong></td>
<td>analysis, intuition, synthesis, judgment, motion-form, Mobility, vigilance, observation, Destruction, Defense, Industry, Stability</td>
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<tr>
<td><strong>Production statistician</strong></td>
<td>analysis, invention, skilfulness, calculation, perception, separation, object-form, syntheses, judgment, facts, time, system, firmness, perseverance, Industry, Defense</td>
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<tr>
<td><strong>Engineer chief computing department</strong></td>
<td>analysis, invention, skilfulness, object-form, calculation, Memory, Stability, Industy, vigilance, ownership</td>
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<td><strong>Pilot</strong></td>
<td>analysis, judgment, calculation, observation, object-form, motion-form, vigilance, independence, Stability, courage specifics, Mobility, Aspirations</td>
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<tr>
<td><strong>Osteopath Naprapath Chiropractor</strong></td>
<td>analysis, judgment, Form, Impression, skilfulness, Mobility, Dignity, Stability, dexterity</td>
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<td><strong>Mine examiner Mine foreman</strong></td>
<td>analysis, judgment, imagination, skilfulness, invention, object-form, motion-form, observation, calculation, vigilance, protection, Industry, Mobility, Destruction</td>
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<tr>
<td><strong>Civil engineer highways: municipal hydraulics</strong></td>
<td>analysis, judgment, imagination, skilfulness, invention, synthesis, Number, motion-form, Stability, Industry, equity, ownership, vigilance, secrecy, Defense, Aversion, Destruction</td>
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<tr>
<td><strong>Engineer chief time study</strong></td>
<td>analysis, judgment, skilfulness, observation, calculation, tact, Stability, ownership, vigilance, mental-focus, Industry, Defense</td>
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<tr>
<td><strong>Engineer chief standard practice</strong></td>
<td>analysis, judgment, skilfulness, imagination, invention, calculation, object-form, motion-form, observation, Aspirations, Stability, Integrity, Industry</td>
</tr>
<tr>
<td><strong>Pharmacist Pharmaceutist Pharmacologist</strong></td>
<td>analysis, mental-focus, observation, Color, vocabulary, Number, vigilance, secrecy, Stability</td>
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<tr>
<td><strong>Claims adjuster</strong></td>
<td>analysis, Number, vocabulary, Stability, ownership, Defense, Amity, Sociality, Laudation, and buffers</td>
</tr>
<tr>
<td><strong>Optician Optometrist</strong></td>
<td>analysis, observation, scrutiny, calculation, object-form, skilfulness, imagination</td>
</tr>
<tr>
<td><strong>Architect marine engineer</strong></td>
<td>analysis, skilfulness, imagination, invention, synthesis, object-form, individuality, ownership—general Executives, variable with administration</td>
</tr>
<tr>
<td><strong>Surveyor general Surveying draftsman</strong></td>
<td>analysis, skilfulness, imagination, Number, object-form, Industry, vigilance, Mobility, See also Civil Engineer</td>
</tr>
<tr>
<td><strong>Topographical draftsman</strong></td>
<td>analysis, skilfulness, imagination, invention, synthesis, object-form, individuality, ownership—general Executives, variable with administration</td>
</tr>
<tr>
<td><strong>Railroad survey draftsman</strong></td>
<td>analysis, skilfulness, imagination, invention, synthesis, object-form, individuality, ownership—general Executives, variable with administration</td>
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<tr>
<td><strong>Surveyor; highway railroad marine</strong></td>
<td>analysis, synthesis, calculation, Construction, Form, Stability, Integrity, vigilance, Industry, ownership, and buffers</td>
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<tr>
<td><strong>Accountant engineering expert</strong></td>
<td>analysis, synthesis, calculation, dexterity, Memory, observation, scrutiny, Industry</td>
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<td><strong>Dietician Nutrition expert</strong></td>
<td>analysis, synthesis, calculation, dexterity, Memory, observation, scrutiny, Industry</td>
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<tr>
<td><strong>Analyst statistics Taxonomist</strong></td>
<td>analysis, synthesis, calculation, facts, system, time, ownership, Industry, Caution</td>
</tr>
<tr>
<td>Engineer</td>
<td>Architectural (Steel structures)</td>
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<td>Engineer</td>
<td>Time study</td>
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<tr>
<td>Accountant</td>
<td>Cost system-estimating factory manufacturing</td>
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<tr>
<td>Accountant</td>
<td>C. P. A. Consulting accountant</td>
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<tr>
<td>Auditor</td>
<td>Estimator</td>
</tr>
<tr>
<td>Auditor</td>
<td>Freight passenger department store</td>
</tr>
<tr>
<td>Chemist</td>
<td>General</td>
</tr>
<tr>
<td>Manufacturers</td>
<td>Bone black lamp black carbons glue blacking sulphuric acid nitric acid beet sugar preserves glucose starch yeast</td>
</tr>
<tr>
<td>Administrator</td>
<td></td>
</tr>
<tr>
<td>Geologist</td>
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<tr>
<td>Chemical engineer</td>
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<tr>
<td>Psychiatrist</td>
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</tr>
<tr>
<td>Engineer</td>
<td>Chief investment division trust company</td>
</tr>
<tr>
<td>Chemist</td>
<td>Industrial Food analyst</td>
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<td>Chemist</td>
<td>Assayer</td>
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<tr>
<td>Chemist</td>
<td>Metalurgist</td>
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<td>Chemist</td>
<td>Mine assayer</td>
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<td>Color chemist</td>
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<td>Chemist</td>
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<td>Chemist</td>
<td>Inorganic</td>
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### Vocational Index

