

PART I. To be Completed in Four Parts. 1s. Each.

# M A N

CONTEMPLATED

PHYSICALLY, MORALLY,  
INTELLECTUALLY, AND SPIRITUALLY.

BY

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# WORKS BY J. W. JACKSON.

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## LECTURES ON PHRENOLOGY.

(SECOND EDITION).

CONTENTS:—1.—Principles of Phrenology. 2.—Phrenology in its Application to Education. 3.—The Effect of Phrenological Development on Health, Disease, and Longevity. 4.—Phrenological Development as Indicative of Man's Adaptation to his Moral and Physical Development. 5.—Racial Type and Phrenological Development in their Relation to Art. 6.—Phrenology as an Aid to the Biographer. Shakespeare—Burns. 7.—The Value of Phrenology in Anthropological Investigations. 8.—Phrenology as an Aid to the Metaphysician. 9.—Organic Conditions in Relation to Psychological Phenomena.

The former edition of this work having been long out of print, it has been determined to reproduce it in an enlarged and improved form, that is with several additional Lectures and in Larger Type, so as to form a Companion Volume to *Ethnology and Phrenology* by the same Author. The fundamental idea underlying these Lectures, and consequently the design of the Work, is to *apply* the Principles of Phrenology, so as to render them of practical advantage in the solution of those great problems involved in the education and health of the community, in both of which the facts of Cerebral Physiology are virtually ignored. A similar application of the Science to the requirements of Art in its delineation of the human head, face and form, in congruity with individual character, and the Laws of Organic Development is also attempted, not simply by abstract rules, but also by Illustrative and Descriptive instances. Here also it is time that the ignorant neglect of Phrenological facts and Anthropological data, in an important department of culture to which they are especially applicable, should now cease. The Works of the Old Masters may be disfigured by anachronisms, but those of modern painters are equally disgraced by barbarisms, that is, by the absurd delineation of individual forms, or racial types, which Nature never could have produced, and the equally absurd pictorial representation of historic men, whose known character is in direct opposition to the physical type under which they are portrayed. Neither are we altogether unjust in saying that in Biography there are grave errors, from which a knowledge of Phrenology would have saved authors, otherwise distinguished by sound judgment and deep insight; but who, for want of its guidance, have laboured under misconceptions altogether fatal to their true estimate of the character of the men whose life they were attempting to illustrate. It is surely time that this source of error in so important a province of literature should now be removed; and here also the attempt to do this is accompanied by illustrative examples. Of all existing departments of Science, Anthropology, as being pre-eminently the Science of Man, should be the most expansive in its views, the sublimest in its aims, and the most nearly universal in its receptivity. We suppose it is almost needless to say that the real is in this case, as in many others, very inferior to the ideal. Anthropology has its limitations and its exclusions, like any minor sectarian movement. Among other things, it disdains the study of Cerebral Physiology, and while ready to listen to the exposition of structure and function in reference to any other portion of the human body refuses to investigate the specialization of the brain, that finest, noblest, and most complex part of our wondrous organisation. As one among many other results, of this unwise procedure, it conspicuously fails in any attempt to define the place of Man in the scale of being, whose demarcation is among Anthropologists, as with the general public, a mere matter of opinion. From the same cause also, it largely fails to define the mental constitution attaching to different races and their sub-varieties. It is time that the prejudices which thus retard the progress of a science of such importance should now cease, and an attempt is here made to remove them.

It is almost needless to say that any System of Moral Philosophy or Psychology which ignores Phrenology, must be falsely based, and, as being founded on groundless assumptions, cannot fail to end in hopeless fallacies. If what we term Mental Phenomena be in reality the functional manifestation of cerebral action, it must be at once obvious that the sooner we study passion and affection, principle and faculty, in connection with the specialities of the organisation whence they proceed, the better. A true Psychology, in its application

## CHAPTER I.

### MAN.

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#### INTRODUCTORY REMARKS.

THE place of Man in the scale of being and his relation to the earth on which he dwells, as not only one, but the very highest of all its organs, are topics that cannot fail to prove suggestive of the profoundest thought in all rightly constituted and duly qualified minds. What is Man? whence did he come? and whither is he going? are questions which most deep thinkers must have asked, and to which science with its facts, and philosophy with its deductions, can give but inadequate and unsatisfactory answers. Man, the knower, the reasoner, the contriver, and the creator, yet the liar, the cheat, and the murderer, is the arch-problem of the universe. Man, the sage and yet the sinner, who can weigh worlds in the balance as if they were sand-grains, and who is yet the victim of his passions and the slave of his desires, presents us with conflicting elements in the closest union, yet in the direct antagonism, as if through him the extremes of being were brought into juxtaposition. In truth, the human mind is the border-land of two worlds, the battlefield of two forces, the dread arena where light and darkness, good and evil, interact and commingle to the unceasing disquietude and sometimes the unutterable agony of this child of the spirit, this prince of the eternity, exiled for a season from the bright summer-land of the celestial to the lower realm of the terrestrial and the temporal.

As a problem, Man involves for his solution the entire realm of knowledge. We want Zoology and Comparative Anatomy to define him as he is, and we want History and Archæology to portray him as he was. We need Astronomy to tell us the place of his planet in the solar system, and Geography to map out the several areas of his various races,

together with their climatic influences and their consequently diverse Flora and Fauna, as indicative of aptitude or inaptitude for the permanent maintenance of the different types of humanity. For the word Man has a wider signification now than of old. He fills a larger space in the animate scale than he did to our forefathers. They spoke of him with confidence, as of one genus and one species, while we think he may be the initial type of a whole class or even kingdom of rational being.

In truth, Anthropology is yet in its infancy, and hence the diversity of opinion among its professors, whose ideas are often based on groundless hypotheses in place of ascertained data; while even its most advanced students have scarcely an adequate conception of the amount of ground which it covers, nor consequently of the attainments which its proper prosecution implies. It is for the most part in the hands of specialists, men with a crotchet or a hobby, that may constitute a province of the subject, but which they would exalt into its totality. Flint arrow-heads and stone hammers are the favourite idols of one, while bone caves with their human and animal remains are the pet subjects of another. With some philology reigns supreme, and to them language is the arch-test of racial identity or diversity. While others, on the contrary, regard the mythonomy of the lower and the theosophy of the higher and more cultured races, as the especial indices of ethnic relationship and interaction, near or remote. And with yet another school, physical type, whether as to form or colour, is the one all-important object to which they would subordinate moral attributes and intellectual characteristics, as considerations of minor importance and features of immeasurably inferior significance. Nor is there the least harm in differently endowed men being thus particularly attracted by the subjects specially calculated to interest them, if they would only exercise a certain measure of judgment in rendering their favourite pursuits subservient to the one grand object of illustrating humanity, not on one side only, but on all; so that, in place of a fragmentary and therefore radically incomplete science of Man, we may have, if not the realisation, which is at present impossible, at least the idea of so grand a province of knowledge, which should be the culmination of every other, the keystone of the ever-enlarging pyramid of thought and attainment, the topmost spire of the universal temple of human aspiration and intelligence.

Perhaps it is well, for it certainly seems to be necessary and inevitable, that the real should fall immeasurably short of the ideal. It is so in Anthropology. This branch of science, which ought to exclude nothing connected with Man, is unfortunately characterised by its denials rather than its admissions. It rejects Phrenology, and as a result fails to appreciate aright the vast significance of Man's magnificently specialised brain. It despises Mesmerism, and so fails to comprehend the refined susceptibilities of his complex and highly developed nervous system. It practically excludes Psychology and ignores the occult, and is thus shut out from provinces of enquiry, that could not fail to reward diligent and well-directed observation with a rich harvest of discovery. But these limitations of a science which should be characterised by the catholicity of its spirit and the expansiveness of its views, need not be the occasion for any deep lamentation. Anthropology can only be what the ruling spirit of the present age permits. It must reflect the character of the time, with its partial liberation from the thralldom of the past, and its imperfect apprehension of the liberty of the future. To expect more than this is simply to ensure our own disappointment. We must work with the tools we have. The men of any era constitute the instrumentalities through whom are to be achieved whatever results we intend to accomplish. Our own generation, with all their shortcomings, and not any improved type, moral or physical, of a coming time, are of necessity the subject-matter of our operations. We must take men not as we would have, but as we find them. Let us clearly understand this matter. We stand on a present that we did not make, derived from a past whereof, perchance, we gravely disapprove, but which nevertheless virtually constitutes the only possible and practically available environment for our lifework. *Here and now*, and not there and then, is the workshop of all earnest souls, the arena of all true heroes, the sole battlefield of every warrior who would come off more than conqueror from the conflict with error, as a victorious saviour, whose onslaught is not for the destruction, but the salvation of his foes.

But while we would not needlessly lament over the limitations of Anthropology, knowing its necessities, we would nevertheless seek to enlarge them. This Lazarus, though called from the tomb and showing considerable signs of life, is still bound about with many grave-clothes, which it behoves

us to strip off with such haste as we may. There need be no fear of our ultimate success. The light is always stronger than the darkness. Few things are more swiftly evanescent than the shadows of night at the approach of sun-dawn. Show men the truth, and their errors will perish of themselves. The true Hydra is prejudice, which Apollo so surely slays with his swift-winged arrows of intellectual splendour. Exclusiveness always holds its little territory on an expiring lease, and that of limited Anthropology is fast approaching its inevitable termination.

It must not be supposed that these remarks have any personal bearing. This would be to altogether misconstrue their purpose, which is the expansion of the science and not the criticism of individuals. The latter are doing the work appointed them by the Infinite, who knows how to apportion the labour to the man. It needed hodmen to erect St. Paul's. Phidias might have carved the statues of the Parthenon, but common masons laid the foundations on which his peerless productions ultimately rested. When the science of Man wants a master-mind it will obtain him—as zoology evoked Cuvier, and the drama called forth Shakespeare. All in good time, the many first and the ONE afterwards.

From the preceding remarks on Anthropology, the reader cannot fail to see what we regard as its especial defects, which, however, we may remark, are ever incident to the infancy of a science based on Induction, and so advancing to its ultimately assured triumph by the slow but sure processes of observation and investigation. It is strong in detail. It is weak in generalisation. It needs broader views and profounder insight. It accumulates facts according to its light with praiseworthy assiduity, but nevertheless fails in that grasp of thought which could effectually seize and subordinate these really valuable and important data to the discovery of law and the illustration of principle. It is not, however, alone in this. Science as a whole is at present very largely in the hands of specialists, men at the farthest possible remove from the mental constitution and calibre of Bacon, but who, nevertheless, in their respective provinces of enquiry, very efficiently aid in carrying out those great purposes which his vast mind so clearly foresaw as possible in the coming centuries. Once more, then, let it be distinctly understood that we neither blame Anthropologists nor disapprove of their respective departments of investigation, our aim being, indeed,

as their humble fellow-labourer, to raise the science of Man to an elevation somewhat correspondent with the grandeur of its subject-matter, feeling fully assured that the larger our views the greater will be the results to which we may ultimately attain, and the more important the discoveries we shall at length be privileged to effect.

The radical defect, then, of Anthropology as at present prosecuted is, that it is too purely physical in the range of its investigations, and too merely material in the spirit and aim of its enquiries; and as an inevitable result of thus contemplating man only on his lower and, if we may so say, earthward side, it either wholly excludes or unwisely neglects vast provinces of his compound being, with all their important results as manifested in the religions, laws, philosophy, language, literature and art of successive ages and of various races and nations. It would be untrue to say that these subjects are formally excluded. It would be unjust to hint that they are even slighted when occasionally introduced; but it is not going too far to affirm that they are subordinated in the importance attached and the attention bestowed on them, to subjects, in the estimation of every one except Anthropologists, with a speciality, of immeasurably greater value and significance.

It might perhaps be supposed, from the general tenor of the foregoing remarks, that we think too much attention has been given to physical and savage man. But this would be a mistake. We cannot, by any possibility, study the human organism too minutely or too profoundly. It is the highest and most complex, the most beautiful and the most effectually specialised structure in the telluric sphere. We must go, indeed, immeasurably farther in this direction than we have yet done. We must have a Comparative Anatomy of Man as of brutes. We want to know not merely the osseous specialities of the various races, but also the disposition and volume of the muscles, the relative proportion of the viscera, and, above all, the diversities in volume, quality, contour, and convolution, attaching to the brain of the grander divisions of mankind. Nor would we confine these investigations to the organic specialities characteristic only of races, but would also descend into the peculiarities attaching to the various temperaments and castes of the same race, together with their physiognomic expression, their physiological functions and pathological susceptibilities. In this direction we are still

profoundly ignorant of facts which surround us on every side, and press upon our attention not only in medical practice, but in the social intercourse and daily duties of ordinary life, and where any man of trained powers and naturally acute observation, may accumulate facts of unspeakable importance to a true Anthropology.

Neither would we despise the savage—on the contrary, we wish him to be studied more profoundly than at present. He is the rock whence we were hewn. He is at once pre-historic man, and yet our cotemporary. We enjoy advantages in this respect that no Greek or Roman ever knew. We have joined not only the ends of the earth, but, we may say, the eras of time, together. We fear, however, that we have not yet duly availed ourselves of these great advantages. We have allowed not only our religious but our scientific prejudices to stand in the way of a thorough investigation of savage life. We have commenced by defining his religion as a superstition, and terming its ritual a mummery. We speak of him as a heathen, and call his God an idol; and so inaugurate our hopeful process of converting him to our faith by blaspheming all which he holds sacred in his own. Perhaps it will be said that this is only the missionary mode of procedure; but, we would ask, is our scientific method much better. What is the tone of all ordinary travellers when they speak of the occult practices of rude nations? Do we not find that, as a rule, they have either suppressed the facts altogether, or wholly misunderstood, and so misrepresented them. What is the medicine man of the Indians of North America, or the Caffir prophet, or the Negro practitioner of Obi, or the shaman of the Ostians, or the conjuror of the Lapps; or, as to that matter, a Buddhist Lama or a Turkish Dervish, as portrayed in ordinary books, but a miserable travesty of the reality, dressed up to suit the prejudices of ignorant readers at home, who do not want and would not bear the truth on such subjects, and who are consequently as much shut out from the real psychology of savage and even barbarian life, as if their ruder brethren lived on another planet.

But while we thus advocate the profoundest study of the organic structure of man, and of his mental constitution and aptitudes under the rudest form in which he now exists, and while we would afford every possible encouragement to, and provide all practically available facilities for those archæological investigations which promise to reveal the anatomical

peculiarities and social condition of races, whose age at present can only be defined by terms adopted from geology, we must yet protest against the comparative indifference hitherto manifested by most anthropologists in relation to the mental characteristics and developments of the higher divisions of humanity. And here let us point out what we cannot but regard as an arch fallacy on this subject. We allude to the idea, almost everywhere prevalent, that the manifestations of superior intelligence we obtain under the conditions of civilisation are artificial, and, in a sense, forced products. Whereas a theology the most sublime, a philosophy the most profound, a literature the most polished, and an art the most idealised and refined, are as natural to the more effectually developed and cultured Caucasian as his Fetish worship to the Negro, and his wigwam to the Indian. Even the keenest observers and deepest thinkers seem to be here at fault. They allow the prejudices of education and the traditional habitudes of ancient thought to dominate both their insight and their judgment. While they admit that the cell of the bee and the hut of the beaver are the outcome of their organisation, thus ultimated in its appropriate effects, they pause at the canoe of the South Sea Islander, and the tented cart of the Nomadic Tartar, and fancy they can here detect the presence of art invading the realm of nature, not apparently understanding that art, and with it all other culture, is as inevitable to, because as instinctive in man, according to his several grades and races, as her social proclivities to the ant, or his burrowing tendencies to the rabbit. Alas! say we, for the Anthropology that can listen to the song of the nightingale, and pronounce it natural, and then attend a performance of Handel's "Creation" and regard it as artificial.

Our task hitherto has certainly been very ungracious. We have blamed where we should have praised, and detected faults where we might more readily have discovered merits. Suffice it that we regard most Anthropological works thus far, as merely preparatory to other and more successful efforts hereafter, when in a more advanced stage of the science we may generalise with comparative certainty, secure as to our facts and assured as to our conclusions. Let us now then, without farther prefatory remark, and with the clear understanding that our data are inadequate and our deductions consequently uncertain, proceed to the exposition of our

topic, which is Man, first in his physical and then in his mental attributes and relationships.

And here let us ask, what is Man, that is, what rank does he hold and what place does he fill in the great scheme of creation? In the first place, he is not a solar but a planetary being, which is equivalent to saying that he is not a radically central and self-poised, but, on the contrary, a thoroughly dependent, and we may add an essentially immature and imperfect being. As is the habitat, so must be its tenant. The earth is neither the largest nor the smallest of the planetary bodies. It is neither in closest proximity to, nor at the farthest known remove from the sun. It is not wholly devoid of a satellite, nor specially provided with them. Perhaps we scarcely go too far then in saying that as a domicile, its astronomical position, if we may be allowed the use of such a term, is unmistakably indicative of mediocrity in its especially representative inhabitant. But, it is not only dependent on the sun, mechanically, or, if you will, through gravitation, that is in its place, and through the elements of its motion, but it is yet more dependent, through its opacity, on the great central orb of light and glory. It has no splendour in itself, and would roll along in rayless darkness, through the dim expanses of the universe, but for the brightness of the sun and the scintillations of the stars. It is not yet sufficiently mature to become effulgent, like its solar sire, in the glory-woven robe of its own vitality. Neither is it dependent on the sun only for light, but also, in some measure, for warmth: a magnificent emblem of man's dependence on the inspiration and the love of God.

It is the same with the earth's movement in her orbit. Advancing on her apparently pathless track, with a velocity that laughs all human contrivances to utter scorn, she yet completes her circuit to the appointed moment, and keeps her tryst unflinchingly, while not only the oaks upon the mountains grow sere and old, but while the very mountains themselves, that men in their folly have called the everlasting hills, are slowly upheaven and again overthrown, as the hours of their stupendous though never lingering destiny strike out on the horologe of God. And is not this a sublime yet beautiful symbol of the divine providence in its guidance of man through that mystic cycle of steadily unfolding events we call his life, with the vernal blossoms of its blushing youth, the summer foliage of its vigorous and almost redundant

manhood, the golden fruitage of its mellowed autumn, and the wintry snows of its honoured age and welcome death—which is but the portal to a second spring. Can we suppose that He who guides the mansion so carefully will altogether neglect its tenant? Do the teachings of the microscope, that great revealer of the infinitely small, support such an idea? Rather let us say, it demonstrates, that as nothing is too vast so nothing is too minute for the all-embracing love of the universal Father of every order of being, to whom leaves are worlds and suns are sandgrains.

But we have not yet quite finished with the symbolism of our terrestrial dwelling-place. We have said that it is opaque and non-luminous, and hence hurls us men of the tropic and temperate zones nocturnally into darkness—the emblem of our sorrows, and, but for its stars, of our despair. Yes, Night is a great preacher—perhaps, could we see it aright, the most eloquent of all. She veils the earth that she may reveal the heavens. Her star-gemmed robe is the charter of our immortality. There, in characters of everlasting light, God has inscribed his promises to men—that they shall not surely die, but, at the sunset of life, enter upon the sublime fruition of their grand hereafter.

But the teachings of Nature, that beautiful handmaid—nay, that bride divine of God, are not confined to night. Day also has its lessons of profound wisdom and of deep insight, draped now in sunset glories and anon in matin splendours. Day, in direct contrast to night, reveals the earthly and veils the heavenly. It is the time for work, our practical yet earnest lifework, in those fields of labour where, if the weeds abound, the flowers also are not absent. It is an ordination of God that we should plough and sow ere we reap, both morally and physically, and day is the period for these operations. He who would cast his bread upon many waters, must do so ere the night cometh, in which no man can work. Let us then not despise our earth-life. It is the seedtime of eternity, where the golden sheaves will be garnered we have here, often amidst blood and tears, so laboriously bound together.

