DEPARTMENT OF INSTRUCTION

MAKING A WELL-SPRING FLOW: -

If we have read history and of the religions, rightly; of Confucius, Buddha, Jesus and others, they expressed a philosophy that is livable by all men.

We have an ambition for you -- we trust that you have caught a glimpse of it. It is attainable, you can attain it.

Do you know anything to prevent your developing a rhythmic, spring-stepped, disciplined, graceful carriage and posture?

Is not a good speaking voice - clear enunciation - a good vocabulary - courtesy in argument, humor and repartee, interest, diplomacy and insight a possibility for you?

Surely the art of thinking -- thinking things through, independence of thought, the ability to analyze and to use logic, and to give expression to your impressions, you can acquire. And we shall give you shortly most comprehensive instructions devoted to the end of showing you how to develop this ability. Yes! Instructions on how to think.

When you understand yourself, know what mind is and what it can do, as we instruct you on the subject, there is nothing to prevent you from observing discipline in eating - exercise - sanitation, mental and emotional control.

What prevents you from having an objective - a purpose, a plan, a vision and an ideal? It is just a mental concept, possible for all.

Can you not develop a desire, one that will hold your attention and interest, one that you can live with and for, center and concentrate on and carry with you always - something that is not founded upon selfishness or self-seeking, but will be in the interest of human service?

Why can you not generate confidence and faith in the ultimate attainment, when you know that all things are governed by law, and accomplishment is but a matter of knowing these laws, observing them and utilizing them?

Do you not know that vacillation is a habit, a sort of switch yard, and that determination keeps you on the main line?

Is the profit motive your guiding star, when all human experience proves that "getting" is a sequence - an effect which follows naturally upon giving of yourself, your abilities - your means, your talents and your efforts to the end of service to others?

It is strange perhaps, but true, the well-spring of health - happiness and material well being is within you. Let's be earnest and sincere in our effort to make it flow.

Very sincerely,

THE ORDER OF THE ESSENES

J. Hanner

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TWO THOUSAND YEARS AGO VERSUS NOW

As a student of Life Science you surely recognize that the objective ever in view is to bring about a recognition by you of your responsibility as a citizen of the universal.

We are striving to help you to the understanding of what mind is, and to the discovery of oceans and continents lying undiscovered in your mind; to take you outside of your circle of limitation and frustration; to help you evaluate correctly the purpose of life and to help you find your place in the great scheme of affairs, all to the end of having you do something about it, that you may live more abundantly and may know the exhileration and the thrill of exerting an uplifting influence in a world sorely in need of understanding.

In this instruction you are to continue your study of things material, the discoveries of man in the physical realm, things which man with finite mind attuned to infinite mind has been able to discern and oreate. The objective being to show you that mind - a result or product - is understandable, and that in this day and time you need not go back two thousand years for your symbols or illustrations. What man in those days in some vague and intangible way sensed as existing, and discussed and spoke of in terms of spirit, we now know as forces, energies and units and we take them out of the field of speculation and imagination with varied individual interpretations, and eliminate supernatural implications, and clearly define them,and what is more, demonstrate the correctness of our conclusions.

Continuing our study of instruments and mechanisms and machines which show a conversion of one class of forces or energies inte another and entirely different class, we now observe the Bictaphone-Ediphone or phonograph.

In the handling of our wast correspondence with our students we now use Dictaphones.

This is a mechanism with an electric motor which makes a core or metal cylinder revolve. Upon this core we slide a hollow cylindrical wax record. On a carriage suspended over the wax record is a metal disc or diaphragm, and from this is a needle-like cutting instrument. From this diaphragm there is a hollow tube, and at the end is a mouthplece into which we talk - speaking to our students.

When we are ready to dictate we start the motor attached to an ordinary electric light current, let the sutting needle down upon the wax record, and then start the cylinder with the wax record on it to revolving. At the same time the carriage upon which is suspended the disc or diaphragm moves very slowly - almost imperceptibly so that the outting by the needle is in the form of a spiral that runs from one end of the wax record to the other.

As we talk into the mouthpiece we naturally create sound waves. These make the disc vibrate, much or little. The cutting meedle thereupon cuts minute grooves in the wax cylinder - and one can see little fine wax cuttings on the wax record. Thus mechanical vibrations make wave-like mechanical indentations in the wax.

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The stenographer who transcribes this dictation has a similar machine, but instead of a outting needle on the diaphragm of her machine, there is a fine needle-like instrument which drops into the fine grooves or indentations on the wax cylinder which she has transferred to her machine. Instead of a speaking tube, her instrument has earphones which are held in place to each of her ears. As the fine needle on her instrument drops into these light grooves or cuttings made by the dictation machine, it vibrates a disc or flat diaphragm in the same manner that the diaphragm in the dictation machine vibrated when the record was made, and thus it is turned back into a sound wave and the stenographer writes it just as though she were taking dictation direct from the one who made the record.