<table>
<thead>
<tr>
<th>Mining engineer</th>
<th>Consulting mining engineer</th>
<th>Instructing mining engineer</th>
<th>Metallurgical engineer</th>
<th>Metal mining surveyor</th>
<th>Metal mining mineral surveyor</th>
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<tr>
<td>analysis, synthesis, imagination, skillfulness, invention, object-form, motion-form, calculation, Memory, Stability, Caution, Defense, Mobility</td>
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<thead>
<tr>
<th>Chief engineer railroad</th>
<th>Division engineer</th>
<th>Superintendent motive power</th>
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<table>
<thead>
<tr>
<th>Mentalist Ontologist Gnosticologist Sophologist</th>
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<tr>
<th>Biologist Biologist</th>
<th>Embryologist</th>
<th>Microbiologist</th>
<th>Entomologist</th>
<th>Ectomologist</th>
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<thead>
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<th>Nurseryman</th>
<th>Efficiency manager</th>
<th>Controller corporation</th>
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<th>School principal</th>
<th>Teacher grammar school</th>
<th>Psychologist</th>
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<td>analysis, synthesis, judgment, object-form, motion-form, observation, mental-focus, vocabulary, imagination, skillfulness, esthetics, Caution</td>
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<table>
<thead>
<tr>
<th>Physicist</th>
<th>Adjustment supervisor employment department</th>
<th>Employment manager (Merton method)</th>
<th>Personnel supervisor</th>
<th>Personnel director</th>
<th>Employment agent</th>
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<thead>
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<th>Astronomer</th>
<th>Commercial investigator</th>
<th>Tactician</th>
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<tr>
<td>analysis, synthesis, judgment, imagination, Number, Industry, Stability, observation, mental-focus, Aspirations</td>
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<td>analysis, synthesis, judgment, observation, mental-focus, vocabulary, imagination, skillfulness, esthetics, Caution</td>
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<td>analysis, synthesis, judgment, Stability, Defense, vigilance, observation, object-form, motion-form, calculation, Industry, Destruction</td>
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<th>Personnel</th>
<th>Employment interviewer (Merton method)</th>
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<td>analysis, synthesis, judgment, object-form, observation, facts, system, time, reciprocity, Amity, Industry, Defense, Stability</td>
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<table>
<thead>
<tr>
<th>Commercial investigator</th>
<th>Tactician</th>
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<tbody>
<tr>
<td>analysis, synthesis, judgment, observation, mental-focus, calculation, imagination, equity, Justice, Memory, Stability, Industry, Defense</td>
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<table>
<thead>
<tr>
<th>Commercial investigator</th>
<th>Tactician</th>
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<td>analysis, synthesis, judgment, Stability, Defense, vigilance, observation, object-form, motion-form, calculation, Industry, Destruction</td>
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<table>
<thead>
<tr>
<th>Employment agent</th>
<th>Commercial investigator</th>
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<tr>
<td>Professional Role</td>
<td>Analysis and Synthesis Skills</td>
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<tr>
<td>Naturalist</td>
<td>Analysis, synthesis, object-form, color, observation, vocabulary, imagination, skillfulness, calculation, dexterity, mobility</td>
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<tr>
<td>Philobotanist</td>
<td>Analysis, synthesis, object-form, observation, vocabulary, skillfulness, imagination, dexterity, mobility</td>
</tr>
<tr>
<td>Ornithologist</td>
<td>Analysis, synthesis, object-form, observation, vocabulary, skillfulness, imagination, dexterity, mobility</td>
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<tr>
<td>Ichthyologist</td>
<td>Analysis, synthesis, object-form, observation, vocabulary, skillfulness, imagination, dexterity, mobility</td>
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<td>Soil expert</td>
<td>Analysis, synthesis, object-form, observation, calculation, dexterity, mobility</td>
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<td>Agrostologist</td>
<td>Analysis, synthesis, object-form, observation, calculation, dexterity, mobility</td>
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<tr>
<td>Ecologist</td>
<td>Analysis, synthesis, object-form, observation, calculation, dexterity, mobility</td>
</tr>
<tr>
<td>Botanist</td>