Such, then, is man's terrestrial abode, regarded astronomically. An opaque planetary body, entirely dependent on a solar centre of light and glory, the emblem of God and his material creation. As an opaque body, it of necessity casts a shadow, and thus occasionally darkens even its own moon at the full, as man, alas, sometimes overshadows his fair and

beautiful counterpart woman, involving her in the dim eclipse of his own sin. Perhaps these terrible tragedies are unavoidable in that dance of death we call life. And yet it is a terrible spectacle, this dread occultation of so fair a being, walking in the brightness of her youth, as if her path led gloriously through the starry mansions of the celestial. But let us not despair—no eclipse is for ever. Though that of the moon be often total, it is temporary; while all solar eclipses are, in addition, partial, as regards the limited area covered by the shadow of totality. But the shadow, whether of the earth or the moon, is a cone, which, thanks to the enormous magnitude of the sun, soon terminates in a sphere of unimpeded light and glory—cheering emblem of the limited duration of the effects of sin, despite the exaggerations of ignorant theologians, apparently quite incapable of interpreting the symbolism of that nature amidst whose fields and flowers their Master walked, a veritable poet, and so suffused his exquisite parables with the pulsing life of Palestinian scenery, where the lily and the vine afforded him texts that he might in vain have sought amidst the venerable pages of the ancient prophets.

But the earth, in addition to its planetary place and motion, as an integral part of the solar system, has also a special telluric life of its own, and this too abounding with phenomena, both scientifically and symbolically, of the profoundest interest, more particularly in their relation to its archtenant, man. If the position of the house be of importance, most assuredly the disposition of its chambers, and, we may add, their furnishing, cannot be insignificant. Now, we find that the surface of the globe is divided into land and water, the latter, as a superficial area, largely preponderating, indicative of the fact that aqueous forms and oceanic life are still very important elements in the telluric scheme of existence. Now this is a province from which man, organically speaking, is widely dissevered, as he is the last and noblest product of the aerial ocean, with the finer senses and more intense cerebration to which its higher conditions have given birth. The proportion of land and water, together with the organic forms to whose evolution they have respectively conduced, are adequate evidence that the earth, as a sustainer of life, is still immature, and has consequently a splendid futurity yet in reserve. It is observable also that the preponderance of land is in the northern rather than the southern hemisphere, and in correspondence with this we find that the sentient forms of organic

life tend to cerebral and thoracic development in the former, and to abdominal and lumbar development in the latter. These are facts, as we shall hereafter see, of deep import in relation to the present condition and future destiny of man. Let us illustrate our meaning here by a few instances.

History informs us that all the great empires of the old world, together with their several phases of civilisation, flourished north of the equator, and for the most part in the temperate zone. China, India, Egypt, Chaldea, Assyria, Persia, Greece, Rome, Carthage, and the states of modern Europe, are adequately illustrious examples of this proclivity in humanity to evolve its higher forms of culture along the line of the great axis of the eastern hemisphere, which extends in an area beyond the tropics, from the shores of the Pacific to those of the Atlantic Ocean. Such facts, so vast in their range and so enduring in their results, can neither be accidental nor exceptional. They must have occurred in accordance with law, and be due to the presence of a principle, whose power in the past is the best indication and admeasurement of its probable manifestation in the future.

Ere leaving this subject we may remark that, as a contrast to the foregoing, we find in the new world, whose major geographical axis is from north to south, that civilisation appeared on either side of the equator, and notably within the tropics, thus showing how important is the arrangement of the great masses of land in relation to the disposition of the more influential seats of culture, which obviously tend to an axial position on the continents in which they prevail. Nor is it without significance in this connection that Australia, isolated in position and southern in latitude, and so unfavourably situated in both respects, has been apparently ever devoid of even the elements of true culture. While, in strict correspondence with this, its fauna are so low in the scale that its mammals are wholly marsupial, with the exception of man, who constitutes the only placental type in this vast area of sentient life. It need scarcely be said that the Anthropology which would overlook such facts is unworthy of the name, and must ultimately yield to a form of inquiry at once more comprehensive and also more profound.

We have spoken of the aqueous and aerial oceans. Man is allied to the former through his blood and other fluids, still constituting by far the larger portion of his corporeal structure. While he is related to the latter through the function

of respiration, which however he shares not only with animals but also with plants. Now, the mobility, elasticity, and translucency of the atmosphere, are all clearly indicative of its inherent and essential superiority, as a circumambient fluid to water, and we must not therefore be surprised at the organic and functional superiority of the life-forms which inhabit it. But above and beyond the aerial, there is the magnetic ocean, composed of yet higher elements and endowed with far superior powers to those of the aerial ocean. Now man, while more especially a dweller in the latter, holds also certain intimate relationships to the former, indicated by the comparatively effective development of his nervous system, and more especially of his powerfully formed and magnificently convoluted brain, which are simply instrumentalities, the former for the circulation and distribution, and the latter for the concentration and evolution of that highest form of imponderable force known as the *nervo-vital* power, whereof we have reason to believe that we obtain an extract in the mesmeric aura of a vigorous magnetist. It is here that we perceive man's inherent superiority to all the other forms of life appertaining to the globe. He is surpassed in the complexity and specialisation of his alimentary arrangements by the ox, and in intensity of respiration by the bird, but neither of them approach him in the development of the nervous system, nor consequently in the nearness of their relation to the imponderable elements of the universe. This contemplated analogically, indicates that he is not only the most intellectually endowed, but also the most morally elevated type of being on the earthplane, and consequently, for whose superior we must ascend to a sphere where it is possible there may be an improvement on merely telluric conditions.

And while zoology and comparative anatomy thus combine to demonstrate the organic supremacy of man in the animate scale, geology and palæontology confirm their verdict by the evidence which they afford, that he is the last of the sentient advents. Nature has produced nothing more recent, and consequently, we have reason to believe, nothing superior to the human type on the globe. This testimony of the geological record is of more value than is commonly supposed. The gradual ascent of organic structure, whether in the vegetable or animal kingdom, with the lapse of time, is now a fact universally admitted, however it may be accounted for, and the lateness of man's arrival is no mean evidence of the

altitude of his grade in the scale of earthly being. The real place of man in this scale appears to be that of an aerial type of the mammalian quadruped. This perhaps demands some explanation.

All being is based on a bipolar arrangement of its forces, and consequently of its forms, derived apparently from the fact that spirit and matter, the universal positive and the great negative, enter into and constitute the totality of existence. Hence light and darkness, heat and cold, motion and rest, life and death, male and female, as the exposition and manifestation of what we summarise as God and Nature. Now, as a result of this bipartite division of things, which however does not imply any other antagonism than that which finally results in harmony, we have a duplex arrangement of all the grander divisions of sentient being, into what we have elsewhere termed its terrestrial and aerial types. These may be thus specified. In the ganglionic grade, we have the grub and the papilio, or, shall we say, the wingless worm and the winged butterfly. In the earlier, that is the oviparous stage of the vertebrates, we find the reptile and the bird, the former cold-blooded and with imperfect respiration, while the latter is not only warm-blooded, but has respiration at its known maximum. Then, advancing to the viviparous grade, we have the quadrupedal and instinctive mammal, and the bipedal and rational man. But in each of the oviparous grades, whether of grub and butterfly or reptile and bird, we find that the aerial type corresponds with, and in a sense reproduces, the lower and more terrestrial, as if it were simply a transfiguration and glorification of it. The animate scale of the one, in short, is the counterpart of that of the other. But it is otherwise with man; his orders, genera, and species by no means correspond in range and variety with those of the quadrupedal mammals beneath him. Now, Nature is never at fault, either through error or final deficiency in resources. But she has her processes, as of bud, blossom, and fruit, and during these her results may seem unsatisfactory, and, to an unpractised eye, even her means may seem inadequate. But you have only to wait for the completion of her cycles to witness the full evolution of their appropriate effects. It will be the same with man. He is at present initial, and consequently incomplete, and so, in a sense, imperfect, both racially and individually. His orders are races, his genera are nations, and his species are castes, oftentimes chaotically mingled, and never more

than faintly adumbrated. Nature has here only outlined but not filled in her picture. She has simply laid the foundation of the mighty edifice, whose massive pillars and towering pinnacles are yet to be evolved from the resources, and during the waning centuries, of the future.

We are now then enabled to define the place of man in the scale of being. He is an initial type of that higher form of mammalian life, which, in this superior grade of existence, corresponds to the bird and butterfly of the oviparous classes. Although aerial, however, he is as yet only winged in thought. In aspiration and imagination, his pinions bear him upwards to an empyrean in which no eagle has ever spread his wings, where splendours may be seen and whence prospects may be scanned, on which no merely material eye may ever presume to gaze. And yet the being thus endowed, so profound in thought and so vast in conception, whose soul is ever haunted by forms of inexpressible beauty, and whose consciousness is stimulated by standards of unattainable rectitude and purity, is still, comparatively speaking, only in the process of emergence from quadrupedal conditions, which indicate not only the proximity of his relationship to lower forms of life, but also the time and effort yet needed ere he can arise from his chrysalis tomb, framed on the type and clothed in the vesture appropriate to the exalted humanity of the future.

Let not these expressions be too severely interpreted. The true transitional type between man and the quadruped are the quadrumana. With anterior extremities still imperfectly specialised into intellectual instrumentalities, devoid of the command of fire, and altogether unprovided with mechanical contrivances, they are merely arboreal brutes on the plane of Nature, like the quadrupeds beneath them, if indeed the latter phrase be in all respects strictly applicable. Like other brutes, they exist intellectually on the plane of mere perception, that is, purely in the sphere of fact, and are obviously quite incapable of rising from phenomena to the laws on which they depend. Such creatures can have no abstract ideas, and so dwell unvaryingly amidst the diurnal routine and casual incidents of their arboreal life, without even attempting to master the principles in which such experiences originate. So, correspondentially, they have no ideal standard of excellence, transcending their ordinary experience, and leading them onwards, by successive efforts, to the gradual realisation of a higher standard of existence than that previously attained.

Now, in any comparison between them and man, let us remember that the latter can be sage and poet, savant and artist, thus in the sphere of thought and knowledge ascending from facts to principles, and this, too, with a mastery of the laws of Nature that often enables him, as in the case of eclipses and other astronomical phenomena, to pre-calculate results which can only transpire at the end of many millenniums. While in the realm of the ideal, his conceptions of beauty and excellence so far surpass his actual experience and his power of realisation, that they often render his ordinary life a source of perennial dissatisfaction, this being the providentially-appointed stimulus to that exercise of his mental powers through which unending progression is ensured, if not to the individual, then, at least, to the race.

Nor is there less difference between man and these anthropoid brutes in the sphere of morals. Here the ape, like any quadruped, is simply the creature of instinct. He is governed not by the higher sentiments, but by his passions and affections. What they prompt him to, he does, regardless of consequences, which he cannot foresee, and indifferent to the suffering he may inflict, and with which he cannot sympathise. Strictly speaking, he has neither prudence nor conscientiousness, veneration or benevolence. Of justice he has not the remotest conception. Of mercy he is wholly incapable. While to the truly sublime moral altitude of worship he never, in any mental altitude, even remotely approaches. Now, compare this miserable being with man, in whom, despite all his errors and malversations, rectitude, or, as we sometimes say, integrity and veracity, are abiding principles, and in whom, though anger and revenge may rule for a season, yet from whose gentle heart, more especially the heart of woman, pity ultimately distils like the dew of heaven, and mercy, based on the profoundest sympathy, falls on the object of suffering, like the summer rain on the parching soil. But, above all, how shall we express the width of that gulph where, on one side, the soul, if there be one, is wholly of the earth, earthy, while on the other, despite manifold lapses and perversities, there is ever an aspiration heavenwards, and a struggle Godwards. We have spoken of man as the sage and poet, but he may, and oftentimes does, rise yet higher; he may be the saint and prophet, dwelling in the light and partaking of the love of infinite perfection.

It is here that we begin to perceive the place of man, morally

and spiritually. We have already shown that, structurally, he is at the head of telluric creation, the most highly organised and most thoroughly specialised being within the range of our cognition, and for whose superior we must transcend the limits of terrestrial organisation. But this is only a definition of the casket, not a description of the jewel which it contains. It is not the body of man, however admirably constituted, but his mind, which renders him so deserving of our profoundest regard. As we have seen, intellectually, he ascends from facts which are temporal, to principles which are eternal, while, through his imagination, he rises from the plane of mere utility, which is earthly, to that of beauty, which is heavenly. We might then, from these endowments alone, predicate that he contains that within him which could never die, a germ of such wondrous perfectibility, that time and its opportunities can never suffice for its full and final development. But in strict accordance with those harmonic laws which, so far as our knowledge extends, pervade the universe, and ensure mutual adaptation between all its several parts and provinces, the moral correspond with the intellectual endowments of man, if not always in the individual, then collectively in the race. And it is well that they do so, for as we sometimes see in certain unhappy and we trust exceptional instances, where the intellectual faculties approach transcendent talent, and sometimes even reach the culminating point of genius, while the unfortunate possessor lacks proportionate moral sentiment, the most fearful evils often result from this unequal combination of power, without due self-command for its efficient guidance. Man then, taking him collectively, and even racially, is found to have moral sentiments proportionate to his intellectual faculties, and thus, from this two-fold endowment, is constituted not merely the terrestrial lord, but, we may say, has been consecrated and set apart as the God-appointed and spiritually ordained high-priest of creation, through whom alone, in this sphere, it is enabled to offer intelligent worship and acceptable self-sacrifice to the Creator.

It is on this side of him that all ordinary Zoological and Anthropological treatises generally fail in the enumeration and specification of his attributes. It is doubtful if any such works have yet done justice even to his intellect, and they have beyond all question conspicuously failed in the treatment of his moral nature. They have regarded him too

exclusively from his *roots* in the animal kingdom, and as a result of this undue attention to the inferior elements of his compound being, have overlooked those prophetic *blossoms*, whereby he gives promise of belonging ultimately to the rational and moral kingdom of earth's sublime futurity. We are aware that these ideas can scarcely be regarded as scientific. They would not very readily find admission into the published papers or authorised journal of any learned body in Europe. They lie at present outside the recognised boundaries of scientific research, which are rigidly limited, if not to the facts of sense, then, at least, to certain authorised provinces of investigation. Nor do we object to this. Order is thus, perhaps, better preserved. It is quite right that free speculation should precede formal enquiry, and that individuals should lead those forlorn hopes, whereby the citadels of olden error and traditional prejudice are finally stormed.

It must not be supposed, however, that these learned bodies thus exclude whole provinces of ascertainable truth from the range of their investigation without suffering from that Nemesis which, by the law of compensation, ever ultimately exacts a penalty proportionate to the offence. Let us illustrate the meaning of this remark. Anthropologists as a body, although there are many honourable individual exceptions, refuse, as we have said, to recognise the truth of Phrenology. Zoologists, Comparative Anatomists, and Palæontologists, have also taken up the same position, and as a result, are in utter confusion as to the true cerebral physiology, whether of man or brutes. The Comparative Anatomist, for example, is almost superabundantly eloquent on the beautiful congruity everywhere observable between any one part of an animal organism and every other. The herbivorous teeth always co-existing with a stomach and intestines, specially adapted for the digestion and assimilation of such a diet, as the teeth are fitted to prepare for their reception. While, as in the case of the well-emphasised instance of the ruminants, the extremities are simply, though admirably, framed for that pacific form of locomotion, which the daily search for such food would imply. But how is all this altered in the case of the felidæ. Here we have not only carnivorous teeth, with a stomach to correspond, but also taloned extremities, and a frame so constituted by the disposition of its bones and muscles as to ensure a degree of elasticity and strength in proportion to weight, such as is only surpassed in their

aerial counterparts, the terrible raptors, of whom the diurnal have as yet no true correlates in the quadrupedal sphere. Now, all this is, no doubt, very instructive, and we cannot be too grateful to Baron Cuvier and his followers for the many beautiful illustrations of organic adaptation which they have thus provided for us. But despite our profound respect for the knowledge and heartfelt reverence for the conscientious and painstaking labour of these deservedly illustrious men, let us not forget that in their anatomical and physiological researches they have omitted to notice the specialities, in each case, of that finest portion of the organism, the brain, which sets in motion and controls all those subsidiary portions of the system to which their attention has been so profitably directed.

And it is the same with the ordinary Anthropologist, who endeavours to define races and even their sub-varieties by cranial, physiognomical, and other characteristics, which necessarily co-exist with, and are, in a sense, the effects of cerebral development. Now, one result of his thus ignoring even the rudiments of a true cerebral physiology is, insuperable difficulty in defining the place of Man in the scale of being, whose relation to the Ape is derived rather from the extremities of his body than the interiors of his mind. Hence, controversies without end about the existence of Hippocampus Minor in the lower type, the presence or absence of which is of comparatively slight importance as a determining element of grade in the scale of being, while, at the same time, the magnificent hemispheres in man are overlooked, or, at least, altogether under-valued by the very persons who lay such an undue stress on merely basilar characteristics. Nor, as we have remarked, do the evils of ignoring Phrenology stop here. They introduce utter and endless confusion into our attempted definition of races, whose place in the humanitarian scale is largely determined by cerebral force, as indicated through volume, contour, and quality. Now, of the powerful aid which Phrenology would give in deciding on the absolute strength, or the relative proportion of these important characteristics in any particular type of man, it is needless to speak. Those who understand this science are aware of its vast resources in this respect; while conversely, those who are ignorant of it have no right to form an opinion.

But quite independently of the assistance which Phrenology would afford in defining the place of man in the scale of being,

and in providing more accurate racial demarcations than those to which we have yet attained, what a revelation does it not yield of the inner nature and essential character of Man in the abstract, with all his vast powers and yet all his stringent limitations. How, without its help, are we to form even the remotest conception of the ever varying proportion of passion and affection to sentiment and faculty, in the manifold individuals and diversified types which constitute that grand totality of partly impulsive and partly rational being, we term Humanity. As we have already shown, it is impossible to thoroughly understand the nature even of brutes, in whom the nervous system holds a comparatively subordinate place, without the help of a cerebral physiology, which would enable us to determine their mental attributes as well as their corporeal structure and functions. But if it be true of this vastly inferior order of being, how much more applicable must it be to so exalted a type as that of Man, where the nervous system is admittedly the ruling element, and cerebral development is the most important characteristic. And yet, with these plain truths, put, in a sense, palpably before them, the authorised expounders of Man's nature still remain comparatively indifferent to the establishment and recognition of a system of cerebral physiology, by which, not only would their own favourite science be advanced in many of its dependent provinces and subordinate specialities; but through which, some of the deepest problems in relation to Man's profounder nature and destiny would approximate to solution.

But if it be unwise in the professors of the science of Man, to neglect the structure and functions of so important an organ as the brain, is it not, also, equally injudicious on their part to overlook those peculiar susceptibilities and, we may add, capabilities of the nervous system manifested under the influence of Mesmerism. No doubt it is fashionable, just at present, to ignore these important departments of enquiry, which run counter to the general tendencies of scientific investigation. But what if they involve some great truths in relation to the structure and functions of Man? Where, then, in the estimation of a more enlightened future, will be the place of a professed Anthropology that shall have purposely neglected them. Now, every Mesmerist, with anything approaching to an extensive experience, knows there are phenomena developed under magnetic conditions, of the great-

est interest to every true student of humanity, and of which no Anthropologist, if he would be even approximately universal in his aim, and all-embracing in his receptivity, should willingly remain ignorant. And yet such is the inertia attaching even to new societies and really liberal and progressive institutes, that this most important department of doctrine and practice has been utterly neglected by every Anthropological society in Europe. Why, the phenomena of phreno-mesmerism and clairvoyance alone, would fill a volume with facts of the utmost importance in the study of Man, and without a knowledge of which, indeed, our acquaintance with the profounder elements of his nature must ever remain, not only partial, but superficial. It is the same with his psychology. What, for example, can we think of an Anthropology which neglects dream-life? that strange and mysterious province of our compound being, where the ordinary laws of vigilant perception seem inverted, so that, in place of objective realities exciting perceptive impressions, it is subjective ideas and conditions which seem to evoke a corresponding environment. Can we be said to have studied humanity till we have probed this problem to its profoundest depths, and attempted the solution, not only of ordinary, but extraordinary dreams, we mean those which are obviously clairvoyant and predictive? Let not our meaning in all this be misunderstood. We are far from implying that every Anthropologist should devote himself to the study of these more recondite subjects. What we ask, is, that they should be recognised as legitimate departments of enquiry, because they constitute important provinces of human susceptibility and experience.

But we would go even farther than this, and include that weird realm of the occult and the spiritual, from which ordinary men of science shrink with unutterable abhorrence. What, for example, can we think of a treatise on Man professing to be, in any measure, exhaustive, which, nevertheless, ignores presentiments, second sight, and the visions of seerdom? Why, these things underlie some of the greatest movements which history narrates. What, for instance, can we say of an Anthropology which utterly fails to account for the appearance and career of such men as Gautama, Jesus, or Mohammed? Why, such beings furnished most of the motor forces that have impelled humanity upwards and onwards to its present position. Their successive advents have changed the face of the world and altered the currents of universal history.