Thousands of these machines are used in the business offices of this country daily.

The ordinary phonograph records are made upon flat discs in a very simple manner, and are reproduced in great quantity by using the master record as a cast. Some idea of the great number of phonograph records made can be gleaned by knowing that a hundred and ten million discs were sold in 1941.

Recording is going to undergo very great changes. In these modern times we can now take a wire about the size of a human hair and make records upon it which are called magnetic recordings.

In magnetic recording this very fine wire is moved between the poles of an electromagnet at about the rate of one and one-quarter feet per second. The electromagnet is connected to the microphone or instrument into which you speak, and as the sound waves vary, the poles of the electromagnet create a current which varies with the sound waves, so we have sound waves being turned into magnetic current variations.

To play back the record the magnetized wire is passed through another magnet connected to an amplifier or loud speaker, and thus the magnetic current is transformed again into sound waves.

In this character of recording, the mechanical contact between the wire and magnet is a very tiny area, and surface noise is negligible.

In the dictaphone above described, after the stenographer has transcribed, or written on the typewriter, the dictation on the wax record, the wax record is put into a machine which revolves it, and there is held up against it a very tiny cutting blade, and this cutting blade takes off the surface of the wax cylinder in which were the indentations, and makes it a smooth record ready for other dictation.

Some idea of the minuteness of these indentations can be realized when you know that this shaving machine takes off the surface of the wax cylinder wax only one-fifth the thickness of a cigarette paper.

In the recording on wire by the magnetic process, after the recording is no longer useful it can be blotted out magnetically

 and the wire can be used over and over again. This form of recording is now pretty general in war planes - a record is made of all conversations of pilots.

In the above we have noted a transformation of one kind of force into another, and its transformation back to the original kind of force, so that when we contemplate mind and we realize that sense forces and organic forces and etherial forces are transformed, there will be nothing of the mystical or supernatural about it.

We know that a picture or photograph can be taken in Europe or Africa, and that same picture can be sent through the ether of space instantly. This is done by what we call the telephoto machine.

To describe this without the use of technical terms is somewhat difficult, but with the understanding you have of making sound pictures, and recordings, just described, you know that it is done by a transformation of forces.

You know that a photograph is made by what we call a camera. A trade name upon one make of camera is Kodak.

You know that a camera consists of a lense which focuses the light rays from the object being photographed upon a sensitive film.

This film is made sensitive by having upon it certain materials sensitive to light, and when the film is made, the light vibrations from the object photographed are registered. That which is dark in the object photographed sends forth the least light waves, and the lighter portions of the thing photographed send more light waves; hence the film is just the reverse of the object photographed. In other words, the film is light where the object was dark, and the film is dark where the object was light.

After a film is made it is then put over other material which is sensitive to light, and light is passed through the negative, and we have what is called the positive, or the photograph. When the negative is placed ever light-sensitive paper, and the light passes through the negative, the most light will go through where there is the least impression on the film.

In the telephote machine, the original picture and a sensitive receiving film are wound around a cylinder. A beam of light, very minute, like a pencil point, is passed through this eriginal picture on the cylinder, and the cylinder revolves at 2400 cycles per second, and hence you have a record much like the wax cylinder in the distaphone, but in this instance light rays are making millions of dots.

The cylinder of the telephote machine is also moving along a track, and is moved over very minutely with each revolution.

Now this light beam produces a sinusoidal variation in intensity in the scanning beam before it strikes the picture. By reflection from the picture this beam is modulated in conformity with the light and shade of the successive elements of the picture.

The light travels to a photoelectric cell where a current is generated. This follows exactly the variation in the light beam. This creates what is known as the signal current. It is then amplified and filtered - and the carrier frequency is then ready for transmission.

At the receiving station a similar cylinder revolves at the same speed. The signal current is demodulated - that is divested of carrier current - and the film on this cylinder gets the picture current, which embodies the lights and shades of the original pictures. Thus lights and shades correspond on receiving film to lights and shades at sending station. The motors at both ends are exactly synchronized by a controlled current.

Thus the picture is in effect transformed into radio waves and, different from the radio, it is at the receiving end transformed into light waves instead of sound waves.

If a photograph which has been sent by the telephoto machine were examined carefully under a very large magnifying glass, one would see that it is just a series of what might be likened to pencil point dots, and that there is space between each pencil point dot, vertically and horizontally.

The telephoto operation therefore consists of having the lights and shades and variations from black and white in a photograph vary the intensity of radio waves. These radio waves at the receiving station are transformed into millions of dots varying in accord with the original photograph.

If you would examine under a microscope a pencil sketch on paper by an artist, you would find that it is practically minute dots, because the pencil markings do not get down into the fine lines that divide the particles of paper, one from another. The artist sketches with lines - The telephoto practically does the same thing, but by closely - yes, very closely placed dots.