<td>Analysis, synthesis, object-form, observation, vocabulary, skillfulness, imagination, dexterity, mobility</td>
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<tr>
<td>Pomologist</td>
<td>Analysis, synthesis, object-form, observation, vocabulary, skillfulness, imagination, dexterity, mobility</td>
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<td>Arborist</td>
<td>Analysis, synthesis, object-form, observation, vocabulary, skillfulness, imagination, dexterity, mobility</td>
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<tr>
<td>Algologist</td>
<td>Analysis, synthesis, object-form, observation, vocabulary, skillfulness, imagination, dexterity, mobility</td>
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<td>Bacteriologist</td>
<td>Analysis, synthesis, object-form, observation, individuality, scrutiny, calculation, skillfulness</td>
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<tr>
<td>Agricultural</td>
<td>Analysis, synthesis, object-form, observation, imagination, skillfulness, dexterity, mobility</td>
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<td>Instructor</td>
<td>Analysis, synthesis, object-form, observation, imagination, skillfulness, dexterity, mobility</td>
</tr>
<tr>
<td>Engineer</td>
<td>Analysis, synthesis, observation, memory, imagination, skillfulness, industry, reciprocity, choice, vigilance, defense, stability, amity, aspirations</td>
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<td>Dispatch</td>
<td>Analysis, synthesis, observation, memory, imagination, skillfulness, industry, reciprocity, choice, vigilance, defense, stability, amity, aspirations</td>
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<td>Supervising</td>
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<td>Domestic</td>
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<td>Science</td>
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<tr>
<td>Instructor</td>
<td>Analysis, synthesis, observation, vocabulary, skillfulness, imagination, dexterity, mobility</td>
</tr>
<tr>
<td>Druggist</td>
<td>Analysis, synthesis, skillfulness, vocabulary, calculation, vigilance, ownership, stability, industry, dexterity, memory</td>
</tr>
<tr>
<td>Botanic</td>
<td>Analysis, synthesis, skillfulness, vocabulary, calculation, vigilance, ownership, stability, industry, dexterity, memory</td>
</tr>
<tr>
<td>Apothecary</td>
<td>Analysis, synthesis, skillfulness, vocabulary, calculation, vigilance, ownership, stability, industry, dexterity, memory</td>
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<tr>
<td>Aurlist</td>
<td>Analysis, synthesis, sound, observation, object-form, calculation, imagination, skillfulness, dexterity</td>
</tr>
<tr>
<td>Otolologist</td>
<td>Analysis, synthesis, sound, observation, object-form, calculation, imagination, skillfulness, dexterity</td>
</tr>
<tr>
<td>Rhinologist</td>
<td>Analysis, synthesis, sound, observation, object-form, calculation, imagination, skillfulness, dexterity</td>
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<tr>
<td>General counsel</td>
<td>Analysis, synthesis, vocabulary, calculation, rhetoric, memory, stability, industry, defense, caution, aspirations, amity</td>
</tr>
<tr>
<td>Attorney</td>
<td>Analysis, synthesis, vocabulary, construction, judgment, facts, system, love-of-power, utility, firmness, intensity, secrecy, protection, ownership, equity</td>
</tr>
<tr>
<td>Patent</td>
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<td>Lawyer</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<tr>
<td>Attorney</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<td>Solicitor</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<tr>
<td>Counselor-at-law</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<td>Marketing manager</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<td>Teacher</td>
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<td>Sales manager</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<td>Department store</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<td>Selling supervisor</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<td>Welfare worker</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<td>Exporter</td>
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<tr>
<td>President of bank</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<tr>
<td>Store General manager</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<td>Merchandise manager</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<tr>
<td>Merchandise supervisor</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
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<td>Weather</td>
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<td>Prognosticator</td>
<td>Analysis, synthesis, vocabulary, rhetoric, synthesis, judgment, facts, system, observation, pride, love of power, firmness, self-esteem, intensity, protection, aversion, destruction</td>
</tr>
</tbody>
</table>