They founded religions and inaugurated eras. Without them humanity would have lacked its most powerful impulses to advancement, and its most efficient aids to progression. They are the pinnacles of the race; the archtypes of succeeding ages. They were the providentially appointed seals to whom million-fold disciples were but as molten wax for the reception of an impression. We may, if we so please, term them exceptional, but they were so in virtue of the greatness of their mission and the grandeur of their endowments. Let us distinctly understand that they were pre-eminently MEN, with all the highest attributes and qualities of true manhood in the fullest efflorescence. Their works testify to their power. They were the master-minds of time. To them we owe the faiths of the world, which, in so far as they were the product of individual inspiration welled up from the stilly depths of their vast souls, agonised again and again in many a Gethsemane, and crucified, oh, how often, on many a Calvary!

Now, we are fully aware that these things are altogether above and beyond our accepted Anthropology, but they are so, because, as a science of Man, it is not sufficiently expansive to embrace them. As we have said, it contemplates humanity on the lower and earthward side, while these exalted characters belong to its higher, and, we may almost say, heavenly one. Hence, among other things, our reason for attempting the present work, not with the hope of, in any measure, supplementing this deficiency, but rather to point it out and suggest the cessation of an exclusiveness so damaging to the cause of true humanitarian enquiry.

But it is time that we should return to the more scientific aspect of our subject, which in this chapter is Man, contemplated Anthropologically as a material denizen of the earth. We have said that his organisation allies him, through the *Quadrumania*, to the *Quadrupedal Mammalia*, while his mind, so vast in range and so exalted in sentiment, would rather seem to relate him to some higher and more spiritual order of being. It is here that we obtain an insight into the grounds, or shall we say causes, of that stupendous conflict whereof his consciousness is the battlefield. With a mind ever aspiring to the heavens, he has a body always dragging him to the earth. As Man, he is not yet fully born, even in his brain, much less in the inferior, and, if we may so express ourselves, dependent and subsidiary portions of his structure. Perhaps these remarks require some little explanation.

Whatever hypothesis we may hold as to the origin of past and existing classes, orders, genera, and species, it is certain they came into existence in succession, if not by a process of slow variation; so that whether we adopt the theory of evolution or the doctrine of creative fiats, we are brought practically to the same conclusion, namely, that the production of the existing constitution of things was a gradual work, that has occupied eras of which history can give no account, and to which all ordinary chronology is utterly inapplicable. And we also know that not only did the higher classes appear later than the lower, but that this law also regulated the evolution or creation of orders, genera, and species, and, we may say, even the sub-varieties of the latter. Thus, the controversy between the creationists and evolutionists is narrowed virtually to the admission or exclusion of a designer. Now, we suppose it need scarcely be said that we not only admit the existence of the Great Architect, but that we regard the totality of material being as but the reflection of his thought, the ultimatum, through time and space, of his archetypal or divine ideas. After such an admission, the process of creation, whether by fiats or evolution, that is, by arbitrary enactment, and the exercise of a *quasi* miraculous power, or by the slow operation of forces acting ever in obedience to the laws of nature,—is equally a divine work, the only difference being, not as to the First Cause, but simply the *manner* in which he has chosen to ultimate himself on the sensuous plane of physical perception. We shall therefore generally speak in terms appropriate to the hypothesis of evolution, not as necessarily implying our adhesion to its truth (for although steadily progressing in the estimation of men of science, its universal acceptance and establishment must be a work of time, demanding profounder research and closer reasoning than have yet been bestowed upon it,) but simply because such terms are more convenient, and we may say expressive, than any others practically available in the composition of a treatise like the present.

We have said that Man is not yet fully born. We mean that he has not yet even assumed the mental, much less the physical, attributes and prerogatives of a true humanity. Man, as such, should be rational, intuitive, and creative. But it is only the favoured and exceptional few who are even rational, in the sense of ascending with ease from facts to principles; while it is only men of genius who are creative, and the

inspired who are intuitive. The multitude, whether of rich or poor, barbarous or civilised, who willingly take their stamp and impress from these natural leaders, are almost wholly devoid of these higher attributes, which they possess only in a germinal form, and certainly not adequately developed for effective functional manifestation. Again, Man should be moral—that is, he should subordinate his passions to his principles, and, we may add, even regulate his affections by his judgment. But in the great majority of cases does he do this more than haltingly and imperfectly, as if in the attempted accomplishment of something to which his nature seems as yet almost incompetent. And what, we may add, are all our educational and religious institutions, with their complex and costly machinery, but aids to the culture and invigoration of these higher provinces of our nature, that obviously demand all the help we can provide for their growth and development. And what, indeed, do the magnitude and importance of these institutions, more especially those devoted to religious purposes, imply, but the deep consciousness of society—that is, of collective Man, when he has attained to anything approaching culture and civilisation, that the moral and intellectual elements of his being cannot be safely left to their own spontaneous activity, but need drilling and evocation by all the forces which experience has shown to be the most conducive to their invigoration.

And why is a being, thus obviously formed on so grand an idea, nevertheless, in immeasurably the larger moiety of his individualities, so miserably imperfect? and, we reply, because, in the sequences of organic evolution, he yet falls so far short of the fulfilment of that idea. This translated into other language means that his corporeal structure, including even his brain, although this is by far the most advanced portion of his organisation, still partakes too largely of the animal and not adequately of the human type. And here we are thrown back on Phrenology—that is, a system of cerebral physiology, which admits and, in a measure, explains not only the specialisation of the brain, but also the detailed functions of its several parts. It is not to be expected that we should here go into the demonstration of this science, it must be sufficient that we employ its vast resources for our present purpose. In combination with it we shall also use whatever Anthropological knowledge is in our possession, as we have to speak not merely of Man in the abstract, but also

of the actual humanity of the globe, as it is distributed under the manifold racial varieties into which it has been developed.

#### THE SAVAGE.

We find, contemplating Man as he actually exists, that all savage races fall typically below the rational standard of a true humanity, that is, they live, intellectually speaking, almost wholly on the plane of perception, and scarcely at all on that of thought. They are largely the creatures of fact and of casual incident, scarcely ever rising to the sublime altitude of law and principle. Hence, they are the slaves, not the masters of Nature, and, correspondentially, are fed rather by her spontaneous bounty than their own productive labour, directed by the forethought which adapts means to ends, and pre-calculates results prior to their advent. Hence, also, they accumulate but few resources, and live, in a sense, from hand to mouth, this pitiable physical condition again, on that doctrine of correspondences which is the only true foundation of symbolism, finding its exact parallel in their mental state, where they have accumulated but a slender stock of collective or common knowledge, that of the entire community, whether in history, law, religion, science, art, or poetry, being generally stored up in the memory of every averagely endowed elder of the tribe. In truth, their perceptive or knowing faculties, though often prominent, are generally irregular and unequal in development, so that, although endowed with keen observation, it is impossible that their knowledge should be either accurate or extensive. But the radical defect of their anterior brain is, as with the brutes, in the upper forehead. They are wanting in the power of thought. They cannot concatenate ideas, the whole mind being largely at the infantile, or, at most, childish stage of unreasoning impulse. So their imagination is far too feeble to present them with ideals of transcendent excellence, although, being human, if germinal, they have conceptions of beauty transcending their experience, and hence often make feeble and, as we perhaps unwisely think, abortive attempts at adornment, whether in their persons, dress, dwellings, or arms. But of true art they have no conception, any more than of a profound philosophy or an exalted religion. Now what is all this but saying, by detailed instances, that they fall short of the standard of a true

humanity, which should, as we have already said, be rational and creative.

And here we begin to obtain some insight into the nature and source of that intellectual incompetency to which we have previously alluded, as characterising the great masses even of civilised communities. They are the remnants of barbarism, and even of savageism, not yet organically developed into more than educational aptitude for the reception of those elements of thought and knowledge, to which the higher traditional culture of the race, maintained and urged onwards by its more gifted minds, has yet given birth. This culture they could never have originated, and into its profounder arcana they can never be initiated. The utmost of which they are capable is to participate in some of its results, and share materially in some of its more practical advantages.

And now we may perhaps understand the mission of what may not be inappropriately termed the prophets of intellect, that is, the master-minds of science, literature, art, and legislation, if indeed the latter ought not, strictly speaking, to come under the head of morals. These gifted beings are the providentially appointed recipients of new ideas, which they transmit, through their more immediate disciples and remoter followers, to posterity. They originate the germs which after ages culture to perfection. They are the mountain-tops of thought, on which the rising sun casts first the roseate tints and then the golden beams of his advancing splendour, that only wants adequate time and favouring circumstances to equally flood the lower valleys with the golden effulgence of his radiant royalty. Now, one speciality of the higher races is, not only that they produce these master-minds more frequently and, we have reason to believe, of higher quality than the lower types, but that they also possess the power of retaining, transmitting, and even expanding their tuitions, in accordance with the larger requirements of after ages and the greater receptivity of later generations. A man like Plato or Aristotle, Bacon or Shakespeare, implies not only a high type, that is, a superior race, organically speaking, for his physical production, but he also demands a certain amount of previous culture among his people, for the due retention and perpetuation of his communications. Such beings would have been lost in Nigritia or Tartary, to say nothing of Australia or the South Sea Islands. But the harmonic laws, though we may not have mastered this section of them, doubtless provide

that where there is a sun there shall be fitting planets for his supervision. Let no man, then, withhold his light, lest his effulgence be wasted. The God who has given him eloquence will assuredly provide an audience, now or hereafter, and in the destinies of a world the centuries count but as hours on the dial-plate of astronomic time.

We have said that all savage races fall typically below the rational standard of a true humanity. Let us now contemplate them morally. The ruling principle of the true savage is love of self. Even wife and children live largely on the outside of his inner nature. They are not a part of himself; and although he may regard them with a certain measure of impulsive and almost instinctive affection, he is ever ready to sacrifice them to his more violent passions. He lives predominantly for the gratification of his senses, and whatever will most conduce to this, whether persons or things, he values accordingly. Now, it need scarcely be said that, in so far as he does this, he approximates to the standard of the brute. As one result of the inordinate strength of his self-hood, he has but a very inadequate sense of justice, his perception of the *meum* being vastly stronger than of the *tuum*. He cannot be always trusted to decide between himself and another, nor, for that matter, between the claims of his own tribe and those of an alien people. Alas! are we really speaking here only of the savage! His conceptions of the rights of property, perhaps because he has so little of it, are apt to be vague and shadowy. Hence he is given to stealthy appropriation, more especially from strangers, regarding not only all waifs, but all surreptitiously removable articles, as lawful prizes in his high court of justiciary. His real forethought seldom extends beyond many to-morrows. His pre-calculations are easily accomplished. Improvidence seems to be one of his ineradicable vices. His chief care seems to be as to what he shall eat, his only anxiety that there should be a sufficiency of food, and even as regards this he is often thoughtless and extravagant. Again, shall we say that these are attributes attaching only to savage life? But let us remember that, although not yet extinct as a type in civilised communities, individuals thus characterised are a remnant of the savage age, in which they are still, if we may so express ourselves, organically rooted.

But what shall we say to the religion of the savage? Of course the theologian will reply, a superstition. And in a

sense, perhaps, he is right; but then, unfortunately, this epithet is almost equally applicable to other forms of faith and practice than those of the mere savage. It is seldom that one man's or nation's God pleases another, and it is no wonder, therefore, that the savage, whose Deity, whether embodied, or rather emblemed, in a stone, a tree, or a serpent, can by supposition work a miracle any day, despises ours, whose functions in this respect have, according to all orthodox accounts, very nearly ceased for eighteen hundred years. It is here that we touch on a great distinction, to which, perchance, we shall have again to allude in the course of the present work, namely, that the God of the savage is vital and efficient, an ever-present and all-sufficing power, even if occasionally malignant; while the traditional Deity of the civilised masses of Western Europe is indistinct and shadowy, remote and inoperative. Nor does this distinction end here, for it also pervades their ideas of the spiritual sphere generally, which is much nearer and more real to the barbarian than to the man of modern civilisation.

We have said that the savage is prehistoric Man and yet our contemporary. He is so in his food, equipments, and, we may say, organisation, why not then in his religion? Now, this religion, as we have said, is vital, but with the exception of that of the North American Indians, it is low. We except the Indians, because their language, institutions, and, above all, their religion, more especially in its higher phases, indicate that they are allied to, if not descended from, a more cultured people. And hence, we may observe in passing, some rather erroneous ideas about savages are very prevalent among many of our American friends, in consequence of their familiarity with this comparatively exalted type of primitive man. But to return to our subject. The radical speciality of the faith of the savage is, that it is a religion of fear and not of love, arising from the fact that, as more or less a reflection of his own nature, it is the offspring of his passions rather than of his moral sentiments and intellectual faculties. Hence, his God is often cruel, vindictive, and impulsive, and so requiring to be pacified and interceded with, not merely by prayer and praise, but also by manifold material offerings, and not seldom by the blood of victims, some of whom are occasionally human.

And here we are brought to the earnest consideration of a great psychological problem, namely, that every man's God is,

in a measure, a reflection of himself, that is, of his organisation and his culture. In other words, his God is that portion of the divine which can be reflected from his own soul-mirror; just as his universe is that portion of the totality of being of which he is cognisant from observation and experience, and in civilised countries from tuition, and of which alone, therefore, he can form a clear conception. All else lies on the outside of him, in the faintly adumbrated realm of the vague and the unknown, and therefore, to him, the practically non-existent;—a consideration that should make us all exceedingly humble in our theological pretensions, knowing that as we fall so far short of an adequate conception of the material universe, which is but a dim reflection of His glory, we cannot fail, however helped by holy prophets in their rapt hour of ecstatic illumination and beatific vision, to fall equally short of the sublime reality in our endeavours to conceive of the infinite Cause of all existence.

Travellers tell us of tribes who have no idea of religion—but can we trust to this representation? We, of course, do not mean that these gentlemen have intentionally deceived us, but knowing how they have misapprehended or ignored the mesmeric practice, magical ritual, astrological knowledge, and other branches of the occult in nations not only emerging from the savage, but who have attained to, at least, the barbarian stage of existence, we feel that their portraiture of the religion, or, if the reader so pleases, irreligion of primitive man, is commonly untrustworthy. They do not bring with them an eye that has the power to see these things. Their more effective training has been so purely material, and their religious tuition so narrow and exclusive, that they cannot apprehend and realise aught in the way of fact beyond the boundaries of acknowledged science, nor accept any form of belief as a virtual religion, unless it comports in some measure with their own. When we join this inability to observe with a corresponding, or, at least, proportionate incapacity to understand not merely the direct but the *figurative* meaning of the language of their rude interlocutors, we can surely avoid the conclusion that our informants were scarcely in a position to do full justice to the subject of their investigation.

This subject of relationship to a spiritual sphere goes down, indeed, to much greater depths than is usually supposed. According to our orthodox creed, the brutes have nothing whatever to do with it. We unhesitatingly and authoritatively

draw a clear line of demarcation between them and ourselves, confidently affirming on "the testimony of the written word," as we say, that they are mortal and we are immortal. But it is very doubtful whether so grave a matter can be finally settled in this summary way. The profounder ancients, more especially the Egyptians and Hindoos, rather inclined to an opposite belief. And in this they were supported by what little we know of the psychology of animals. If there be any truth whatever, objective or subjective, in the manifold narratives of ghosts and apparitions which have descended to us from previous generations, or in the statement of similar experiences, as occurring to our contemporaries, it is quite certain that domesticated animals, such as horses and dogs, are sensitive to the presence of spiritual influences, whatever these may be. Nay it would even appear that in many instances they have proved more sensitive than their master, being conscious of and afraid of the "Ghost" prior to his perception of its proximity. Now, without at present going into the yet profounder question as to whether such consciousness of and perceptive interspheration with the spiritual elements of existence, on the part of brutes, be indicative and almost demonstrative of their comparatively intimate relation to it through the constitution of their own being, it at least settles the vexed question of savage belief, even at the lowest stage of pre-historic development, in a spiritual environment. If animals with their very inferior organisation, more especially that of the nervous system, and above all their lower cerebral structure, can become recipient of impressions from an ordinarily supersensuous sphere, then, most assuredly man, at any stage of his gradation, cannot have been wholly excluded from such experiences.

But the faith of the savage, as we have said, is pre-eminently a religion of fear. Nature is not his loving mother, but his passionate and relentless nurse, who punishes him in her anger, and destroys him in her fury. This is the psychological reflection of his rude type of brain, where the basilar organs of combativeness, destructiveness, and secretiveness dominate the coronal elements of conscientiousness, veneration, and benevolence, this diabolic inspiration, if we may so express ourselves, from powerful passions controlled only by weak sentiments, being intensified by the correspondingly low character of his intellectual faculties.

And here some very suggestive thoughts cannot fail to

occur to the reflective reader. Religions, more especially the great faiths of the higher races, are among the most archaic, if also the most venerable productions in the world. They have descended to us, by a long process of derivation and interaction, from the very earliest ages of human society. Like the material world, they have their successive strata, in which we may also observe, to carry out the analogy, some very wonderful fossils are occasionally found, as often to the consternation as to the delight of the moral palæontologist. Have we none of these in our own? We see them in Brahmanism and Buddhism. Are they altogether unknown in Judaism? Is tree and serpent worship, for example, that strange bequest of the non-Caucasian races, confined to the faiths of Eastern Asia? So, is a God whom we must fear, rather than love, limited wholly to the traditions of barbarians? Have we not people at home who, apparently, delight in the epithet of *God-fearing*, as the most descriptive epithet of their religious life? And can the idea of the especial efficiency of human sacrifice be regarded as altogether extinct among those who believe that the world was redeemed by the blood of the Saviour, offered up as a propitiatory sacrifice on the terrible altar of Calvary? In contemplating such venerable characteristics, still surviving in existent faiths, we can scarcely avoid the conclusion, that the religious life of mankind has been a process of continuous development, in which one stage of progress has succeeded another by a process of natural and, we may almost say, inevitable evolution. And here, at this almost initial stage of our inquiry, the reader cannot fail to have observed how many of these beautifully illustrative analogies have occurred, presenting themselves almost unsought, during the ordinary exposition of our subject. Nor is this a matter of accident, or in any way exceptional. Nature is full of such profound correspondences between the material and the spiritual. How indeed should it be otherwise, for is not the one sphere a reflection of the other?

And now, following out and in a sense completing our survey of the moral nature of the savage, we need scarcely say that, in the great majority of instances, benevolence is practically unknown to him. Whatever share of the milk of human kindness may attach to his nature is shown through his domestic affections, to his family, and through the adhesive social elements, to his tribe. His sympathies, if, as we have already remarked, he can be said to have any, are narrow,

without being strong. They are limited in their range, yet not intensified in their force. They are contracted, yet not thereby invigorated. This is only saying, that the love element in him is inherently and essentially weak, and so far from embracing humanity, and, we may say, the universe, is commonly confined to himself and his more immediate surroundings. Now this, translated into other language, means that he has much of the brutal and little of the divine element in his mental constitution. He is not GOD-LIKE—and, therefore, he is not fully humanised. For let us never lose sight of the root-idea, that man, in his higher aspects and through his sublimer endowments, is the ordained representative of God on earth, and exactly in so far as he falls short of this exalted standard, does he lapse from the completeness of that archetypal idea on which he is, even now, in the process of formation.

And all these moral defects, of which we have been speaking, are reflected in the inferior cranial contour of the savage, where, in addition to the narrow and retreating forehead, we generally find a depressed and contracted coronal region, more especially in that anterior portion where phrenologists place the seat of those cardinal Christian virtues—Faith, Hope, and Charity. But here we must remember that the savage labours under the double disadvantage of a very rude and imperfect moral as well as intellectual culture, superadded to an inferior type of organisation. It is from this stand-point that we begin to understand what civilisation has done, and is doing, for humanity, by the gradual accumulation of those tuitional resources, which have been bequeathed to us by the labours and sufferings, the toil-won thought and God-given inspiration of the great, and good, and wise, and holy of other generations. We have spoken of the prophets of intellect, but what shall we say of the prophets of faith, the mighty master-builders of the centuries, to whom we owe those sublime temples where humanity has gone up to worship while the millenniums grew old and died? Now, from all this, let us remember that the savage is cut off, like the pre-historic man, of whom, as we have said, he is, in a sense, the present reproduction. For him the past might as well never have existed. He does not drink of its deep wells of knowledge. He does not slake his thirst at its fountains of inspiration. He does not partake of its experience. He does not share in its wisdom. Its faiths have come and gone, its empires have risen and fallen, and

from the stupendous acts and tragic scenes of this dread world drama, he is wholly excluded—as much so as the flint-hewers of the drift and the slayers of the mastodon.