Just as an observation, is there anything incredible about an individual getting thoughts through the ether of space, when we can demonstrate that there are etheric waves which can be transformed into sound, by the radio; and when there are present also etheric waves which can be transformed into photographs; and when we recognize that both of these potentials and other potentials are existent at the same time and in the same space?

At this point we want to record another observation, the importance of which will be understood when we point out the effect of etherial forces playing upon the brain. When etherial forces pass through any medium they are deflected. You can understand this when you know that light waves from the sun are changed and altered by any vapor or gas through which they pass.

Helium was discovered in this way. It was noted that there were certain markings and distinguishing features of light coming from the sun.

Man knew and reasoned that the earth was an offshoot from the sun,

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and therefore there must be on this earth a gas to correspond with the gas in the sun, which altered a ray of light from it.

Man set about to find that gas that would give the same record when a light was passed through it, and discovered helium.

In Instruction Number Ten we pointed out that Charles F. Kettering, the Director of Research for General Motors, said that he considered "the most important research problem in the world to be to find out why grass is green, because it is the fundamental problem of man's existence on earth."

In that same Instruction we pointed out that James Bryant Conant, President of Harvard, came up through the ehemistry department, and that he specialized on the study of ehlerophyll, that mysterious green substance in plants which alone among materials of the earth is somehow able to use the energy of sunshine to combine water and the carbon dioxide of the air into sugars and thence into starches. He also specialized in the study of hemoglobin, that which gives color to the blood.

It will be interesting, and helpful to review Instruction Ten at this time.

We now point out to you that the chemical symbol of chlorophyll, the green substance in plants, is Mg N4 C55 H72 O5.

Hemoglobin is an amorphous compound which gives to the red corpuscles their coloring matter, and conveys oxygen from the lungs. The chemical symbol of hemoglobin is Fe H4 C55 E72 O5..

By a careful study of these two chemical symbols you find that chlorophyll and hemoglobin are identical, except that the hub of chlorophyll is one atom of magnesium, while the hub of hemoglobin is one atom of iron.

Now here is a highly significant thing: - In the cyclotrens, which we have heretofore described in our instructions as the instruments which break up atoms, atoms of iron have been broken up into magnesium.

These remarkable facts were called to our attention by one of our students who takes an intense interest in things scientific, and in sending it in, he remarked, "Truly man is brother to the trees."

The Universe, as it is pictured by the scientist of today, is a dynamic Universe. It is one in which things are continuously happening. Its key is to be found in an understanding of energy or forces.

An electric current is now known to be a stream of electrons in motion. As we have heretofore expressed it, an electric current is a procession of electrons, each carrying its own little charge of electricity. When an electric current flows through a wire, it means that electrons are moving through the wire bumping their way between the atoms, billions of them passing

along per second. The electric and magnetic fields of an electrified wire can be shown to be the result of the combined fields of the moving electrons composing the current.

Without going into detail, we are just going to call attention to some of the things that electronic apparatus can do. They can control any machine operated by a relay switch to move doors, elevators, conveyers, and so forth. They can by remote control operate machines in pumps, electric substations, lighthouses, planes, and vessels. Electronic apparatus can concentrate heat in small areas to dry or bake, anneal, weld, or rivet; actuate the medical heat treatment, diathermy. Electronic instruments detect dust, smoke, fog, invisible vapors. They can measure and record, and control temperature, humidity, pressure, acidity, and color.

Many of you are familiar with the fact that in many public buildings there are doors which open automatically as a person approaches and remain open until he has passed through, and after that they close. The essential feature of the apparatus which operates these doors is a photo-tube, or what is spoken of as an "electric eye."

The electric eye does not move the door. There has to be a motor to do that, and more power than is in a photoelectric tube, but it does throw the switches which control electric currents which operate motors, which do the actual work.

We call attention to this because the forces which play upon the brain are not the forces that result in what we call behavior, but we may say that they throw the switch, or give the impulse, and then the energy that is created within the human body by the organs of the body, and fueled by the food we eat, the water we drink, and the air we breathe, does the work.

Laying the foundation for the understanding of mind, we stress the fact that the brain is the repository of electrons. It is in the final analysis a combination of electrons. Electronics and electricity are just two names for the same thing.

In our nexts et of Instructions we are going to show you that Mind can only be the result of forces playing upon the brain.

We have classified these forces, and we mean to show you that within man are greater implements, instruments, and appliances than man has ever produced, and that the living mechanism, the human body, is activated by and responds to electric impulses or electronic action, stemming from the human brain. Keep in mind that the brain is not mind and that the mind is not brain, but is a result or product.

In concluding this Instruction, we can assure you that Mind is always mathematically accurate and responds undeviatingly to the forces that play upon it; and that man does make his own conditions, and man is a creator; that the correct solution to any problem is the proper application of the forces available to man; and that man is naturally attuned to the Infinite, to the Omnipresent and the Omniscient.

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