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Vocational Index

Superintendent of schools: synthesis, judgment, calculation, language, memory, vigilance, dignity, stability, ownership, industry, aspirations, Liberty.

President: synthesis, perseverance, equity, utility, facts, independence, firmness, ownership, zeal, vigilance, reciprocity, defense, destruction—somewhat variable.

Merchant wholesale: synthesis, stability, analysis, judgment, observation, calculation, imagination, defense, ownership, industry, liberty, destruction.

Merchant retail: synthesis, stability, judgment, music, calculation, imagination, defense, caution, industry, ownership, destruction.

Policeman: spontaneous judgment, vigilance, observation, skillfulness, object-form, motion-form, secrecy, rest, mobility, dexterity, quality-sense, imagination, balanced temperament.

CONSTRUCTION

Draftsman experimental: construction, analysis, calculation, object-form, observation, memory, industry, ownership, liberty, aspirations.

Engineer technical construction: construction, analysis, synthesis, judgment, vigilance, form, number, memory, industry, stability, equity, aspirations, defense, aversion, destruction, mobility.

Manufacturer artificial stone cement: construction, analysis, synthesis, object-form, hues, stability, industry, equity, ownership, defense, mobility, destruction.

Manufacturer sash door blind windmill pump: construction, analysis, synthesis, stability, industry, defense, ownership, defense, mobility, destruction.

Electrician wire chief: construction, calculation, analysis, object-form, vigilance, defense, industry, stability.

Plumber: construction-general, calculation, object-form, dexterity, observation, mobility.

Master plumber Master steamfitter: construction-general, calculation, object-form, industry, stability, industry, ownership, vigilance, defense.

Motor truck master: construction, calculation, object-form, motion-form, observation, stability, industry, mobility, defense.

Foreman bridge construction R. R. wrecking crane engineeman shovel operator steam: construction, calculation, object-form, observation, stability, utility, vigilance, industry, defense.

Foreman building construction: construction, calculation, object-form, observation, stability, utility, vigilance, industry, defense.

Carpenter: sash and blind maker stair builder: construction, calculation, object-form, skillfulness, industry, vigilance, dexterity.

Foreman waterworks construction: construction, calculation, quantity, observation, object-form, vigilance, severity, stability, defense.

Electro-plater stereotyper business: construction, form, observation, scrutiny, mobility, vigilance, firmness, industry, defense, ownership.

Orthopedic surgeon: construction, intuition, object-form, observation, synthesis, judgment, dexterity, vigilance, mobility, aspirations.
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<td>Steeplejack</td>
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Kindergartner  
Imagination, skillfulness, vocabulary, Form, observation, Parently, Amity, Sociability, Aspirations, Laudation, Stability

Welfare director of industrial welfare administration  
Imagination, synthesis, Aspirations, Amity, observation, Memory, Stability, Industry, Defense, vigilance, Mobility

Editor managing  
Imagination, vocabulary, rhetoric, Imagination, Analysis, Number, object-form, Mobility, Industry, observation, vigilance, ownership, Amity, Aspirations

Electroplater  
Skillfulness, Imagination, object-form, observation, scrutiny, Mobility, dexterity, vigilance

Auto repairer  
Skillfulness, Imagination, observation, scrutiny, Form, Mobility, dexterity

Dentist  
Skillfulness, invention, object-form, individuality, Color, observation, scrutiny, dexterity, inspiration, Integrity, Aspirations, Amity, Stability

Boiler maker  
Skillfulness, object-form, dexterity, observation, scrutiny, vigilance, Mobility

Boiler makers  
Skillfulness, object-form, form-motion, calculation, Mobility, vigilance, Stability, Industry, Aversion, Destruction

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Skillfulness, object-form, motion-form, individuality, calculation, observation, dexterity, Industry, vigilance

Air-propeller Maker  
Skillfulness, object-form, motion-form, individuality, observation, calculation, Industry, Mobility

Printers:  
Skillfulness, object-form, observation, dexterity, Mobility, Industry, vigilance

Engineers:  
Skillfulness, observation, object-form, locomotive gasoline, oil or gasoline, Vibration, Industry, stability, Mobility, protection