And here we are brought once more in view of a grave and startling fact, to which we have already alluded, namely, the existence of a numerically powerful and virtually demi-savage class, as the underlying popular element of our showy and imperfect civilisation. What do our labouring masses know of these things more than the savage? Not much; but they have one advantage of which he is devoid, they can come in contact with those who do know them. And they live under institutions, and amidst manners, customs, and handicrafts, which are our inheritance from a hundred generations. It is here that we see what civilisation does, even for the meanest of its children; how much more then for the highest and most favoured, who enter as wealthy heirs upon the accumulated treasures of countless centuries!

These matters, however, go down to greater depths than we have yet plumbed. The material is but the effect of the spiritual; the body is but the outcome of the mind. After this fashion, with this low type of head and this rude cast of countenance, where no one feature seems properly chiselled, and with the remainder of his organisation proportionately unfinished and inchoate, has his soul managed to vesture itself for the stage of time. This is its corporeal presentment, the physical analogue of its spiritual condition. And thus read, how much of interior incompleteness is indicated by the cranial type and facial expression of by far the larger moiety of the population, even of the most civilised communities among the most highly organised races.

And now, having contemplated the savage from these manifold standpoints, that is, in his physical organisation, his mental constitution, his social condition, his religious belief, and his intellectual culture, let us ask what he is, and what, in all probability, will be his destiny. And we reply, that he is an outstanding remnant of the primitive or root-man of the race. If we are justified in regarding even the highest Caucasian as only an initial type of true humanity, we are assuredly authorised to affirm that the poor savage, whether of the Negroid or Turanian type, is only at the germinal stage, whether of moral, physical, or intellectual development. He is Man at the faint dawn of his true existence. He is the earliest and most archaic link yet remaining of the

real bimana. And it is a remarkable fact that he should have survived, almost in his integrity, as Man at the stone age, to our own time. Judging by the remains of the bone caves and the drift, there must have been a time when humanity was yet ruder in organisation, but, if so, only by a few shades. Any decision on this point as yet, however, would be altogether premature. We must examine the bone caves of Africa and Central Asia, as well as those of Europe and America, to say nothing of their geological strata, ere we can come to any definite conclusion as to the organic type of the earliest men, based not on an evolutionary or any other hypothesis, but on demonstrable fact.

Granting, then, that the savage presents us with the nearest existent approach to primitive Man, who, in so far as he differed from him, must have done so by inferiority of grade, both mental and physical, and it is obvious that we have arrived at a conclusion whence many important corollaries may be deduced. In the first place, all myths of a primal condition of Paradisaical perfection must be relegated to the realm of poetry, or at least of symbolic teaching, where the truth to be communicated, while far vaster and sublimer, more enduring and profound, is nevertheless very different from the seeming fact in which it is conveyed. Or, should this conclusion be regarded as too sweeping, then such Paradisaical traditions, whatever they may signify, must be confined to the Caucasian, or, as some prefer to term it, Adamic race, and when applied to them, will probably be found to mean their deterioration by admixture, whether through conquest or pacific migration, with the inferior elements of humanity. Now, on either hypothesis, the story of the Fall, whether that of the individual or rather representative Adam of the Semitic records, or the gradual descent from a golden to a silver, and from a silver to a bronze, and from a bronze to an iron age, which seems to be the Aryan form of the same truth, will have to be greatly modified, and, we may say, translated into terms implying ethnic facts.

But if the savage be an outstanding remnant of primitive Man, what is his destiny? And we reply, *Extinction*. This, we admit, is a terrible sentence to pronounce upon the possessors of at least a third of the habitable globe. But the simple consideration for us here is, will it hold? Is it in accordance with the laws and processes of Nature that, as an inferior type of organic and mental being, they should be

eventually superseded by a superior? And all experience justifies us in responding in the affirmative. And here let us remember that there are virtually two kinds of extinction in relation to races, the one absolute and the other only relative, the first by supercession and the other by modification, of which we have the duplex example at present in America, where the hunting Indian of the North is being exterminated, while the comparatively civilised Mexican and Peruvian are being modified by a baptism of European blood. The extinction then to which we refer, is that of the merely hunting savage at the stone age, who is neither shepherd nor agriculturist, but an untutored child of Nature, living largely, like the brutes, on her spontaneous bounty.

Now such an event as this, which is being daily transacted before our eyes, and which yet, on such a scale, never before had its parallel in the history of the world, cannot stand alone. It must be part of a larger whole. It must have had preparatory antecedents, and it will have far-reaching consequences. It implies a different balance, in the forces of humanity, to anything which has antecedently prevailed. It pre-supposes a degree of power and supremacy on the part of the civilised races, such as they have never previously possessed or at least exercised, and it equally supposes a proportionate and relatively increasing weakness on the part of the ruder types, such as they have never before manifested. But this is a mere statement of the fact, not an exposition of its producing cause. And here, in using the terms savage and civilised, let it be distinctly understood, that we signify not merely social diversity but organic difference, the one, when so strongly marked, generally coinciding with the other.

And thus we are brought to the necessity of making a few remarks on what may be called popular historic fallacies. We have said that the savage is of a different type from the Man of civilisation. This is emphatically true when the latter is of the Caucasian race. And of the great Turanian nations of the farther East, we purpose speaking at a more advanced stage of the present work. Now, it is a remarkable and noteworthy fact that, although we have swept the coasts and largely penetrated into the interior of all the great continents of the world, we have nowhere met with a people of Caucasian type in a state of absolute savageism. They may be, and often are vigorous barbarians, as in the case of the Moors and Bedowens, but they never sink normally and permanently

below this stage of social organisation and intellectual culture. And yet we often glibly repeat after Roman authors, who only knew of anthropophagi and troglodytes by remote tradition, that our ancestors, the high caste Celts of Britain, were "painted savages." And yet we know that they had war-chariots and cornfields, ships in the harbours, and flocks and herds in the interior of the country. Now these things imply much else. They cannot exist alone. They are parts of a social system whose several functions, with the appropriate arrangements for their efficient discharge, must of necessity harmonise the one with the other. The war-chariot, for instance, implies the wheelwright and the smith, but with these must co-exist all the simpler mechanical handicraftsmen known to the earlier stages of civilisation. The harness of the Britons indeed was so famous for its strength, durability, and beauty, that we are told they carried on an extensive trade in its export. So cornfields imply not only the plough, but a general knowledge of agriculture, with all the prudence, forethought, and pre-calculation which its practice of necessity involves. But they indicate much more. They demonstrate the existence of clear and well-ascertained, and generally respected, rights of property, which could not exist without an established and recognised code of laws, with duly appointed officers, from the judge downwards, for their effective administration. Indeed, we know there were such officers, the sacred order of the Druids, discharging not only sacerdotal but also judicial and medical functions, thus constituting not merely the clergy but also the clerisy of the land, for in addition to these more formal and onerous duties they were also bards and historians.

Now, to speak of a people thus equipped with all the simpler and many of the higher elements of pre-classic civilisation as savages, is simply absurd, and shows how confused are the ideas we have entertained, and how loose is the phraseology to which we have been accustomed on this important subject. It indicates, in the first place, our ignorance of the fact, that social systems are normally developed and harmonically constituted moral organisms, whose several parts are co-operative and interdependent, like the various members of a vegetable or animal structure. While, as regards our terminology, it implies that we use the word savage in a much wider sense than that to which it should be restricted, if well-understood and carefully applied epithets are to reflect the

accuracy of our Anthropological ideas. As regards the more immediate instance just cited for example, we are enabled, after a little study of the subject, to range the ancient Britons definitively in the scale of civilisation, and assign them a recognised place in the great scheme of human culture. They were obviously an outstanding part of that antique phase of civilisation which once prevailed in Egypt, India, and Persia, and of which, in one of its simpler phases, we have such a vivid portraiture in the Iliad, where the war-chariot constituted the principal feature on the battlefield, and the chief was rather a combatant knight than a strategic general. Speaking of this stage of culture from another standpoint, and we may say that, at its maximum, it belonged to the close of the bronze and the dawn of the iron age of archæology, although it long survived this in Britain, owing probably to the geographical, and with this the corresponding moral isolation of this remote island, virtually the "Ultima Thule" of pre-historic civilisation.

But to return to the more immediate subject-matter of our remarks, the rapidly advancing extinction of savage types. This fact, as we have said, cannot stand alone. It implies a period of crisis in the physical condition, and with this a revolution in the moral and intellectual forms of humanity. Such an extensive, and we may almost say mundane destruction of the savage, implies a proportionate expansion of the civilised, if not also of the barbarous races. The men of nerve, and more especially of brain, are gaining ground on the men of mere bone and muscle, and should the process continue, and its results in the way of colonial extension be rendered permanent, it would involve an enlargement of the Caucasian area at the expense of those occupied by the ruder Turanian and Negroid types respectively, to one or other of which nearly all savage tribes are either intimately or remotely related. And thus we are brought to the subject of ethnic area in its bearing on the habitat and destiny of the various types of humanity.

#### ETHNIC AREA.

We have already spoken of the Flora and Fauna of the earth, that is, of its Vegetable and Animal kingdoms, as telluric organs through which some very important vital functions of the globe, as a living planetary organism still at the infantile,

if not embryonic, stage of development, are doubtless discharged. Now, if this be true, the principle must be susceptible of yet wider application. It must embrace Man, who, in virtue of his higher and more specialised organisation, cannot fail to prove instrumental in the effectuation of yet higher results. As the nervous, and more especially the cerebral type of the world, he must represent, of course not directly, but correspondentially, the earlier stages of its cerebral development and its mental power. Stated succinctly, we may say the vegetable realm represents the vascular, the animal the muscular, and the hominal the nervous system of the earth, all resting on the osseous—that is, in this planetary series, the mineral kingdom. But this law of correspondential representation does not cease here. It is repeated on the human plane, where the Negroid types represent the vascular, the Turanian the muscular, and the Caucasian the nervous portion of the collective organisation of humanity. Let not the reader be alarmed at the presentation of these rather large, and as perhaps he may deem them, loose ideas. Nature, though vast in her resources, is simple in her processes. She wastes nothing, not even thought. Her plans are unitary in principle, though co-extensive with the universe in range and all-embracing in their result. She fashions a world as she moulds a dew-drop, taking no account of diversity of size, which to her practically illimitable immensity is of slight significance. Star-dust and sand-dust are alike to her, as they are borne upon the breath of her nostrils, in which, as the divine aura, float the mystic germs of multiform and ever-evolving life, now shining forth in the almost unendurable splendour of central suns, and anon animating the *éphemeridæ* that dance for an earthday in their golden beams.

Now, it may be observed in the grand telluric sequences to which we have been alluding, that the animal rests upon the vegetable kingdom, and the human upon both. It is the same in the higher cycle of humanity itself, where the Negroid types are altogether of the earth, earthy, never rising by any chance in the course of countless centuries, to the beauty of art or the sublimity of poetry, clinging, like the vegetable realm they so aptly represent, to the bosom of their terrestrial mother. The Turanians, it must be admitted, are somewhat superior to this. They have art, literature, and religion, but not of an exalted type. Like their heads and faces, these great realms of thought are with them infantile, if not embry-

onic. They lack the grandeur and sublimity such conceptions assume in the hands of the higher Caucasians. The truth is, that as a race they are still at the childish stage of tuitional culture and mental development. They learn everything from authority and do everything by precedent. They have no true individuality, and consequently no firm self-reliance for the practical or clear inspirational light for the ideal. But large bodies of them have been tamed and civilised, or, as we say of the animals, domesticated, and so rendered useful and productive in the mundane economy of humanity. We have yet to see the ulterior significance of this momentous fact. It has prospective bearings of which neither sages nor statesmen have yet dreamed. The five hundred millions of China, Japan, Siam, and Burmah, are a storehouse of industrial force, that when it breaks loose must flood and derange the labour markets of the world. The embankments of prejudice and tyranny on the one hand, and of geographical isolation on the other, are now giving way before the rising tide of universal progress, and already the small, premonitory currents of Coolie labour give us a foretaste of what we may expect in the way of Turanian emigration.

There appears to be a radical difference in relation to labour between the Negro and the Turanian. The former works by coercion from without, the latter by volition from within. Hence, the first has been always virtually, and in most cases formally, a slave; while the latter is, both at home and abroad, in a measure, a freeman. In truth, the Negro does not work as a man, but as an animal—that is, by the lash, and, correspondentially, has been fed and housed like a brute by his master, to whom he has, moreover, in almost all ages and countries, belonged as a chattel. These are terrible words, but we must look facts in the face, more especially the recurrent facts of five thousand years' experience. Now, it is the inevitable cessation of this condition of things, which brings the Turanian to the front of the labour market. The universal conscience of enlightened man will no longer permit of slavery. As an institution it is everywhere doomed, except, perhaps, in Africa itself. Christendom, now the virtual mistress of the world, rising to the true level of her beneficent and exalted faith, has proclaimed its cessation, and who shall resist her edict? But in abolishing slavery we have also abolished the Negro as a paying, exportable commodity. As a freeman, it is to be feared he is not worth the cost of his voyage. At

least this seems to be the experience of practical men, on whom, and not on theoretical philanthropists, must devolve the ultimate solution of this great problem.

But far above and resting on these inferior types of humanity comes the Caucasian, highest in structure but latest in advent, the artist and poet, the sage and prophet of his race. It is doubtful whether we yet know how to estimate him aright. Our standards are too material, too grossly physical, and however applicable to the inferior races, are scarcely suitable to our own, so that we are prone to regard him through his corporeal rather than his mental endowments; and however admirable the former, it is in the latter that his especial excellence is more unmistakably manifested. In him the mind of the planet culminates. He is the greatest birth of time. He has founded the noblest religions and built up the greatest empires upon record. To him we owe the successive civilisations which make history the unfolding of a divine drama of stupendous interest and transcendent excellence. He has furnished us with the masterpieces of literature and the models of art. Our profoundest meditations in philosophy are of his composition, and our highest attainments in science are due to his investigations. He is, and from the dawn of all authentic record has been, the indubitable master of the world. His supremacy was never more unchallenged than at present. The Turanians are merely awaiting his pleasure to effect their conquest. The Negroes are simply stagnant till he shall give them an impulse towards progression. The ends of the earth are in his possession. Its fertile plains are asking for his tillage, and its mountains are ready to yield up their long-buried treasures at the magic spell of his mining and metallurgy. He has compassed the globe; its farthest shores receive his emigrants, and its remotest ports afford shelter to his shipping. In contemplating the possible destiny of such a race, the powers of thought wax faint in the process of pre-calculation, while even imagination finds its pinions too short for effectually spanning the vast expanses of futurity that open to its prevision.

Now, these races, so diverse in structure, so unequal in endowment, and so contrasted in destiny, have their respective areas, on which they have been located apparently from pre-historic ages; and one of the greatest problems which Anthropology has to settle is, whether these areas which they at present occupy are their native and, in a sense, inalienable

habitat, or merely a territory where they have settled by the force of circumstances. This, we may remark here, is not a matter merely for the discussion and amusement of Anthropologists, but a question of vital interest to the inhabitant of every European colony; for on its decision, if in accordance with the laws of Nature, must depend the permanence of those vast extensions of the Aryan race, more especially in the New World, which have been effected during the last three centuries. It involves even more than this, for on it must depend the possible realisation of that future at which we have succinctly glanced in a preceding paragraph.

Now, problems demanding such multiform data for their solution, to say nothing of their leading to such stupendous issues, are not subjects on which a shallow dogmatism should venture with its unprepared assertions; on the contrary, they demand the largest views, based on the most profound and searching investigation. We say this, not to induce a feeling of absolute incertitude on the part of the reader in any conclusions at which we may arrive, but rather to guard against the supposition that we wish to speak with authority, or in any way independently of the data we may state or the reasonings to which we shall have recourse. And here let it be distinctly understood that while this is a work, we hope not altogether unworthy the attention of the Scientific Anthropologist, it is more especially intended for the general reader, presumably ignorant of many of the details of the Science of Man, and for whom therefore explanations are often introduced where allusions would suffice for a prepared audience.

#### ETHNIC AREAS.

In any attempt to demonstrate the existence and determine the limits of ethnic areas, we must remember that Man is not the sole inhabitant of the earth. Contemplated indeed from the standpoint of Nature, he is seen to be only the culminating point of its Fauna, and if so, then he must, in some measure, obey the laws which govern their geographical distribution. But neither are the Fauna of the earth its sole organic, though its only sentient types, for beneath them, as already remarked, are the various classes and orders of the vegetable kingdom, on whose distribution, that of the superior realm also in part depends. Now, Botanists and Zoologists are fully aware that there are areas for plants and animals,

why not then, for the various types of Men? To what should be the profound and independent consideration of this question, it is to be feared that we bring many preconceived ideas respecting both the origin and the unity of humanity. We want to regard Man apart from Nature, as if he stood aloof from her realms and were not amenable to her laws. Now, this is, to say the least of it, a very unwise procedure, far more worthy of theologians than of men of science. It is wholly anti-Baconian and non-inductive in its spirit, and were such rules of enquiry to prevail in any other department of investigation they could not fail to eventuate in our entertainment of the most stupendous fallacies. They are not the path by which we can expect to arrive at truth in relation to Man, who, as a part of Nature, must, as we have said, be obedient to her laws and amenable to her forces.

Such is the conclusion to which we should be led by deductive, and what may almost be called a *priori* reasoning on the subject, and we find that the fact is in accord with it. Mankind are distributed over the earth in ethnic groups, subdivided into varieties of various shades of distinction. Such are the Turanians, with their peculiar features, as Mongols and Tartars, the former being more strongly emphasised with especial racial characteristics than the latter. Such, also, are the Negroes, with their subdivision into African and Oceanic varieties. And such, we may add, are the Caucasians, with their separation into Aryans and Semites, the former being the intellectual and the latter the moral branch of this great race, in whose duplex form, humanity culminates, and at length attains to something approaching its ideal standard as a moral and intellectual type of being. Now the question for consideration here is, are these races the natural product of the areas they respectively occupy, like the plants and animals by which they are surrounded? This, of course, involves the important subject of telluric influence, including latitude, longitude, geologic formation, temperature, prevailing winds, hygrometric and other data, having either a remote or direct relation to hygienic conditions, together with the solar, lunar, and stellar influences specially operating on any particular part of the earth's surface as a planetary organism. Now, this mere statement of the problem may suffice to show how vast is its range and how manifold are the data required for its solution, and should, therefore, ensure our modesty in

the utterance of an opinion as to the merits of any hypothesis which may be advanced on the subject.

If we take the lowest of these races, that is the Negroes, situated in their great and prevailing group, south of the Sahara, and under their insular form, from the Andaman Isles to New Guinea, or yet farther east, we shall find that they are for the most part, a tropical race, subject to great heat and considerable moisture, and as a result, compelled to inhale a great amount of carbon, for whose presence their system seems to have an especial toleration. Now what is this but saying that they belong to a pre-geologic era, when atmospheric and other conditions were less favourable than at present to the development of a high type of respiratory, and above all, a nervous form of mammalian life. They are then simply primitive Man, perpetuated under primæval conditions. Should this phraseology be objected to, we may say that the Negro is Man on the plane of Nature in a tropical area, that is, he represents a southern type of humanity, undisciplined by stringent law, unrefined by polite manners, and undeveloped by intellectual culture.

Ascending in our enquiry through successive grades in the scale of humanity, we arrive at the Turanians, who, conversely to the Negro, are the comparatively undeveloped men of the north and east. As an Arctic race they surround the North Pole both in the Old World and the New. But they are not confined to this area. On the contrary, they extend through China, Burmah, and India almost to the tropics. Their habitat seems at one time to have been far more extensive than at present, for it embraced the greater part of Europe, where their declining remains are still found as Lapps and Finns. But on an enlarged view of the racial divisions of mankind, we cannot limit them even to this vast area, as the Indian tribes of North and even South America, in so far as they are ethnically related to any of the populations of the Old World, unquestionably approximate nearest to the Turanians. So marked, indeed, is the resemblance in many instances, that several writers have speculated on the geologic possibility of the two continents having been once united, nor is this by any means improbable, though, as we shall see, it is not necessary to the solution of the likeness, which can be otherwise accounted for.