WILL FACULTIES AND SPECIFICS

DIGNITY

love of power

General  
Love-of-power, firmness, Industry, imagination, vocabulary, Caution, Amity, Sociability, calculation, Memory, Defense, observation, ownership, synthesis, judgment

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STABILITY

Master mariner's mate
Stability, Dignity, judgment, calculation, vigilance, object-form, vocabulary, Dignity, Mobility, Amity, Sociability

Bank president
Stability, ownership, frugality, synthesis, analysis, deliberate judgment, intensity, utility, calculation, separation, observation, imagination, Memory, Integrity, Defense, Aversion, Destruction

firmness

Master mariner
firmness, perseverance, Aspirations, Dignity, analysis, judgment, independence, reciprocity, courage, specificity, vigilance, Mobility, imagination, skillfulness, calculation

INTEGRITY

Trust officer
Integrity, observation, Aspirations, analysis, synthesis, intuition, esthetics, Amity, calculation, firmness, perseverance, ownership

INDUSTRY

General baggage agent
Industry, firmness, calculation, observation, vigilance, Memory, synthesis, Judgment, Defense

Foreign freight agent

intensity

General freight agent
intensity, utility, hardihood, firmness, vigilance, Memory, observation, calculation, imagination, skillfulness, vocabulary, Defense, Destruction

General freight agent
utility, hardihood, firmness, perseverance, vigilance, Number, Memory, Sociability, Aspirations

CAUTION

Engineerman: marine portable refrigeration engine
vigilance, Construction, observation, music (sound), motion-form, Industry, Mobility, Defense, Stability, Impression

DEFENSE

aggression
Retail sole proprietor: aggregation, protection, ownership.

lumber, grain, hay, and feed express
Caution, Construction, calculation, Industry, object-form, Attention, Mobility, Destruction

dry-goods, umbrellas, silk-goods, fur goods
Caution, protection, ownership, Caution, perseverance, Industry, object-form, hues, Attention, calculation, Laudation

Retail dealer: butter cheese
Protection, aggression, ownership, Caution, taste, smell, Impression, hues, calculation, Industry, Mobility, Destruction

ASPIRATIONS

Missionary
Aspirations, vocabulary, rhetoric, Inspiration, Laudation, Amity, Stability, Dignity, Mobility, Aversion, Destruction, Defense

Minister
Aspirations, vocabulary, rhetoric, Integrity, imagination, Inspiration, Laudation, Memory, Stability, Amity, Reform, Sociability

APPETITE

Steward
Appetite, calculation, observation, object-form, ownership, Memory, Defense

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Appetite, Feeling, Impression, observation, object-form, dexterity, Industry, taste

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appetite, smell, touch, observation, object-form, hues
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- artificial stone and cement
- awning
- bone black, lamp black, carbons, glue, blacking, sulphuric acid, nitric acid, beet sugar, preserves, glucose, starch, yeast
- cloak
- collar
- corset
- electric sign
- lace goods
- last
- men's furnishings
- millinery
- model
- paints, oxides, porcelain, dyes, e.t.c.
- sash, door, blind, windmill, pump
- shade and blind
- shirt
- suit
- tent and sail
- Marketing manager
- Marqueter
- Masseur
- Master mariner
- Master mariner's mate
- Master printer
- Mechanical engineer
- Mechanical fixture
- Mechanic, shop executive
- Medical clerk, employment division
- Medical examiner
- Men's furnishings manufacturer
- Metalist
- Mercantile agency
- Merchandise manager, store
- Merchandise supervisor
- Merchants and dealers, art
- artificial flowers and feathers
- bakery
- butter, cheese, teas and coffee
- clothing
- confectionery
- delicatessen
- dry goods
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SPECIAL SUGGESTIONS

The suggestions in these notes concern the extension and use of the groups of specifics of the approximately 1400 vocations listed in the preceding pages, and the occupational positions in which those having these various ratings are employed. These positions number about 8000, but as many are duplicates except in location of work or in name, only about 1400 descriptions need to be made, the same order of abilities being required in each group of occupations in the same vocation. The manner of grouping these occupations and positions under their vocation is treated in these suggestions.

In the Lesson Text

Many of the vocations in this list of requirements have been quite fully treated in the text, but for convenience are included here. In that treatment where graph tables are used there may be slight individual variations from a typical, or composite, line. Each vocational line of the graphs, and those of the vocations in the lists at the end of the lessons, have been compared with many other graphs of the same vocation in order to establish the “peaks” of power of the vocation as found in especially successful men and women pursuing that vocation.

Faculty and Specific

Throughout the index when a faculty name is given instead of the names of the specifics, it indicates that all of the specifics of that faculty should be closely the same size, not varying much in their ratios, or that they may diminish slightly in the order of their statement in the tables; i. e., Construction is nearly equal to an even imagination, skilfulness, and invention. Where the specifics are named they should be rated in the order given in the text.

Order of Specifics

The order of the specifics in size, as given in the lists, is their vocational order of dominance, and those required to meet most closely the normal vocation. Beyond the first four or five specifics listed, the rest may vary in order if not differing widely in size, but they should follow fairly closely in the order given.

The more fully the list is expressed in the individual in the order given in the text, without other specifics overtopping it, the more fully the individual will have the right natural aptitudes for the vocation.
When another series of specifics overtops those required for a vocation, there is certain to be trouble and dissatisfaction in that vocation unless it is in the line of preparation and promotion for the higher position, and not made the final vocation.

**Natural Aptitude**

Natural aptitude is the order and combination of specific abilities required in a distinctive vocation, whether trained or untrained, active or potential, and the degree of quality needed to compete with the average successful individual in that vocation.

**Talent**

Talent is natural aptitude cultivated to the extent required to reach high vocational success.

**Genius**

Genius is natural aptitude, talent and fine quality, superimposed upon or supported by an intense Will.

**Potential Signs**

When cranial indexes are larger than the facial indexes of the same specifics, or when the cranial and facial indexes are larger than their actual exercise, culture or opportunity for expression seems to indicate them as being, it is evidence of latent power, unaroused ability, unexerted specifics capable of being readily aroused, exerted or cultivated by incentive and opportunity.

**Youthful Potentiality**

In reading potentiality in youth the facial signs indicate present-time volumes of abilities, although these may not be exerted or full of ideas or purposes. The cranial signs may show greater power in some specifics as potentiality that can be developed and that will later express itself if given incentives, opportunity and culture, and so should be of prime interest to the analyst.

**Potential Regions**

Potential, or latent, or quiescent, mental regions have in them some ability to sustain their size even when they have not been stressfully exerted vocationally. They are ready to act when called upon and given the cause and conditions and stimulants to exertion. These potential strong specifics are like the untrained or unexerted muscles of an athletic man, capable of rapid toning, and as nature rebuilds and keeps in size the unexerted muscles in response to the laws of synergic movements, so the mentality attempts to prepare for the use or full exertion of dominant specifics.
Upon these unexerted dominant specifics the counselor bases his judgment in favor of a change in vocation against a vocation using largely the lesser endowed specifics; in their non-use the teacher finds the cause of slow progress, the employment manager part of his trouble in erratic disposition or inability in his employee.

Lost Power and Success

When high power faculties are not exerted in a vocation or in living effort, they have potentiality that is being wasted or lost, and are in a condition of undefined restraint and irritability, and sometimes express themselves in avocations, though generally they are not clearly realized as dominant powers by their possessor.

Self-realization

Natural aptitudes are seldom self-realized vocationally because, while vocations grow out of particular specifics, the secondary and supporting specifics are so varied and themselves so often origins of other vocations, that distinguishing demands are not definite enough for self-analyzed vocational selection.

A few vocations, such as music, oratory, baseball, dancing, and perhaps ten or twelve others, that have the cast of avocations, as plays, amusements, recreations, and social pastimes, are often self-realized through the fact of experience in them. But even these are not self-measurable and lead to much self-deception as to natural aptitude.

Intensive Effort Signs

When specific signs in the face are larger relatively than in the cerebral regions, intensive effort is indicated as having been made for one or two years, sometimes more, and the cerebral regions follow in development. These differences are seldom more than ten or twelve per cent, while the cerebral regions when highly potential and undeveloped often vary fifteen per cent or more above the face.

During the intensive effort the local cranial regions, when not highly potential, are not able to keep pace in changing to the facial specific contour sizes. In unexerted specifics (potential, or latent) the facial specific contours are not competitively stimulated to rise to the cranial regional sizes, and are called potential, having greater power than they are called upon to exert.

In early experience the analyst had better depend upon the contrast between the present vocation and the dominant facial signs, making the cranial potential signs a support to his judgment. The cranial signs are never as specifically read as are
the facial signs, and are far less varied in contour. Of course, the strictly cranial signs of Memory, Language, Impression, Feeling and Appetite, and in some measure, Number, the analyst must read because so far as known there are no strictly facial signs of these faculties or their specifics. The only means of determining the latency or potentiality of these faculties named here is by the comparative experiences of the individual in actual accomplishments.