Returning, however, to the Turanians proper, we find that for the most part, they inhabit vast plains and fill up the

great extents of central and eastern Asia, where the land is continuous and but slightly broken into peninsulas and islands, presenting, in this respect, a striking contrast to Europe and western Asia, being a counterpart in the north to Africa on the south. This is only saying, in other words, that the surface of the earth itself in these regions, is comparatively rude and undeveloped in its geographical character and aspects, like the physical organisation and mental constitution of the people who inhabit it. Are the two conditions merely coincident, or are they related as cause and effect? Now, if we once admit the influence of area on plants and animals, we cannot, as already remarked, regard man as altogether exceptional in this respect, more especially while he remains so nearly a child of Nature, as are the ichthyophagi, hunters, and nomads, who obviously constitute the root form of Turanian existence. We may then define the Turanian as primitive Man, evolved under primæval conditions in the north. He belongs, probably, to at least one geologic age later than the Negro. His large and massive, though predominantly basilar brain, and powerful chest, indicate that he was developed under more favourable atmospheric, magnetic, and other conditions of the globe, conducive to a higher form of sentient and rational life than those prevalent at the incipience of Negro existence. And here it is interesting to remark, that as we have pre-historic Man, speaking socially and intellectually, still our contemporary, so have we pre-geologic man co-existing with us in the sense that types of humanity, formed under antecedent conditions of the globe, still remain numerically powerful and extensively diffused, though probably, even in their lowest extant grades, less specially emphasised than formerly.

And now, glancing for a moment at America, we can readily understand how, if the vast steppes of central Asia, with their atmospheric and other accessories, conduced to the formation of the Turanian, the vast prairies of North, and even the rich pampas of South America, could not be wholly inoperative in the same direction. Thus, then, without pre-supposing an actual migration from one continent to the other, this similarity in many telluric conditions, would be amply sufficient to account for the decided ethnic resemblance already alluded to, which we may thus perceive to be perfectly compatible with the hypothesis of a distinct ethnic type in the New World, evolved by its forces and specially adapted to its conditions.

Let it not be for a moment supposed that the foregoing remarks on the Negro and Turanian are barren speculations or scientific refinements of no practical value, for they involve religious, political, social, intellectual, and commercial consequences of stupendous importance. If even approximately true, they definitively fix the place of these widely diffused races, as being inherently and essentially lower than that of the Caucasian. In a sense, they place a limit to the possible range of their progression while still of pure blood. The last sentence introduces a new element into the ethnic problem, namely, the possible commingling of races, together with the nature and extent of their interaction, a problem now in the process of practical solution on the largest scale, and by the intermixture of elements apparently the most antagonistic and diverse. The full consideration of this subject, however, must be postponed to a later section of the present work, when we shall have adequately surveyed existing races as they are at present constituted.

West of the Turanians and north of the Negroid tribes, mostly in the temperate zone, and extending continuously from India to Britain along the coast lines and throughout the peninsulas and islands of western Asia, northern Africa, and Europe, we find that Caucasian type to which we have so often alluded, as the highest and best developed, the most nervous and sensitive, the most gifted and intellectual of all the forms of Man. Now, one of the first, because most patent yet most important facts in connection with this great race, that must strike every observer, is the geographical advantages of their habitat. They enjoy the finest climate in the world. They are neither burnt by tropical heat nor frozen by arctic cold. But these advantages of latitude are still further increased by that favourable distribution of land and water, in virtue of which, extremes of temperature are yet further diminished. Now, these advantages, with all their accompanying results, while perceptible in Asia culminate in Europe, and more especially on the south and west of this especially favoured continent, the seat, we may remark, of the Classic, Celtic, and Teutonic races, the leading divisions of humanity for the last two thousand years. Now, if we once admit the influence of area with its attendant telluric conditions, it is impossible to avoid the conclusion that a site so favourable to the evolution of a superior type of humanity has had its effect in the development of the Cau-

casian race, whose attributes, both mental and physical, imply that they appeared when and where their terrestrial surroundings were more refined and better balanced than in the case of either the Negro or the Turanian. They are the product of a later day in the world's history, and so, on the principle of gradual progression, may be regarded as its more advanced children.

#### THE CAUCASIAN.

The Caucasians, though embraced under one title, are scarcely an ethnic unity, having as already observed, two very distinctly characterised branches, known as the Aryans and the Semites, of whom, speaking phrenologically, the former are most developed anteriorly and the latter coronally, and as a corresponding result, the first have an intellectual and the second a moral mission in the great scheme of human progress. Now this being admitted, it becomes interesting to learn whether with this diversity of character and function, they have had a common origin, or whether their respective specialities originate in the differently constituted ethnic roots, that is primitive men, whence, through manifold modifications and with the lapse of much time, they have presumably descended. Now the first thing which strikes us in the attempted solution of this problem is the significant fact that the Aryans are massed mostly in the north-west of the Caucasian area, that is in Europe, while conversely the Semites are placed in the south, that is in Northern Africa, Arabia, Syria, and Mesopotamia. Is this accidental? we think not, and if we are correct in this, it may throw some light on their origin, more especially when combined with the organic speciality already alluded to, that the Aryans are most developed anteriorly and intellectually, and the Semites coronally and morally. And thus we are brought to a consideration of what the Caucasian race really consists, that is what forces in nature it embodies and what higher truth it symbolises, which really means of what principle in universal being it is the befitting exponent and illustration.

And here let us bear in mind that there are two distinct types of vegetable and animal forms, the wild and cultivated plant or flower, and the wild and domesticated animal, the modified, and as we think improved forms, being due to the intervention of man. Now the question is, may not he

himself be the almost unconscious subject of a similar process, which we term civilisation, meaning thereby the religious development, political organisation, social arrangements, intellectual culture, mechanical arts and commercial usages, embracing the material resources and transmitted aptitudes of any people, as derived either from their immediate ancestors, remoter generations, or even alien nations in far antecedent ages. Now it cannot fail to have been noticed, even by the most superficial observer, that when any portion of this stupendous inheritance, devolves in more than ordinary force and concentration upon any one individual, as in the case of a scholar, artist, man of science, or even a member of the learned professions, or a mastermind in manufactures or commerce, it tends to modify not merely his mind but his physical organisation. The brain becomes expanded or elevated as the case may be, to its fullest possible dimensions in certain directions, the features generally become more elevated and always more chiseled, while even the corporeal frame partakes of, as if sympathising with this alteration in cerebral structure and facial expression. And what is this but saying by details, that such an individual has become more effectually Caucasianised in structure, as a result of the more than usually persistent energy thrown into his mental manifestations, whether in the sphere of thought or action. Now there is we suppose no need of saying that in virtue of the law of hereditary transmission, the children of such people will generally be born with a superior organisation to those of persons less exercised and drawn forth, either by duty or study, by labour, emotion, reflection, responsibility, or effort in any direction, political or professional, commercial or mechanical.

We may thus see that the ordinary life of man under even the simplest conditions of civilisation, tends to evoke his humanity into more efficient manifestation, and to transmit it as an improved type to posterity. This humanising tendency is not indeed confined to the grade of advancement we term civilised, for even the poor savage has his contrivances and his forethought, his weapons, dress, ornaments, and dwelling, however imperfect, scanty, or inadequate, and in providing these his manhood is called forth and his bruteness proportionately repressed. This is effected by evoking not merely the perceptive faculties which he shares in common with his inferior correlates, the quadrupedal mammals, but also the higher reflective faculties and superior moral sentiments,

which, as appertaining to the upper brain, are especially human in their duties and relations. Now as these are rendered active, so do they, firstly and feebly in the individual, and secondly and more powerfully in his offspring, gradually mould the features into a less brutal and more thoroughly human type. And eventually this superior action of the brain manifests its formative effects throughout the remainder of the organisation, even to the extremities.

Now it may be readily understood that if this action of the plastic power of the nervous system, and more especially of its large cerebral and *quasi* solar centre, is manifested in the savage, with his comparatively dull intellectuality and low morality, it must operate with yet greater force on the barbarian. He, moreover, has that incipient division of labour, generally accompanied by social distinctions, often rendered more or less hereditary, whether by usage, law, or religious sanction, which not only permits and encourages, but necessitates the especial development of certain mental aptitudes in the various orders and classes of his more highly organised, and therefore more effectually specialised polity. Thus his chiefs become gubernatorial in capacity, whether as sovereigns, nobles, or military commanders. Such men, so placed, must exercise their firmness, self-reliance, prudence, judgment, insight, and powers of combination beyond what might suffice for the smaller sphere of duty and responsibility attaching to a private citizen. They bear the burthen of the state, and must either grow into a capacity for its endurance, or sink under its overwhelming pressure, simply yielding their place, in the latter case, to men of greater capability, who come to the front by the force of circumstances, operating socially, through the law of natural selection and the struggle for existence. So the superior members of his hierarchy must possess, by native endowment, fostered through judicious and careful education, an aptitude for the attainment of theological learning and the exercise of sacerdotal supremacy, implying, the mastery of a system of religious belief and the perception of refined doctrinal distinctions, together with the practical power of supervising and ordering a great ecclesiastical establishment, with its ministrant priests and their attendant laity. Now such attainments, however partial and imperfect as an approach to universal intellectual culture, yet imply an activity in perception, memory, and thought, together with such an amount of metaphysical depth and logical acumen as cannot

fail to train and invigorate the faculties, and so gradually prepare them for the reception of a more expansive system of belief and practice in after ages.

It is the same with the legal profession in all its ranks, whose familiarity with the principles of jurisprudence, however superficial and inadequate, according to our conceptions, nevertheless necessitates such a degree of discrimination on the part of the judge, and such an exercise of reasoning and persuasive eloquence on that of the bar, together with so much of vulpine astuteness on that of the lower practitioners, as to ensure a very respectable amount of intellectual vigour, if not of moral elevation in "the college of justice" generally, which, if in any measure transferable, cannot fail eventually to leaven the more materialised masses of that rude society whereof they are the recognised guardians and protectors from internal violence and oppression. So his physicians and engineers must have a smattering of science, and his artizans and handicraftsmen a degree of skill and a practical knowledge of mechanics, that cannot fail to have evoked their faculties in the process of acquisition, to say nothing of the lifelong activity of some of the superior powers of mind implied in the assiduous exercise of their social vocations, with the diversified ability they demand and the ever vigilant circumspection they necessitate.

Now it may be readily understood that in this way, a superior caste would be gradually evolved in a community otherwise distinguished not only by imperfect culture, but also by that rudeness of physical organisation which implies inadequate plastic power for the production of a high and relatively perfected type of humanity. And the fact agrees with the hypothesis, for in all countries the virtually ruling orders are superior in type to their subjects. This is seen in the Indian chiefs of America, and in those of the South Sea Islands, as well as in the Persian noble or the Hindoo Brahman, the Grecian leaders at the siege of Troy or the Conscript Fathers sitting like a council of the Gods, when the Gauls entered the Senate House. Now this speciality of development according to occupation, which is only at its incipient stage among savages, and at an imperfect grade of development under barbarism, attains to its maximum of realised action under our high-wrought and complex civilisation, although its transmissible effects are less visible in our constantly commingled population, than in communities more permanently settled in

their social arrangements, than is possible amidst the ethnic confusion and under the transitional influences of modern Europe. To this subject, however, both in its processes and effects, whether in relation to the larger grouping of race, or the miniature subdivision of caste, we shall have occasion to return at a more advanced stage of the present work. Suffice it for the present, that, despite the diffusion of knowledge and the development of more liberal institutions, whereby an approximative equality among all classes would seem to be ultimately insured, caste, not merely as a social arrangement, with its preferences and exclusions, but also as an organic speciality, with its endowments and defects hereditarily transmissible, like racial characteristics, is still extant among us.

It is, indeed a most mistaken idea that because we are in a sense civilised, we have therefore left barbarism, or even savagism, altogether behind. Intellectual, moral, social, and we may add, ethnic continuity, is not so easily broken. Everything indeed tends to show that although considerably refined and advanced, we are really rooted in the remotest past, many of whose habitudes have descended to, and some of whose organic specialities have been inherited by, us. Thus it is, among other things, that our culture, like that of the imperfectly educated barbarian of rank and position, is still preponderantly partial and professional, so that we are not MEN, but soldiers or civilians, clergy or laity, physicians, lawyers, authors, men of science, handicraftsmen and labourers, our very souls being for the most part cast in the mould of our several vocations, with the exaggerations they foster and the prejudices they presuppose.

But to return to that branch of the subject more immediately under review. The second race or Turanians, and that too in their ruder Mongolic variety, are apparently quite competent to the duties not only of an effectually developed and well-appointed barbarism, but also of the earlier stages of primitive culture and civilisation. Of this the Chinese and Japanese are a notable instance, to say nothing of the Siamese, Burmese, and others lying between them and the Ganges. But they are also capable, as we have seen, of sinking into or rather of remaining permanently in the savage state, a condition into which, apparently, the true Caucasian never wholly or normally subsides, a fact of almost invaluable significance in determining his place in the scale of being. Let

us then contemplate this speciality more minutely than we have hitherto done.

The fact that no Negroid people are thoroughly civilised, although through the Egyptians, Phœnicians, Carthagenians, Greeks, Romans, and modern Europeans, they have been in immediate contact with nations of considerable culture for fully five thousand years, must be regarded as adequate proof of a radical unfitness, that is, incompetency, for exercising the functions which it implies. Hence, perhaps it is not too much to affirm that they belong to the inherently savage or rude type of man on the plane of unassisted nature. While the counterfact that the Turanians are both savage and civilised, and as the latter have developed a style of manners, and a school of literature and art, together with a system of government and a code of laws, of so peculiar a character, as to imply a culture, not wholly, if at all imported, equally indicates that, as a type, they are at the transitional stage, according to education and opportunity on the one hand, and organic proclivity on the other, of either sinking into savagism, or rising into civilisation. While the third fact, that the true Caucasian never descends below barbarism, and is mostly in a social and intellectual condition, which, however imperfect, may nevertheless be denominated civilised, would seem to imply that he is specially endowed with those mental aptitudes and organic susceptibilities, that are more particularly demanded by the culture and refinement of an advanced stage of collective and individual development.

In this general, and necessarily succinct survey, we have confined ourselves to a statement of facts, that is, effects. Let us now endeavour to ascend somewhat higher in the chain of causation, and see if we cannot obtain some insight into the conditions that conduce to their evolution. The savage is a being at the incipient stage of humanity, that is, with something of the man, and much of the brute in him. He has slender wants, because he has few ideas. His requirements are small, because his conceptions are meagre. Living almost wholly on the plane of the senses, he is necessarily guided in his demand for comforts and conveniences by his actual experiences, rather than by any ideal conceptions of excellence and beauty, of fitness and propriety. The refinements of civilised life, like the complexities of civilised thought and the accumulations of civilised knowledge, are altogether beyond him. Thus we see that his consciousness and his

environment are adapted to each other, so that in their action and re-action, no especial want of harmony is anywhere perceptible, and no rude shock to the finer sensibilities is at any time experienced. It is in consequence of this adaptation of the savage to his environment, that his condition is so hopeless. Left to his own unaided resources, millenniums might elapse, while he advanced from the log to the canoe, and from the boomerang to the bow. His natural tendency is to move in the old grooves, and be guided by accustomed precedents both in thought and action. And in accurate correspondence with this, we find that his organisation tends to immobility of type, and with this, to early finality in the process of individual development. He has few monstrosities, and in truth, not many strongly pronounced individualities, in consequence of the predominance of bone and muscle over nerve, in virtue of which the tendency to an hereditary transmission of ancestral form, altogether dominates the tangential movement derivable from the specialities of his more immediate parents. And in harmony with this, it has been observed that even under the elevating and expansive influences of a European education, true development of the savage mind is generally arrested at the dawn of manhood, when most of the ideas become fixed, and further progress, in the sense of true mental growth, becomes virtually impossible. The dense cranium, with its sutures that soon close, and the stolid face, with its habitual immobility of expression, lit up only at distant intervals by the lurid fire of passion, is the outward and material emblem, because the organic accompaniment and effect of this interior condition of the consciousness, which is thus accurately reflected and ultimated in the corporeal structure.

As a contrast to this picture of the savage, let us now contemplate the man of civilisation, that is, the Caucasian when of pure blood, and subjected for centuries to the evocative and refining influences of collective and transmitted culture. He is gifted and sensitive in mind, being endowed with a rare capacity both for the acquisition and retention of knowledge, as well as for the exercise of thought and the activity of imagination. His wants are many, and, in a sense, his demands are insatiable, because his ideal standard not only transcends his individual experience, but also the collective achievements of his race. His aspirations are unbounded, and his receptivity limitless. Immobility is his

abhorrence, and he never sinks to it, unless as in India and Egypt, he becomes the colonising conqueror of an inferior type, when his only available barrier against the otherwise overwhelming flood of surrounding barbarism, is to fix and formulate his doctrines and institutions, so that progression and retrogression may be alike impossible. This, however, is an abnormal condition, under which he ultimately becomes fossilised, and so perishes. On his own area, and surrounded by men of his own blood, his natural tendency is to advance into new and improved conditions in accordance with his expansive thoughts and progressive ideas. His environment, though immeasurably superior to that of the savage, is not, to the same extent, in harmony with his feelings and desires. His conceptions are always in advance of his realisations. His wants transcend his power to satisfy them, hence he lives under a perpetual stimulus to exertion both of body and mind, so that, although not true of him individually, it is nevertheless a veracity, collectively applicable, that he employs every faculty, and strains every available muscle, in his continuous and unrelenting effort to maintain his high standard of culture, and promote the farther advancement of his race.

A mind so reflective yet so imaginative, so expansive intellectually and so exalted morally, would, one might suppose, as a priceless gem, be lodged in a fitting casket. The body in which such a soul could be appropriately vested for the sphere of time, ought to present that harmonic proportion of its several parts, that beauty of contour, spirituality of expression, and sublimity of aspect, which might render it as a living temple, the appropriate shrine, and so the truthful symbol, and adequate exponent of the divinity dwelling in that holy of holies, the innermost recesses of the consciousness, where man holds intercourse with God and drinks in spiritual life from the ever gushing fountains of the Infinite. Now the Caucasian type whether regarded anatomically, physiologically or æsthetically, is no doubt vastly superior either to the Negroid or the Turanian. It is more finely proportioned, and it is better knit. The superior functions of cerebration and respiration are more effectually discharged in it. It is more thoroughly specialised, whether as to its anterior or posterior extremities, and on every principle, and by all the data, through which relative position in the organic scale is adjudged, must be pronounced the highest human type yet developed. But notwithstanding

this, it is very doubtful whether it yet reflects the higher endowments, and nobler attributes of the Caucasian mind, as accurately and effectually as the Turanian and Negroid organisations respectively symbolise and embody the especial mental qualities attaching to their inferior types of humanity. This perhaps demands some explanation.

If all structure, whether cosmic or organic, be simply spiritual force ultimated into form on the material plane, it is obvious that as an index of the power which it embodies, it must be more or less dependent for fulness of significance and precision of meaning, on the conditions of time and space, into whose lower sphere it enters in the process of manifestation. Thus contemplated, the entire universe is simply a divine conception, or, as the Platonists would say, idea in the act of realisation, the successive phases of development by which it advances towards this being known, in theological phraseology, as creation. Now, no doubt every stage of such an evolution, with all its necessary accompaniments and accessories of detail, is, in a sense, the accurate reflection of a causal spiritual sphere, on whose plastic power it is more immediately dependent, and of whose projecting force it is the direct product. But in the profoundest sense, creation can only be a full embodiment of the divine idea on which it was formed, when it is *finished*, that is when the primal cause has been finally ultimated, through successive gradations, in the sphere of effects.

The principles all too succinctly enunciated in the foregoing paragraph, are susceptible of manifold and diversified, and indeed we may almost say, indefinite application. Thus, for example, if planets be, as some think, embryo suns, then they cannot, at this stage of cosmic immaturity, be a complete and adequate reflection of the solar idea, but only an approach to it, just as an infant is not a fulfilment of the idea of a perfected man. But we may carry the latter illustration from the organic sphere yet farther, there being two kinds of immaturity, the individual and the ethnic, that which attaches to the organism in its successive unfoldings as a separate unit, and that which applies to the species, genus, or order in its gradual evolution, as a distinct type of collective being. Now, it is under the latter head that we wish to make some additional remarks on the Caucasian, as contradistinguished from the Negroid or Turanian type of man. As we have already observed, whether we look to the admitted sequences

of organic development, in virtue of which as the highest, he must also be pronounced the latest type of humanity, or to the Geologic or Archæologic record, we are equally brought to the conclusion that the Caucasian type is the latest, and we may add, the highest effort of Nature on the organic, sentient, and intellectual plane. But if the latest, then the most ethnically immature, the most unfinished in relation to the ideal plan on which it is based, and of which it is a more or less imperfect ultimatum. Now, what is the plan on which the Caucasian is based? in other words, what is the fundamental idea of which he is an approximative fulfilment? And we reply, humanity at the stage of moral and intellectual predominance over passional impulse. This is only saying that he is man, when, having passed through the incipient stages of evolution out of bruteness, he has fully emerged upon the plane of rationality and principle, so as to be no longer, in any appreciable degree, a creature of mere instinct and desire, and thus entirely at the mercy of external circumstances, but rather a being of judgment and self-control, and so in a certain and ever-increasing measure, self-possessed and his own master. In the gradual realisation of this sublime conception, as it impinges on the material sphere, it will be manifested, first in the consciousness, then in the cerebral and nervous portion of the organisation, and finally, in the remainder of the corporeal structure. We suppose it is scarcely necessary to say, that only in the case of a favoured few, has this exalted standard of humanitarian existence yet reached even the consciousness, where it is maintained by a constant and lifelong battle with the inferior elements of being, derived from the brute sphere. In yet fewer has it become manifest, as an hereditarily transmitted cranial type, "to be seen and read of all men," competent we may add, to the interpretation of so sublime a hieroglyph. While probably in none has it yet been fully ultimated throughout the entirety of the organisation. This again is only saying, that while we may perhaps be justified in speaking of certain races and nations, collectively, as Caucasian, virtually, it is only a few of their more favoured individualities who have attained to this exalted standard of organic development and mental constitution.

It is here that we begin to see the importance of Phrenology and Physiognomy in the profounder interpretation of humanity. By the former we are enabled to test the cerebral

development, implying the structure and functional vigour of the brain in different races and individualities; and through the latter, we are provided with an index of the extent to which cerebration has moulded the remainder of the corporeal structure. Thus adjudged, it is only a slight per centage, varying according to the nation or caste under review, of any so-called Caucasian people, who even cranially attain to the true standard of their ideal type. The head usually lacks the coronal altitude, requisite for what may be termed an organic supremacy over the passions. While it is rarely so developed anteriorly, as to ensure either artistic or scientific precision in observation, much less breadth of view, depth of thought, or a logical concatenation of ideas, to say nothing of that yet higher creative power, which characterises genius in its moments of inspiration.. While correspondentially, the face lacks harmonic proportion and equipoise, the features being out of due relation to each other, and so indicative, either of sensuality on the one hand, or the absence of force on the other. In truth both head and face are, in the Aryan race, commonly Semi-mongolic, while in the Semitic, there are equal indications of an underlying Negroid element.

From this standpoint we may begin to understand the necessity for our complex educational processes on the one hand, and the almost unavoidable presence of that internal conflict between passion and principle, to which we have already alluded, on the other. The truth is, Caucasian civilisation, under all its manifold aspects, is virtually the product of our exceptionally superior minds, who as prophets have developed our religion, as legislators and statesmen have built up our polity, as artists have erected our palaces and temples, as savans have evolved our science, and as scholars and poets have produced our literature. And this being effected, all that is at present needed in the inferior order of minds constituting the masses, high or low, of the remainder of our population, is due receptivity for the acquisition and retention of those exalted thought-forms, bequeathed to us by the life-labour of the men of genius of all preceding generations.

The foregoing paragraph put into other words, implies that by far the larger moiety of Caucasian peoples are not adepts but at best pupils in the various phases of culture, whose totality constitutes our high wrought and complex civilisation. Hence in their life of action, they are not its masters but its

servants, but too happy if, with much ado in the way of education and apprenticeship, they have acquired such a measure of practical ability, as may enable them to discharge their respective duties with efficiency and success. This condition of things was seen at its maximum in ancient India and Egypt, where the lower and imperfectly Caucasianised castes were little other than unconscious and instinctive workers at their several tasks, of whose ulterior purpose or true relation to the social fabric as a whole, they scarcely knew more than bees in the formation of their cells, or ants in their assiduous care of the pupa cases that contain their young. From this condition of things we are emerging, but it would be mere self-flattery to affirm that we are yet entirely free from it.

Through those harmonic laws, in virtue of which there is everywhere a certain measure of underlying congruity, this imperfect social condition is reflected in the individual consciousness, of which it is indeed under a certain aspect but the collective result. Thus we have religious principles which we profess but cannot practice, and a code of social duties, that we would fain exact from others, yet shrink from fulfilling in our own persons. Our standards are exalted, for they have been derived from a Socrates or a Plato, a Moses or a Christ; while our actions are base, for they are the reflection of ourselves. Now, such a condition of things however hopeful and progressive, cannot fail to be productive of considerable discomfort and conflict. It is so, because it implies a condition of thought and feeling and a course of conduct, modelled on the inspirations of the very highest and most gifted minds, applied in all their stringent exactitude to the lowest, who necessarily fall short of the stupendous demand thus made upon their average sentiments and mediocre faculties.

But if thus imperfectly Caucasianised—or to use a better and really less exceptionable term, shall we say humanised—in our consciousness, and in the necessarily sequential evolution of material results from moral conditions, still less humanised in our cerebral development, what shall we say of the altogether imperfect ultimatum of the ideal of Caucasian Man, in the remainder of our organisation. We are fully aware that we here touch on new ground, and as an inevitable consequence trench on the prejudices, and in a sense, assault the convictions not merely of the religious but also

to man, cannot be dissevered from Physiology. This is one of those plain yet profound truths which, however patent to those who have once understood and accepted them, are nevertheless "a stumbling block and a rock of offence" to all whose educational prejudices oppose their reception. To remove such prejudices, and demonstrate the necessity of applying the principles of inductive investigation to the elucidation of mental phenomena, even when most complex and occult, is the more especial purpose of the two concluding Lectures of the Series.

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of the scientific public. The former have not yet learned that man is a legitimate subject for inductive investigation, and hence would still regard him with lingering awe, as something exceptional in the plan of creation. They are not content with contemplating him, as the indubitable apex of sentient and the initial type of rational being, but with pardonable excess of reverence for the sublime altitude of his existing standard of mental and corporeal development, would have us esteem him not only as constituted thus far on a divine model, but as its fulfilment, and consequently as the termination, because the completion of terrestrial creation. While the latter, with equally pardonable respect for accomplished facts, exhibit an unmistakeable distaste for all deep or far-reaching speculation, that would carry the mind, even in its most exalted flights of thought and imagination beyond existing standards of organic development. With the frank admission then that the following speculations are decidedly heterodox, we will now venture a few remarks on the ethnic immaturity of humanity, even in the Caucasian type, and the consequent imperfection of our mental constitution and physical ultimatum as members of this higher form of approximately rational being.

## CHAPTER II.

### MIND AND ORGANISATION.

In a subject going down to such depths it is necessary that our preliminary survey should be of proportionate extent. Conclusions based on a few exceptional data, would be altogether valueless in such a matter. In any attempt to trace the connection between mind and organisation, we must embrace not only one type of man but all, and compare not only the grander racial divisions but their minuter subvarieties and castes. Nay, we must go yet farther, and as far as our very imperfect knowledge of the psychology of animals will permit, we must include at least the brute realm in the comparison of physical type with mental constitution. Not that we would have it supposed from the rather pretentious severity of these merely preliminary observations, that the present endeavour to illustrate the connection between mind and matter is to be regarded as in any measure final and exhaustive. On the contrary we are painfully aware that all such efforts in the present state of Zoology and Anthropology, to say nothing of such merely subordinate and accessory provinces, as neurology (including cerebral physiology), physiognomy, and psychology, must be merely tentative, and as compared with the possibilities of a more advanced future, little other than abortive.

In any enquiry of this kind we should no doubt obtain much additional light by a careful study even of the radiata, mollusca, and more especially the articulata, as we should thus be enabled to contemplate mental manifestations under organic conditions, largely, if not radically diverse from our own, and from those of creatures fundamentally allied to us, as being of the same grand vertebrate division of sentient existence. But the data thus obtainable are slender and imperfect, to say nothing of their being in a measure unreliable, in consequence of the observer, almost unconsciously, and no doubt quite unintentionally, interpreting molluscous or insect action

from his own stand-point of interior consciousness, where a well-developed will and its harmonic instrumentalities, in the way of voluntary nerves and their readily obedient muscles, afford him the ever-present consciousness of the general supremacy of volition over automatic action, while, both from structure and manifestation, we have reason to believe that, in the lower grades of being, it is the very reverse. How far this purely automatic action may proceed, and to what extent it may be perfected for the production of results, having the appearance of carefully prepared and pre-determined ends, it is impossible to say, as although a ganglionic arrangement of the nervous system, as in the case of the articulata, would seem, in its simpler and earlier stages, to imply the entire predominance of automatic movements, yet in the ant and the bee, where the cephalic ganglia are so powerfully developed as to constitute an approach in volume, if not in complexity, to the true brain of the vertebrates, there may be a somewhat proportionate development of interior consciousness, whereof this advancing centrality in the nervous system is the manifest result and organic expression. One thing, at least, is clear in relation to these lower types of being, and this is, that, from uniformity of action under given circumstances, there is an entire absence of well-marked individuality among them. One bee or one ant is not only like another in organisation and appearance, but is also generally an accurate reproduction of its special type in the minutest details of its daily life, which usually consists of an unvarying round of onerous, though apparently pleasurable duties, performed with a faithfulness and assiduity transcending, it is to be feared, aught to which we attain through our feeling of responsibility. The occasional departures from this iron routine, under exceptional circumstances, sometimes specially provided by the observer, should be more carefully studied, and, above all, should be contemplated from a profound, and, as far as possible, purely abstract psychological stand-point.

We have in the former paragraph especially recommended a study of the lower grades of sentient being, as illustrative of the higher. But the process may sometimes be reversed with advantage. Thus, for example, how many of the actions which we term instinctive in brutes, are, in reality, automatic. As, to cite a yet higher instance of the confusion of terms, which results from a previous confusion of ideas, how many of the actions of men which we vainly term rational, are, in

reality, instinctive. Let us distinctly remember, in these inquiries, that the higher grades of being are built up out of, and rest upon, the lower, not only in the way of organisation, but also of function; the automatic being translated into the instinctive, and the instinctive into the rational, by a succession of gradations so fine as to be almost imperceptible between the more nearly allied instances. In this connection, also, it would be well to remember that the automatic element is by no means extinct in man, as we see from its occasionally powerful development in writing and drawing media, who thus frequently manifest the action of high intellectual endowments, operating, to all appearance, without the consciousness of the possessor. Such cases, if carefully studied from the duplex stand-point of internal consciousness on the part of the subject, and external observation on that of the observer, might throw considerable light on the automatic and involuntary provinces of sentient being in all its successive grades of ascensive development.

But to return to our more immediate subject, namely, the connection between mind and organisation in their successive stages of ultimatum. Whatever may be the character of consciousness in either the higher or lower grades of the articulata, it is quite certain that, when we descend in the chain of causation to their nervous system, it is more diffused than in the vertebrates, and, in accurate correspondence with this, we find far less intimacy of union between the several parts of their body. Thus, in the bee, ant, and other insects, we have head, thorax, and abdomen, connected only by a slender thread, as if each still largely constituted an independent and isolated organism, almost ready, as in the case of the monad, when approaching bipartition, for segregation from its neighbour. And yet, there is a finish and perfection in the limbs, and a specialisation of function, as in the case of the antennæ, together with a degree of strength in proportion to weight, and an endurance in action, demonstrative of farther ultimatum on their own plane, than anything yet attained to by the highest of the vertebrates. The indications thus afforded are, that automatic action is at its known maximum in these ganglionic types of being, just as from opposite data we should be equally justified in concluding that intellectual and moral consciousness are at their known maximum in man, whose vertebrate type and powerful brain present us with a nervous system at a more advanced stage of centralisation than in any

other terrestrial organism. While on this subject, we may again remark that it is quite impossible to study man profoundly, not to say exhaustively, which is, as yet, impossible, without embracing the entire range of sentient being in our investigation. Thus, for example, to at all understand the present and prospective concomitants of the high-wrought and advancing concentration of nervous force, resulting from the powerful development of the human brain, we must also study the opposite condition of diffusion existing among the articu-*lata*, and thus compare the contrasted effects of high-wrought cerebral with powerfully developed ganglionic structure.

The myth of *Antaeus* is constantly fulfilled in the successive stages of organic development. Just as the highest of the *mollusca* are more effectually developed in many points than the lowest of the *articulata*, so the highest of the *articulata* are more active, vigorous, and intelligent than the lowest of the *vertebrates*. Nature stoops to conquer; that is, she yields certain specialities of excellence in return for a higher totality. Thus, for example, she has yielded the muscular vigour of the flea, the wings of the *papilio*, and the co-operative instinct of the bee, to develop the fundamentally more advanced, because vertebrate, type of the fish, the low beginning of a radically superior type of being, which has already attained to the mental and physical grandeur of bipedal and rational man. Now, the first question to be settled here is, what does the vertebrate type of being represent? And we reply, a solar plant. This perhaps demands some explanation.

The specially so-called organic realms, that is, the vegetable and animal kingdoms, are obviously the product of combined solar and telluric action. The earth alone could not produce them, she requires the fructifying influence of the sun. Hence, the plant while rooted in the earth, that is, affixed to the bosom of its terrestrial mother, throws up its stem, and expands its leaves and blossoms to the sun, climbing on the knees of its solar father, if so bold a figure be permissible in a partially scientific work like the present. So the animal, when solar influences have been withdrawn, and consequently nocturnal conditions and purely terrestrial forces largely prevail, becomes horizontal in sleep as in death, man himself being no exception to this rather humiliating rule. While, at sunrise, each type at all capable from corporeal structure of such a feat, when it returns to a state of vigilance, stands on its legs or mounts on its wings, and holds up its head, as if to

welcome the return and rejoice in the smile of its celestial sire. Have we not here, if not the primal, at least the remote source of that bisexual arrangement of the vital forces which, though distinctly perceptible in the vegetable kingdom, is more especially emphasised in the sentient realm of existence. The negative or feminine and receptive form of being, representing telluric influence or that of our common mother, while the positive or masculine and radiative, equally represents solar power, or that of our common father.

But to return to the more immediate line of our argument. In this combination of solar with telluric influence for the production and gradual evolution of organic existence in an ascensive series of appropriate forms on the surface of the earth, solar power is a manifestation of imponderable force, adapted to act through telluric conditions on ponderable matter. Now it is obvious from the types of being which these bipolar forces have hitherto produced, and of whose genesis we have an accurate record in the geological strata as interpreted by Palæontology, that solar influences are steadily advancing towards supremacy, the earlier types of organic existence being predominantly negative and feminine, and the later as pre-eminently positive and masculine. Thus, in the sentient sphere, cerebral and thoracic development, as we ascend through the succession grades of the animate scale, tend to gradually preponderate over that which is simply lumbar and abdominal, this tendency culminating thus far in man, who presents the most centralised form of nervous development the earth has yet produced. As we have already observed, he is, strictly speaking, the only approximately completed type on the vertebrate plan; fish, reptiles, birds, and quadrupeds being most obviously its merely embryonic forms, their limbs not having attained to liberation from the trunk of the body, while their anterior extremities have not been effectually specialised into cerebral instrumentalities.

Now, what is the typical form, and with this the normal position and function of the nervous system, as thus developed into approximate perfection in man? And, we again reply, a plant with four large limbs, branching off from that main stem, the spinal cord, which springs from its apparently bulbous, though in reality highly convoluted root, the brain, this being, however, exactly inverted as compared with its ordinary position in the vegetable kingdom. But why is it thus inverted? And we reply, because the nervous system is related

to the sun as its great and relatively primal centre of imponderable force, as the plant is related to the earth as its great and relatively primal source of ponderable nourishment. In other words, if again so bold a figure be permissible, the nervous system is rooted in the sun. It probably is so from the dawn of its development in the realm of sentient existence, for its function is the circulation of imponderable force, whereof solar light is only a form. But in the radiata, mollusca, and articulata, it is perhaps rather comparable as regards form to that of lichens, mosses, and other forms of vegetation that cling to the earth and tend to spread themselves out horizontally, while in the vertebrata it has assumed more of the appearance of a tree, though even here it has not attained to perpendicularity, except, as we have remarked, in man, the only approximate ultimatum of the type.

Now, if the manifold centres, and with this the diffusive character of the nervous system in the articulata, be indicative of the absence of a well-developed consciousness, then, conversely, the highly centralised character of the nervous apparatus in the vertebrata must be indicative of the very reverse. But this speciality will only be emphasised where the typical form has approached to completeness, and where, consequently, its appropriate psychological concomitants have been fully developed. These conclusions are also corroborated by other peculiarities attaching to the higher as compared with the lower grades of organisation, and notably by the interiority of function, characteristic of the former, and its externality in the latter. Let us yet farther explain our meaning in this last sentence by the citation of a few illustrative instances.

In the vegetable kingdom, alimentation is effected through roots, which are external, while throughout more especially the higher grades of the animate scale it is accomplished through a stomach and intestines, which are internal. Plants respire through leaves that grow on the extremities of their branches; animals through lungs, which are placed in the cavity of the chest. Again, vegetables are reproduced from suckers, cuttings, and seeds, the two former planted and the latter cast into the earth, as the common mother, who thus effects a large portion of the process of reproduction, by means not only external to, but isolated from and independent of, the individual parent. We see this process repeated to some extent among insects and fish, while even with birds, although hatching demands the brooding influence of the

mother, yet the embryonic formation effected in the egg is accomplished by means exterior to the maternal organisation. But through the marsupial we arrive ultimately at the placental mammal, where reproduction is so preponderately internal that the young are born with all the more important characteristics of the typical structure fully formed, and little is left to the plastic power of the common mother in the way of after evolution, except to emphasise features already constituted.

If material organisation be indicative of mental constitution, have we not here all the characteristics of steadily advancing interiority of being? But as if to leave us in no doubt as to the conclusions we should draw from this progressive internalisation of structure and function, we have the cerebral convolutions, so vast and complex in man, and admittedly the seat of our mental operations. Were we capable indeed of correctly and minutely interpreting this portion of our organisation, it would no doubt largely reveal to us the mental constitution of which it is the organ. But without this detailed exposition, which is at present impossible, we are perfectly justified in concluding from the totality of man's corporeal structure, both cerebral and visceral, that in him the interior, which means fundamentally the spiritual life, is not only at its present maximum on the terrestrial globe, but that in him alone it has awakened up into distinct and well-pronounced consciousness.

But it must not be supposed from this that he is deficient in the sphere of action. We should not indeed be justified in coming to such a conclusion, even on *a priori* grounds of reasoning, for we must remember that deeds are but thoughts in ultimatum; so that, granting man to enjoy a more effectually developed interior life than any other terrestrial being, we might expect that, eventually, he would project himself with proportionate force upon his environment. We are not, however, left in any doubt on this subject, as his organisation is an adequate symbol of energy and an apt instrument for labour, while the works which he has accomplished, from subduing the earth for his agricultural uses to decorating it with temples for his religious services, are sufficient evidence of his ability in design and his industry in execution. We have spoken of man's organisation in relation to work, implying his ability for productive, constructive, and quasi creative labour. This is symbolised in that finest and most efficient

organic instrumentality yet developed on the earthplane—the human hand. The bee forms its cell and the bird builds its nest, and it is observable that both of these are aerial types, the one on the ganglionic and the other on the vertebrate plan of nervous organisation. Strictly speaking, however, we lose the worker after leaving the articulata, till we find him again in the highest of the vertebrates. And it is yet farther noticeable that even in man, the savage is, strictly speaking, not so much a producer as a destroyer, being, as we have elsewhere said, a bipedal analogue of the carnivora. It is indeed, as a rule, the highest types and the most civilised races that are the greatest producers, and, we may add, the most careful accumulators, and it is observable that in these the hand is most effectually developed, whether in its spatular, artistic, or psychical form. More lies beneath this than appears on the surface. Man, as the archworker, is the earthly analogue of God as the creator. He is so as the labourer and artizan, and he is yet more so as the artist and the poet. And the structural symbol of this is the hand, in which creative power has arrived at its highest and most effective ultimatum thus far on the organic plane of earthly existence.