Choice of Second or Third Best Vocation

When the ideal cannot be attained the counselor must not let theoretical or minor reasons exclude commonsense judgments and practical requirements.

If in conference it is found that, due to age, means, experience, too great lack of education, family conditions, or other controlling reasons, a recommendation of the best vocation cannot be accepted, a second or third choice may be made and advised, and these should be carefully considered in their relations to the first choice and to the circumstances.

Variable Occupations

Many branches and occupational divisions of skilled, semi-skilled, clerical and general vocations—as teacher, salesman, foreman—shown under these special instructions, must have the specifics of the basic vocation and may occasionally require additional specifics of the particular branch or variation from the main vocation. These variations or occupational names of positions constitute the greater part of the 8000 or more occupational titles, and are only duplicated in the text of vocational specifics where the vocational specific variations demand it. See following notes on occupations and relations of positions to vocations.

Job Quality

A rating of Quality from 1 to 10 in the judgment of the counselor or employment manager, can be made of the scale of the individual in the determined vocation. Comparative ratings of the lowest to the highest vocations would require too extreme percentages to be practical.

Some Composite Qualities

Dexterity Skilfulness, object-form, observation, Economy, choice, utility—majority of two or three with skill and Mobility. Sometimes unaccountable.
Courage Specifics Amity, protection, honor, hardihood, Liberty. Transient courage has so many origins in the Intellect, the Affections and the Will, that a description cannot be given that does not omit prime courage combinations.

Relations of Positions to Vocations

Superintendents There are a great number of superintendents who need the specifics cited under their vocational lines, plus the executive specifics of the Will, and they need not therefore be duplicated in the list of vocations. See also notes on Managers and Foremen.

Superintendents generally require the fundamental specifics of the productive side of the department supervised, plus the management, executive, or supervisory specifics. In general the counselor can determine by the nature of the position to be filled whether its executive or managerial functions are industrial, commercial, or technical, and the required range of specifics.

Foremen, High Trade or technical specifics, plus supervisory or executive or management specifics. Tentatively these are usually utility or firmness, perseverance, Amity, hardihood, honor and justice, love of power or protection, propriety, vigilance, the Aspirations, rigor and severity—the possession of the Will specifics that enforce good government, economic procedure, and justice among men.

Foremen, Medium or Low Trade or technical specifics, plus love of power, severity, rigor, vigilance, intensity, utility, firmness, Amity, the Aspirations, Defense and perseverance. In some Foremen jobs the Aspirations need to be fairly high, especially where women or girls are employed.

Managers Managers generally require the trade or technical specifics of their branch of the industry, plus the supervisory or executive or management specifics noted under Foremen. Often there are variations due to the fact that the executive or management functions are commercial rather than technical or operative, and relate more directly to personnel than to production.

Chiefs See Superintendents, Foremen, Bosses.
Contractors  Contractors exist in a great majority of the industries, and they also vary considerably in required specifics due to the comparative size of the contract, to the subdivision of the contract relation to the whole industry, to the variety of technical phases, and to the self-execution of the contract.

Agents  Agents generally require the technical specifics of either the production or the utility ends of the products they sell, plus the selling specifics or the executive specifics or the management specifics, as determined by the nature of their agency.

Inspector  Repairer  There are nearly 300 recognized skilled and semi-skilled inspector and repairer positions. These generally require the specifics of the technicians, or of the journeyman, supervisory, or foreman vocations of their particular lines of inspection or production, and need not be duplicated in the lists.

Assemblers  Assemblers are found in a great many industries and various particular branches of those industries. They fall under the descriptive characteristics given in the note on Inspector and Repairer. In extremely fine work great skill is included. In light work usually dexterity is included. In coarse or heavy assembling Mobility and vigilance are included with the other specifics.

Assistants  Logically, the assistant should possess the quality and specifics of his or her principal or of the vocation, and should potentially be able to develop into a principal, but may not yet have the amount of experience or information of the principal.

Bosses  Bosses usally require the specifics of the trade or the vocation, the mastery of its practice as if competent journeymen or tradesmen, plus the executive and directive specifics of the Foreman or Superintendent or Principal.