Neither is this mere hypothesis, or *a priori* reasoning from data, all too few or feeble for the conclusions based upon them. For in the works which man has accomplished, and in the results that he has achieved, we have the amplest evidence of his inherent aptitude for acting efficiently on the external world. In truth, there is reason to believe that in him nature has attained to an agency on the sentient plane, that may ultimately prove equivalent, in its telluric results, to what she has already accomplished on the insentient, through vegetation. By the latter, from the enormous deposit of carbon enclosed in our coalbeds, she so altered the constituents of the atmosphere, as to render the earth ultimately inhabitable by higher types of sentient life than any which could have existed on it prior to this modification in their aerial environment. So, we have reason to believe, that man by his cultivation and drainage of the earth's surface, by his conversion of the forest into the wheatfield and the swamp into the meadow, will ultimately bring atmospheric conditions into a yet higher degree of purity and refinement, and so conduce to the development of superior forms of sentient existence to any yet manifested even on the human plane.

Neither are his labours as a subcreator even thus exhaustively

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enumerated. As an agriculturist and horticulturist he has modified the forms of vegetable life, and in the process of adapting them to his requirements, has obtained a practical knowledge of the laws of their evolution, which has enabled him to produce permanent varieties, if not the germs of new species. And it is the same with animals. Their forms, if not their functions, have proved largely obedient to his will, persistently exerted through successive generations; so that, from their osseous remains alone, the competent zoologist is enabled to pronounce, centuries after their inhumation, whether they belonged to the wild or domesticated division of their type.

Nor is man, when in full action, at all less efficient as a destroyer. In the struggle for existence he is virtually supreme, if not as the savage or the barbarian, then at least when armed with all the stupendous resources of modern civilisation. Hence, in the first place, he makes good his own position, as against either the herbivora or the more ferocious carnivora, whose tenure of existence seems simply dependent on the forbearance with which the sportsman's rifle may be exercised to their disadvantage. With primæval man they might wage something like an equal warfare, but with the lapsing ages the battle is obviously going so decidedly against them, that their ultimate extinction seems to be merely a question of time and circumstance. Now such an apparent derangement of nature's forces, such a disturbance of her old equilibrium, cannot be an accident. It must be due to the more effective evolution of other forces, and the consequent inauguration of an equilibrium based on new conditions. Let us then contemplate this phenomenon in minuter detail, and endeavour as far as possible to discover its producing causes and anticipate its final results.

This rapidly increasing power of man over the atmospheric and other telluric conditions of the habitable globe, together with his steadily advancing supremacy over the vegetable and animal kingdoms, whether as creator or destroyer, is due primarily to the increase of his mental resources, whether through improved culture or higher organic development. His rule is no doubt that of the strongest, as was that of the gigantic saurians and huge mastodons, but their force was material, and that too largely in its rudest form, as mere mass, while his is as predominantly spiritual, that is, moral and intellectual, in its essential character. Hence the reason why

it cannot be exercised at all by the mere savage, or in full force even by the barbarian. This more direct reign of mental force through man, as its conscious and visible exponent, inaugurates a new era in the history of the earth, as a sustainer of organic, but above all of sentient and intellectual forms of existence. Strictly speaking, it implies, what, for want of appropriate terms, we may specify as the more direct and immediate action of the divine element of intellect—or as the later Platonists would have said, the Logos—on creation. Prior to the advent of man, this ever operative and plastic force no doubt acted unerringly and efficiently by natural laws, but it did so through blind and unconscious instrumentalities. While in man it has attained to the mastery of a conscious and intelligent agent, whose initial type and incipient reign have already afforded earnest of that great and glorious futurity, which awaits the more matured forms and the confirmed rule of the rational and moral orders and genera of the earth's advanced hereafter.

In its minuter processes and results, this advancing supremacy of man over the soil promises eventually to diminish the intensity of tropic heat and arctic cold, and at the same time to proportionately reduce the inequality of the seasons. But if it should accomplish this, it will also reduce the violence of the tempest, and render even the occurrence of ordinary storms less frequent and destructive. Ultimately, it may cover the desert with vegetation, and cause the summer rain to fall in refreshing showers, where now the breath of the simoom consumes like the blast from a furnace. It will dry up the poisonous exhalations arising from the stagnant waters of the morass, and the decaying vegetation of the forest. Now, such changes effected in his environment cannot fail eventually to react on the organisation and functions of man. Such harmonic conditions will favour an increase of susceptibility in the nervous system, and with this cannot fail to prove conducive to greater delicacy of perception, clearness of thought, and vividness of imagination. Nor will this improvement in cerebration be confined to the intellectual faculties, but may be expected to extend to the moral sentiments and emotions, elevating the former and refining the latter. Now, should this be effected, the harmonic laws would necessitate proportionate improvement in the remainder of the organisation, which would have to be modified into accordance with this superior type of cerebral development.

This is only saying that the conditions which have presumably conduced to the evolution of the Caucasian race, will, when still farther intensified and exalted, equally conduce to the evolution of a yet higher type of humanity, the product of the more favourable circumstances under which it will have been developed.

So, if we look into the detail of the action of man on the vegetable kingdom, it will be found to consist principally in the selection and culture of those plants and fruits which contribute to his own sustenance or that of the domesticated birds and beasts that he has rendered, in various ways, subservient to his convenience and requirements. So great is the modification thus induced, both as to quantity and quality, that it virtually amounts to a preparation of food in the process of its production, almost equivalent in effect to the subsequent process of cookery in its preparation for the table. The extent of man's power in this direction is still but imperfectly appreciated. It is only when we compare the aspect of a cultivated region like Western Europe with the forests and prairies of America, that we begin to understand the amount of modification which he has accomplished on a large scale. While in the substitution of cereals for grapes, and of horticultural flowers and fruits for nature's spontaneous products, we see the minutiae of that process through which conscious intelligence is now operating on the organic realms that lie beneath it.

Now, it must not be supposed that there is anything forced or abnormal in this apparent interference on the part of man, either with telluric conditions or with the gradual evolution of organic forms, he being himself a product of the earth, and a result of the spontaneous development of higher structure and superior functions to which its steadily advancing state, as a planetary organism, has inevitably given birth. As an accomplished effect, he reacts in the form of a secondary cause, for the reinforcement of those influences, and the acceleration of that movement, to which, physically speaking, he owes his own being. Here, as in the case of civilisation, we must enlarge our ideas of what is natural, and so learn to accept man with all his endowments, mental and physical, together with their results, as a product of the same forces which, in a lower sphere of operation, have produced the coral insect and the bee, the bird and the beaver, each of whom according to its ability, reacts on its environment,

producing that amount of modification to which, by innate endowment, and in some instances, by combined action, it has been rendered competent. In truth, these remarks apply not merely to the sentient, but also the insentient realm which co-operates according to its stage of development with the other forms of the universe for the production of those final results, that have apparently been foreseen and provided for from the beginning. And to this law, man, whether as hunter, agriculturist, artizan, or engineer, is no exception.

Now this specially human, which implies, consciously, intelligent action, is symbolised in that anterior extremity, the hand, which is, in reality, the constructive and creative intellect appropriately ultimated in a befitting organic instrumentality. It is doubtful if the full significance of this sublime symbol has ever yet been duly appreciated. In this, as in much else, we are prone to contemplate man on his earthward, rather than his heavenward side, regarding the hand as a merely operative, rather than as a creative and psychical instrumentality. We look upon the labourer as using his hand naturally and normally, while conversely, the author, artist, and musician are supposed to use theirs, at least, exceptionally. But we must rise above these prejudices, and learn that Raphael painting his Transfiguration, or Shakespeare writing his Hamlet, are occupied as naturally as the porter when loading his van or the peasant when driving his plough.

We are here indeed brought to the front of a great problem still awaiting solution from some deeper thinker than has yet appeared in the ranks of anthropology, we allude to the typical distribution of men, not simply according to the ruder structure of their body, but the finer qualities of their mind. There is a considerable range in the former, as will some day be admitted, even by the general public, when certain religious, political, and social puerilities respecting the assumed equality of races shall have been finally exploded, as is their doom, sooner or later, at the hands of steadily advancing inductive science, secure in its data and therefore assured as to its conclusions. But the corporeal range, more especially as interpreted by our present imperfect and superficial psychonomy, whether of the head, face, hand, or total corporeal structure, is very limited when compared with the far wider range of mental diversity, even as it is found existing among men, presumably of the same race, and certainly speaking the same language and citizens of the same state. Only think of

the gulf which divides the commonplace rank and file you find in the fields or meet in the street, from the true master-spirits of time, who were yet not more than human. But not only is there this difference in elevation and expansion, calibre and force, as between the higher and lower class of minds; but there is also the diversity in endowment and direction as between minds even of the highest order. In reflecting on this subject, we must recollect that there is not only the difference in gift and power between an ordinary artizan and Shakespeare, or an average peasant and Lord Bacon; but there is also the diversity in mental constitution, which differentiates the intuitive poet from the inductive philosopher.

It is here that we begin to obtain some insight into the merely germinal character of existent humanity. Only an initial type, feebly pronounced and imperfectly developed, could fold up such interior specialities beneath corporeal envelopments, characterised rather by general similarity than diversity. There can be no such mental range within the limits of any other species. One lion or one buffalo does not differ from another in mental constitution, to the same extent as one man of genius differs from another, or as both are differentiated in quality and power, from the comparatively undistinguished mass. No doubt, from a superficial and unreflecting standpoint, such men are easily accounted for as exceptionally endowed individuals, specially gifted for a particular purpose. But the true man of science knows that no normally constituted individuality can be regarded as really isolated and exceptional. Neither sage nor poet, legislator or prophet was ever yet so great but he might be justly regarded as typical, although, perchance, his spiritual kinsmen might be separated from him by a gulf of time, that historians and chronologists would admeasure not only by centuries but millenniums. Moses and Lycurgus, Christ and Mohammed never looked a full brother in the face during their earthly sojourn, but each doubtless belonged to a spiritual sphere of similar souls, and was distinguished by a corporeal structure, essentially typical, though prophetic of the future rather than characteristic of the present. Such men are, in all probability, the exact opposites of those labouring under atavism. As the latter are melancholy examples of retrocession to an antecedent and superannuated type, so the former are glorious instances of the early though not really premature advent of structures, not yet quite due in the ordinary sequences of organic evolu-

tion, but nevertheless, steadily advancing towards inevitable manifestation in the fulness of geologic time. It is, perhaps, this structural and psychic relationship to the future which gives them their undoubted aptitude for moral and intellectual leadership, and in virtue of which they have been the pioneers and prophets of humanity during all the ages of the past, and will be so throughout all the eras yet to come.

It must not be supposed, however, that this diversity of mental constitution is limited to, although no doubt, especially emphasised in that exalted class, commonly known as master-minds. It is not simply that the poet differs from the sage, or that one poet or one artist differs widely in endowment and proclivity from another. A similar diversity, in reality, differentiates the contrasted types obviously existent among those, whom, with a scarcely pardonable assumption of mental superiority, we conglomerate as the undistinguished masses. No doubt, this diversity is by no means so strongly pronounced in the lower as in the higher sphere of intellectual endowment, but to a duly acute and penetrating observer, it is nevertheless distinctly perceptible. But for the reading of this many-paged volume we require aids as yet scarcely at the command of ordinary anthropology. We need phrenology in its profoundest form, as a true system of cerebral physiology, embracing the structure, temperament, and consequent function of the brain, both in its totality as the one great organ of the mind and also in the speciality of its several parts. But the physiology of the brain cannot stand alone as an isolated fact in the great domain of Nature; it is but a part of the nervous system, itself only a portion of the organism, whether of the man or the animal, to which it is attached. Hence, also, we need physiognomy in its widest acceptation, not merely as a means of interpreting the significance of the face, but also of the entire organism, embracing the psychonomy not only of the extremities, but also of the trunk, with the presumed volume, proportion, and functional power of its thoracic and abdominal viscera. In other words, if we would know the interior and mental man, we must be able to diagnose his external and corporeal envelope, ascending from the latter as the sphere of effects to the former as the sphere of causes. We cannot hope to even approximately achieve such a diagnosis of the human organism yet, and the following observations must therefore be regarded as the adumbration rather than the realisation of such a purpose.

To fully comprehend the different races, varieties, types, castes, and individualities which constitute collective humanity we must first understand man in the abstract. We must endeavour to discover what relations he holds and what duties he discharges to other provinces of being. We must know something of the symbolism of his structure and the significance of his functions; for, as a divine hieroglyph, his meaning however profound, must, nevertheless, be definite and precise, had we but the requisite insight for its full interpretation. In other words, man is an unfathomable mystery to us, simply because we lack the wisdom requisite for fully appreciating the revelation of wisdom and power whereof he is so befitting an embodiment. Let it not be supposed from the tenor of the foregoing remarks that we regard him as a problem easy of solution. He will tax the ages, and perhaps, after all, will never be fully understood from his own plane, but only when contemplated from one above and beyond it.

#### THE OSSEOUS SYSTEM.

The foundation of the human frame is the osseous structure, through which it is related to the mineral sphere of comparatively hard and stable, but insensate and immobile matter. It is a living temple built upon a rock—the time-honoured emblem of everlasting truth. This is the symbol of that strength which arises from *vis inertiae*, and accordingly those in whom the osseous structure is powerfully developed are generally persons of fixed ideas and unalterable opinions. Where the moral and intellectual nature is also well developed, as among the Scotch, this persistence will seem to arise from deep conviction, but in reality it is due to what may be termed an elemental endowment, underlying and modifying all the conscious operations of the mind. Where this portion of the corporeal structure is not only massive but angular, there will also be a corresponding ruggedness in the disposition, and not unfrequently a proportionate angularity in the ideas. Let us remember that we are speaking of the foundation of our corporeal being, which must modify the entire superstructure that is built upon it.

Nor is the osseous portion of our structure of importance only as regards the comparatively ruder attributes of form and volume; its quality is also of considerable significance.

When porous and spongy, it is indicative of an underlying element of coarseness in the nature, the bequest probably of a long line of imperfectly cultured and semi-barbarous, if not savage ancestors, allied to either the Negroid or Turanian type of primitive Man. Persons so constituted will be deficient in native delicacy and refinement, and in that taste, tact and intuitive insight, which usually accompany these higher qualities. When, on the contrary, the osseous system is fine and dense, and so approaches to an ivory texture, it is equally indicative of the possession of a hereditarily transmitted refinement of nature, the slowly cumulative effect of ancestral culture and civilisation acting on a Caucasian organisation, and so evoking that intensity of feeling and susceptibility to emotion which usually accompany and conduce to delicacy of perception, rapidity of thought, and vividness of imagination, the intellectual attributes of that mental constitution whereof genius is the culmination.

We have, however, as yet, by no means exhausted the symbolism or the relations of the osseous system; the former is profounder, and the latter extend farther than might be supposed from the foregoing observations. In virtue of his skeleton, Man is related not only to the mineral strata of his own globe, but also to the mineral elements and solidified portions of all the great bodies in the universe. In a sense, he thus stands directly on the adamantine foundations of all material being, and so partakes of and sympathises with its practically everlasting stability and endurance. But it is observable that his relation to this relatively hard and immobile sphere is very different from that of the vegetable kingdom. The tree is rooted immoveably in the soil, on which it is thus not only dependent but to which it is a prisoner. While Man, in common with a large portion of the sentient realm, of which, in this connection, he may be regarded as the representative, folds up this ponderous and inflexible material within his otherwise moveable and pliable organisation, thus subjecting it to his pleasure, and compelling it to obey the manifold and ever-varying behests of his sovereign will. Nay, by the organic speciality of joints, he is enabled to unite strength with flexibility, and thus subordinate the very immobility of his mineral elements, in the form of leverage, to the requirements of his locomotion, through which, in contrast to the plant, he bears his basis as a willing captive through the world. It would probably be impossible to discover or even

to conceive of a more striking and befitting emblem of the supremacy of mind over matter than is thus provided by the subordination of bone to muscle and muscle to nerve, in that ascensive series of cause and effect, which ultimately lands us in will as the motor and controlling force of our osseous foundation.

This subordination, however, was not achieved suddenly, for in the mollusca and articulata the skeleton is still external, and so constricts and restrains its occupant, who is thus partially a prisoner, though in a moveable cell or cage. While even in the earlier fishes the skeleton is still cartilaginous, thus showing that at this incipient stage of the vertebrate grade the mineral realm has scarcely been taken fully captive. The same indication of imperfect supremacy on the part of the earlier sentient types over their material environment, is also afforded in the shell-like covering of many reptiles, such as the turtle, tortoise, alligator, and crocodile, whose hard and almost impenetrable external covering allies them to the inferior range of the crustacea. In that grandly aerial, and therefore quasi spiritual type, the birds, the more ponderable mineral elements had to be reduced to a minimum for the purposes of flight, and accordingly in these the bones are merely hollow tubes, which in certain species of very vigorous flight, such as the raptors, communicate directly with the organs of respiration. This is probably osseosity, if we may be allowed the use of such a term, at its maximum of practically attainable refinement in types at the oviparous stage of production, and, we may add, the muscular grade of development. Judging by the race-horse and the man of nervous temperament, the improvement of the osseous system in types at the viviparous stage, must be through a different and almost opposite process, under which the diameter of the transverse section of a bone will have to be gradually diminished in proportion to its length. Let us remember in this connection, that man, as an aerial type, will not achieve ascension, as in the flight of birds, by the strength of his muscles, but as in the case of certain ecstasies, subject to levitation, by the force of his nervous organisation; in other words, not by his action on the atmosphere, but his relation to the imponderables. Not till he has attained to this stage, as the normal condition of some of his varieties, will man be a true microcosm in relation to locomotion. Muscular progression, whether by the swimming of fishes, the flight of birds, or the walking of

beasts, does not fully represent and reproduce the movement of planetary and other bodies through space. These stupendous masses are borne with almost inconceivable velocity on their respective orbits, without interior effort at all corresponding to the muscular movement of the higher grades of sentient being, and man must furnish the analogue of this in the telluric sphere, ere his attributes as a microcosm will have attained to full and effective manifestation.

Man's direct relation to the mineral sphere through the osseous portion of his structure, is confirmatory of the principle manifested in embryology, that the higher types are built up out of the lower, not by subtraction, but superaddition. It is doubtful if we have yet fully realised the vast range of conditions thus indicated. Connected with the insensate rocks, he yet rises through muscular force and nervous susceptibility, to mental consciousness and moral responsibility; relations so diverse indicate a wonderful variety and vastitude of nature in the being who can span and hold them all. Allied to the material sphere of being by his body, and to the spiritual through his mind, there is no known, or, we may add, conceivable form of existence to which he can be regarded as an utter stranger, or from which he is wholly dissociated.

#### THE MUSCULAR SYSTEM.

Neither is the muscular system altogether devoid of significance. It is the instrumentality by which will ultimates itself into manifestation through a sentient organism. It presupposes that the being who is provided with it must be subject to the law of gravitation, antagonised by vital force, under the direction of volition. It is in many points the opposite of the osseous system, and notably in flexibility and elasticity. Hence we may perceive it is matter more effectually vitalised, and so more readily obedient to monition. It is, indeed, through it more immediately that the bones are made our apt instruments, their strong levers and admirable joints being put into motion and controlled by muscular pulleys, specially provided for this purpose. As a symbol, it pre-eminently signifies mind acting through a material instrumentality. In the order of progression, it allies man to the animal kingdom, as, we may observe in passing, his vascular system allies him to the vegetable. It is doubtful whether we are yet capable of its full interpretation. Its

speciality is, that as opaque, ponderable, and in a sense impenetrable matter, it is nevertheless thoroughly suffused through the agency of the nerves, with those forms of vital power which conduce to sensibility and motion. What vast possibilities does it thus suggest, or, shall we say, foreshadow on the cosmic plane. It would seem that, given a certain amount of vital force, diffused under special conditions of structure, and matter is rendered directly subordinate to mind. And here, perhaps, we may ask, is this an actuality of the present, or a prophecy for the future? Granting that the solid nuclei of planets and suns represent the osseous system of the stellar universe, and that its magnetic currents are a form of neural force, what is their elastic atmosphere? Is this the cosmic analogue of muscular development? Is man here also a microcosm, under a form whereof the ancients never dreamed? Let not these be regarded as vain speculations. Man will never be fully understood till he has been profoundly contemplated, not only in his more immediate, but also his more distant relations, the nearer and smaller being simply indicative of the grander and more remote.