Decorators  Decorators are generally artists or tradesmen acting under salary or wages, and having the specifics of the artist or designer or modeler, plus the special training of the vocational line—as glass factory, leather goods, candy, furniture, etc. See various Decorators.
Deputy
Deputies are generally principal representatives, and may be specialized or simply competent to perform a part function of the principal or the vocation, or in some cases a complete vocational function differing only in official representation.

Apprentice
The apprentice should possess potentially the specifics of his apprentice trade or other vocation. These should be dominant in as many signs as possible, the cranial signs usually being found to be larger relatively than the facial signs in youth and early pre-maturity.

Helpers
In the selection of helpers, an approach to the vocational specifics of the principal should be the basis, as in the case of the apprentice, except that the same quality rating and skill or skilfulness may not be necessary or possible in the helper, or the potentiality present that the principal expresses.

Laborers
In the approximately 800 labor positions it would be folly to assume that close differentiations should be made, or that natural aptitudes are as segregative as in higher vocations. But in nearly all of these positions there is a relation to a dominant specific, and in many there are values in the presence of several vocational specifics.

Machine Hands
In the 340 or more designations as machine hand, there are wide variations in vocational requirements as natural aptitudes, but the more specific cases are noted under the specific vocations. Many of these hands work at segments of the journeyman trades.

Operatives
There are over 280 designated operatives, working usually with semi-automatic machine or device, often having another title under the semi-skilled or skilled vocations, and requiring some or all of the specifics of the journeyman trades or of the associate vocation.

Press Hands
In the industries there are approximately 120 positions designated as press hands. The majority of these run semi-automatic machines, devices, or power presses performing a single operation, requiring dexterity, observation, object-form, motion-form, Mobility, etc., to a degree dependent upon the rapidity, exactness and extent of the processes carried on.
Stampers
Trimmers
Turners
Wrappers
Cutters

Great varieties of these vocations run from very simple operations with a simple tool, to complex operations with machines, and vary with different firms or with the quality of the work being done. A description of the specifics cannot be standardized, except in relation to the degree of expertness demanded. See noted instances.

Instructors

Instructors generally need the specifics of the foreman of the vocational line taught, or of the superintendent of the special department, plus the specifics of demonstration of ideas or actions of their particular range of work. These teaching or demonstration specifics are usually vocabulary, rhetoric, observation, Aspirations or Amity, reciprocity, and Stability.

Sole Proprietor Industries

The great majority of the small retail industries and the sole proprietor industries are based upon the journeyman trades and require the journeyman specifics plus the business specifics. The following are examples: retail butcher, tinsmith, florist, the jeweler, costumer and dressmaker.

Merchants

The classification of merchant is extremely broad and includes the small retail and merchandise dealers as well as the large buyers and sellers of products, whether at retail, jobbing, or wholesale; whether as individuals, concerns, or corporations. See index for segregated specifics.

Professions

The professions are generally industrially distinguished from the trades and industries in not being open to development into a business form of activity, or open to that kind of promotion; but the demand for technicians and experts as employees in the industries is increasing rapidly.

Machine Piece Worker

There are several hundred occupations under this designation, all variations of the occupation of automatic or semi-automatic machine hand running a stamping, cutting, or finishing machine or tool.

Trade Tests

At this writing there have been elaborated by mechanics, machinists, and experts in the industries somewhat over one hundred trade tests, or experience tests, intended to determine the degree of skill or skilfulness already attained by the person tested, and as noted in the text they are of immediate vocational value.
It has been our aim throughout the course to confine our work as closely as possible to the prime factors of the practice of the art. One who studies the art or begins its practice may wish, at times, for greater or less elaboration than has been given. We must realize, however, that every art or science has its body of prime elements, that to extend far beyond these elements in occasionally desired particulars is liable to load the text or study with oppressive special relations or uses that themselves are solvable by the prime elements necessary to the practice of that art or science.

The mass of natural sciences, and the technical and complex elements underlying this art, as the sciences upon which any fundamental work in the mental and industrial life of man must necessarily rest, cannot be treated in this text. Much of it, however necessary to the elaboration of this art, is of only indirect value to the student in its practice. This foundation is properly the structural facts and laws of the main parts of biology, physiology, anatomy, histology, physics, sociology, gnostology, taxology, and teleology, all clustering around and highly co-ordinated with mentalogy, but not covering the mentalogy field nor explaining its laws. These branches of human knowledge and the laws of mentalogy have been omitted, as far as could safely be done, from the study found necessary to a fair and progressive practice of the art of vocational counseling and employee selection and management, or the practice of preferable educational direction.