#### THE VASCULAR SYSTEM.

Man, however, is not simply a thing of bones and muscles, he has also a vascular system, through which, more immediately, both are nourished and repaired. Through this, as already observed, he is related to the aqueous elements of the earth, his pulsation being an organic response to the tidal movements of the ocean. Let us distinctly understand that man is an harmonious part of nature, and although her telluric apex, yet, as we have seen, through his bones, allied closely to her minerals, and we may now add, through his blood, to her fluids. As his muscles are but the fibre of wood more effectually vitalised, so his sanguineous system is but the sap of vegetables in more active circulation. Its connection with respiration, whereby the dark and deadly venous currents are converted into the bright and beautiful scarlet of the well-vitalified arterial, is but the organic analogue of that great process of purification, through which, under solar heat, the venous earthblood of the sea is distilled, by evaporation, into the sweet and pellucid pearldrops of the summer rain. Nature is one, and as a result her smallest processes are analogues of her greatest, nothing being too mean to illustrate her laws, and nothing too vast for submission to her supremacy.

It is a most mistaken idea that what we call death occurs but once in the process of our natural lives. We die daily, hourly, and even momentarily. Our venous circulation is simply a river of death, laden with worn-out and defunct fragments of our ever changing organism, like a river in autumn, when it bears the broken branches and russet leaves of a bygone summer thickly strewn upon its surface. Rivers, indeed, are merely earth-veins, through which the defiled fluids of the planet return to their oceanic centre, that mighty world-heart, at once the receptacle of death yet the fountain of life. We fondly fancy that this life is specially a property of the organic realms, quite forgetting that greater and more widely diffused cosmic vitality from which it is derived, and of which, contemplated collectively, it is simply a subordinate province. In this matter, then, of his sanguineous circulation, man is simply a reflection of that circumambient cosmic sphere, whereof, physically speaking, he is only one of many multiform products. Let us remember that all being is a unity, whereof every seeming individuality is but a constituent part, a bud or blossom, a leaf or twig of the mighty and all-embracing Ygdrasil, from whose branches the superannuated stars of heaven fall, like o'er-ripened fruit, in due season. We must keep this principle in view, for it will have to be applied in our reflections on that higher spiritual sphere, to whose elucidation these speculations on the material phase of being are merely introductory.

Primarily, man's relation to fluidity through his vascular system, is symbolic of his mobility, being in this respect the opposite in significance to the osseous portion of his structure. The latter, as already observed, is emblematic of stability, supplying fixity of ideas, and a certain measure of persistence in action. The mobility of ponderable fluids is, however, very largely, if not wholly, a merely negative property, and must be carefully distinguished from the positive, that is active force of electricity and the imponderables. It is the nervous system which is related to the latter. All this is, of course, only saying that; through his fluids, man is allied to those of the planet on which he resides; in other words, that in so far as water is a constituent portion of his organisation, he must partake of its properties, and be characterised by its specialities. Now it is observable that water is converted into ice—that is, it becomes solid and comparatively immobile, under a certain diminution of temperature. This is the em-

blem of death as consequent on the withdrawal of such a measure of life-power from the organisation as will deprive it of molecular action, muscular movement, and nervous sensibility. Death is the final frost of organic vitality. But with a certain increase of temperature, water is transformed into vapour, and so becomes aeriform under the guise of steam. This is emblematic of a spiritual state of being, characterised by a degree of activity and power, whereof no merely corporeal property can give us the slightest conception. As water to steam, so is the body to spirit. Such is a rendering of this emblem as read by the light of analogy.

The circuit of the blood constitutes a repeating cycle of change, like the movement of a planet in its orbit, with which it is, no doubt, in harmonic relation. Cycle and epicycle, whether on the moral or physical plane, are evolved in accordance with the fundamental laws and dominant phenomena of the universe. The remoteness and, we may add, the grandeur of our connexions, transcends everything of which the greatest earthly mind could possibly form a conception. We are related not merely to the earth on which we live, but to solar systems and stellar banks, still awaiting revelation through more powerful instrumentalities than any which the genius of man has yet invented. Diversity of magnitude does not dissever the atom from the sun, each being but a thought of God ultimated into manifestation on the material plane. It need not, therefore, surprise the reader that we say the human pulse beats in profoundest accord with the ebb and flow of oceanic tides, whose rise and fall on a thousand shores serves but to mark on a yet grander scale, the systole and diastole of the heart of universal being.

#### THE NERVOUS SYSTEM.

Through the osseous, the muscular, and the vascular, let us now ascend to the nervous system. This is pre-eminently and especially the appanage of man. The elephant and the ox surpass him in weight of bone and in volume of blood and muscle. The race-horse is his superior in fleetness and the lion in force, but no creature approaches him in the development and complexity of his cerebral convolutions, nor, consequently, in the mental manifestations, whereof, presumably, they are the appropriate organs. He reigns supreme, and without a telluric rival in the sphere of mind. Here, in her

highest province, he is nature's king, the organic lord of terrestrial creation. In advancing to the nervous system, we reach a higher link in the chain of causation than any which has been previously touched. From it the muscles obtain their motor force. Through it the blood is sustained in circulation. By it the very bones are vitalised, and kept in efficiency for their respective duties. Even in this, however, let us distinctly understand that man is simply the apex of a mighty pyramid of structural existence. As the vertebrates are but the fulfilment of a prophecy, clearly written in the steadily advancing organisation of the articulata, so man is but the realisation of a design, for which the quadrupedal mammalia were a preparation. Again, let us repeat that nature is a divine unity—a thought-form of God ultimated into manifestation on the material plane—a mighty whole, whose constituent and interdependent parts co-exist in the profoundest harmony and the most intimate relationship.

As our bones ally us to the mineral and our fluids to the aqueous portion of the globe, so through our nerves we are related to the imponderable forces of the universe. This alone might suffice to determine the relative rank of the nervous system in the grade of organisation. By it we are connected with the finest forces in nature, and through it we discharge the noblest of our functions. Germinal in the radiata, and obviously imperfect in the mollusca and articulata, it is still far from completeness even in man, the highest of the vertebrates. Our blood courses through our arteries with a rapidity and force which may be regarded as equivalent to the average current of our rivers, but it cannot be said that our muscular movements represent the lightning rapidity of imponderable force. Under all circumstances, but more especially when applied to locomotion, even in its highest form, as in the flight of birds, they are essentially mechanical both in means and process. The motor power is no doubt vital force, but the instrumentalities employed, that is muscles and bones, are simply, as already observed, pulleys and levers, themselves subject to the action of gravitation. But the imponderables are not subject to this action, and when developed in sufficient force can overcome it, as in the levitation of ecstasies. Here then we have a gauge of the relative imperfection of the nervous system, even in man. It fails to ally him as a microcosm, to the movements of the heavenly bodies, which, strictly speaking, are not mechanical either in means or process, being effected

by agencies imperceptible to our grosser senses. For the full appreciation of this reasoning, however, the reader will have to wait till the subject is approached from another standpoint, at a more advanced stage of the present work.

We have spoken of the royalty of man as the born monarch of terrestrial creation. He owes this position to the development of his nervous system, more especially in its cerebral portion. The elephant, who was his quadrupedal predecessor, was indebted for his supremacy very largely to bulk, albeit his intellect is the highest of his order, that is, the mammalia without diversely specialised extremities. This superior intellect, however, in his exceptional case, found appropriate ultimatum in that wonderful trunk, a miracle of muscular development, the nearest approach to an intellectual instrumentality ever constituted, prior to the formation of a hand, and showing how vast and varied are Nature's resources under the pressure of manifold necessity. Such a supremacy, however, was predominantly material, yet being embodied in one of the herbivora, it had in it nothing ferocious, tyrannical, or destructive. It was, however, far otherwise with the preceding reptilian reign of the huge saurians, and notably the monstrous Inguanodon. Here violence was enthroned and ferocity personified. It was the rule of ruthless and resistless force, thoroughly armed, both offensively and defensively. It was an all-devouring voracity, the unmitigated selfhood of creation befittingly ultimated in an appropriate form, at whose terrible apparition the remainder of sentient life might well be said to have stood aghast in helpless terror. But although thus diverse, both were reigns of rayless darkness, morally and intellectually. Such monarchs could never be regal hierophants. Under their supremacy creation could only groan inarticulately, and, we may add, unintelligently. It never obtained a priest through whom prayer and praise could become vocal, till the appearance of man. Nay, it never looked forth rationally, that is with an approximative comprehension of law and principle, even on the material creation, till his advent, and this is symbolised in the fact that his supremacy is due to the powerful development of the nervous system, intimately related to *light* as one of the imponderables.

We here touch the keynote of man's psalm of life. He is the light-bringer of terrestrial creation. Lucifer, son of the morning, re-enthroned after many falls, and now appearing as the glorious harbinger of a new day of intellectual splendour.

Other creatures may disport in the beams of the material sun, but he alone of all earthly things shares consciously in the celestial radiance of the spiritual sun. The advent of such a monarch is the greatest sign that time has yet produced. As already observed, we are only in the faint dawn of his great day of power. His ruder races are mere tentative attempts at the production of a true humanity, while his highest existent types fall immeasurably short of the true ideal of man. We may thus perceive that his reign has yet scarcely commenced, so that we are thrown rather on our anticipations than our experience in the formation of any estimate as to its real character. Light is the beginning of creation morally and physically, literally and figuratively, and the reign of man will doubtless inaugurate an era of terrestrial regeneration, whether for the earth itself, or its vegetable and animal kingdoms. It would be mere folly to suppose that we can yet estimate the full result of this rule of the rational and moral elements of being. As the savage is unable to conceive what we have effected, so we doubtless are equally incapable of realising what will nevertheless be readily accomplished by future generations, and, above all, by higher types of humanity than our own. Strictly speaking, no aerial type has ever yet held sway. Saurian and mastodon were equally of the earth, earthy, the one positively destructive and the other non-creative. Now, man, although still at an initial stage of his collective existence, has passed through the destructive grade of kingship as a savage, and the comparatively non-creative as a barbarian, and has emerged, through his civilised races, on the productive and *quasi* creative phase of his earthly sway. But this, like his type, must be still initial, and consequently, weak and imperfect. A king who has not yet assumed his royal robes, a spiritual monarch who is not clothed with light as a garment, can scarcely have attained to the full prerogatives of his exalted station. Man as an aerial type, can never attain to the fulness of his power till he has become appropriately vested and is capable of that form of locomotion, which arises from the predominance of *nervo-vital* emanation over the force of gravitation.

By a very distinguished zoologist and comparative anatomist, Professor Owen, the mammalia have been arranged into four groups, according to the development of their brain, and of these man represents the highest or archencephala, that is,

beings with a ruling brain. This is no doubt symbolised in his erect form, with a spine not parallel but perpendicular to the earth. But this erectness of form is due to the comparatively powerful development of his nervous system, and more especially of his brain, whose profounder relations, as we have already remarked, are solar rather than telluric. It may be noticed that there is an approach to this in many birds and quadrupeds, whose cervical vertebrae, which are more immediately under cerebral influence, tend to perpendicularity. In man alone, however, does this tendency attain to completeness, even the transitional type of the anthropoid apes, only furnishing a near approach to this condition of physical exaltation. Nay, so special is this to the purely, and in a sense, perfectly humanised type, that even the ruder Negro seldom stands with the same firmness of equipoise as the more highly developed Caucasian. Now, this perpendicularity of attitude, though not absolutely final, for nothing is so in this ever progressive sphere of being, doubtless marks the completion of a cycle of evolution, that which, beginning at the worm, or perhaps the monad, terminates in man. All creatures parallel to the earth, indicate thereby, that they are specially under telluric influence. The forces which more emphatically govern them are attached to the earthplane, and it will be found in accurate correspondence with this, that their dominant proclivities are sensuous. Fish and reptiles are notable instances of this. Birds and quadrupedal mammals are at a transitional stage, while man either has emerged or is emerging from the sway of the senses. An erect attitude in any type, implies the dominancy of diametrical as opposed to circumferential influences in its relation to the earth. This, as we have already stated, arises in man from the strength of his solar sympathies, the result of the powerful development of his nervous system, more especially in its cerebral portion. Hence his resumption of horizontality at night and during sleep, when the more positive and energising effect of vigilance has been suspended. With the loss of consciousness, which means, physiologically speaking, the suspension of our higher cerebral activities, the inferior functions resume their sway, and man is reduced not only to the condition of an animal but very largely to that of a vegetable. In other words, during sleep, we become like plants, immobile, though organic dwellers on the earth, in whom assimilation, secretion, and respiration are the pre-

dominant duties, and we may add, growth and repair the chief results.

The erect attitude in man is probably not due simply to absolute or even proportional volume of brain alone, but also to its structure, as being composed largely of the complex convolutions of the superior hemispheres, in other words, to the presence in force, of those portions which phrenologists regard as the seat of the higher moral sentiments and the superior intellectual faculties. Fish and reptiles with their flat brains, are perfectly horizontal in attitude, birds and quadrupeds with their superior brains, stand at various degrees of divergence from this, while man, in whom the moral sentiments and intellectual faculties seated in the median and anterior lobes, are so powerfully developed, has attained to perpendicularity. There is doubtless a profound fitness in this. The merely basilar brain is of the earth, earthy, in its desires and tendencies; and hence, when constituting the sole cerebral endowment of a type, cannot lift it from the ground on which it grovels, the apt organic symbol of its dominant mental proclivities. We are here brought back to the central idea of the present section of our work, namely, the connection between mind and organisation, whereof cerebral structure is an important link.

To understand organisation we must regard it in the light of structure specially provided for the discharge of function. This applies alike to the vegetable, animal, and hominal realms. No plant or animal exists for itself, or even for its kind, alone. It is primarily a part of the organic structure of the globe, and has been evolved for the effectuation of purposes only to be accomplished by such an appliance. Hence the profound significance of all organic types, not one of which has been produced in vain or can be justly regarded as a superfluity. Now these remarks apply to man as well as to inferior grades of being. He is an organic instrumentality of the highest order and most complex and specialised structure which the earth has yet produced. Perhaps we do not go too far in saying that the functions, for the more effectual discharge of which he has been so highly organised and so effectually specialised, are those connected with his moral principles and intellectual faculties. All else that he accomplishes can be as well or better done by the vegetables and animals beneath him. The vascular and muscular systems are better represented in them than in him, so also, in some or other of

their grades, are the functions of respiration, nutrition and reproduction. Had nature only wanted these things to be more effectually emphasised, she would simply have had to evolve other plants and trees, fishes, birds or beasts. But it is obvious these would not serve her purpose in relation to those higher duties connected with the moral and intellectual sphere, which hitherto have been solely the appanage of man. Now this translated into the language of anatomy and physiology means, that man exists, primarily and principally, for the effectuation of those purposes which he accomplishes more immediately, through his superior cerebral convolutions. These are his dominant endowment. Through these, and not by his strength and agility, does he rule the world and maintain a certain measure of kingship over its larger beasts and more enduring trees, the dethroned yet still magnificent monarchs of antecedent eras.

The conclusions thus succinctly stated imply many far-reaching consequences. If man be in truth, the sole telluric form of existence that has yet attained to the rational, moral and *quasi* creative plane of being, and if he hold this position in virtue, more immediately, of his powerful cerebral development, powerful, not simply from volume, but also from more effective specialisation, then this cerebral development, if rightly understood and properly interpreted, will be found as unique as his position. It must be so on the universally admitted principle, that causes are everywhere equal to their effects. Perhaps the reader now begins to understand, why, at an earlier stage of the present work, we dwelt on the important fact that civilisation, with all its implied culture and all its varied resources, must nevertheless be regarded as a natural product of the higher races that have originated it—as much so as the social arrangements of the ant and the bee. It is here that we join issue with those zoologists, and we may add anthropologists, who are opposed to the truth of phrenology. They cannot interpret man's mental manifestations, either individually or collectively, that is, either as a unit with certain special endowments, or as the constituent member of a social polity, and so regularly discharging certain duties in relation to its well-being. They are compelled to regard civilisation as an artificial product and not as an inevitable evolution—in truth, the reflection, or if you will, impress of man's interior nature on his environment. While to the phrenologist, more especially if he be also an anthro-

pologist, civilisation with all its accompaniments and complexities appears to be simply a normal product of the human mind, as that mind is manifested through superior individualities, acting by manifold agencies and for prolonged periods on the higher types of the race.

Thus contemplated, savageism, barbarism and civilisation, in all their manifold phases and gradations, are a very convenient admeasurement of the more immediate causal conditions which have produced them. And thus admeasured, what stupendous brain-power do any of the ancient, to say nothing of the more modern phases of civilisation indicate! In reflecting on this subject, however, let us remember what was said in an earlier part of the present work, that civilisation in its higher departments, is the product of a few exceptionally gifted minds, the remainder being simply the recipients of their methods and ideas. But even to be the intelligent recipients of such vast conceptions and such complex processes, to understand the science, appreciate the art, study the literature, and carry on the government, manufactures and commerce of a great and civilised community, implies a degree of cerebral development on the part of the principal agents, of which ordinary zoologists, when they speak of the brain of the ape resembling that of man, appear to have no conception. It is here that we come to a very important part of the present section on Mind and Organisation, and on which therefore we must now make some additional remarks, we allude to the gradual ultimatum of mental constitution in corporeal structure.

#### MIND IN ULTIMATION.

From our very limited range of observation, and perhaps we may add, our yet more limited capacity for thought, it seems little other than groundless presumption, to speculate on any of the profounder problems of universal being. Confined to the surface of a subordinate planet, which means an infantile sun, in one of the great stellar systems of infinite space, we know but little even of the knowable. While from the cosmic immaturity of our telluric habitat, combined with the merely initial character of our own type, we may be quite sure that our minds are still largely embryonic or at least infantile, even on their own appropriate plane of cognition and reflection. Among other things, we are feeble in deduction and almost devoid of intuition, so that our uttermost efforts

at a solution of the great Sphinx problems of life are, after all, little other than childish guesses at truth. Let us then at least avoid any approach to dogmatism, knowing the liability to error, even of the wisest, when dealing with matters so much beyond their ken. We have already said that creation is Deity in manifestation on the plane of time and space, or shall we say it in all reverence, God as the divine cause, ultimated into His appropriate effects. Now, nothing is more clear than that this is a process still in action, so that it is quite correct to say, this is as much the day of creation as any era in the total past, in other words, spiritual forces are still being ultimated in material results; more especially must this be so in the case of initial types on embryonic planets, like the humanity which is now taking possession of the earth. Our enquiry therefore as to whether man can be regarded as yet fully ultimated, is by no means uncalled for or misplaced, more especially in a work like the present, that does not profess to restrict investigation within the limits prescribed by former writers or the example furnished by organised societies, but which is written with the express purpose of promoting profounder thought not only on subjects within the accepted domain of anthropology, but also on some others, lying at present rather beyond it.

We suppose it is almost needless to say that in a type fully ultimated, any one portion of the organisation will be in perfect congruity with every other. Not only will the alimentary arrangements harmonise with those for locomotion, but both will be the appropriate accompaniment, and we may say, expression of the nervous system, the external figure being the reflex of the internal consciousness. It is thus, as we have already remarked, that in the articulata the body is largely segregated, either into successive rings, or as in some of the winged varieties, into head, thorax and abdomen, each of the latter being so effectually emphasised as to constitute at least a remote approach to an independent individuality, this being the ganglionic stage of the nervous system, ultimated in the coarser portions of the frame. And we would here remark, that it is only the winged varieties, that is the aerial form of the articulata, that can be properly regarded as specimens of this grade of organisation in effective ultimation, the grubs or worms being merely embryonic approaches to the fully matured type. So we have reason to believe that in the ordinary vertebrata, shall we say from the fish to the

lion, the outward form is an apt expression of the interior mind, that mind being, however, more immediately reflected in the brain, and perhaps we may add, the nervous system generally. The only well marked exceptions to this being the initial type of the cetacea, whom in anti-Cuvierian phrase, we have ventured to call lung-breathing and viviparous *fish*, and perhaps we may add, the quadrumana, who are at a transitional stage between quadrupedal brutes and bimanous men. Now why are these types exceptional as specimens of organic ultimation? and we reply, because they are comparatively initial, though by no means so recent or ethnically immature as man.

#### ETHNIC AGE.

This subject of ethnic maturity or immaturity demands far profounder consideration than has yet been accorded to it. We have reason to believe that although birth, infancy, youth, maturity, age, and death attach especially to the individual, they are not altogether unknown to the type of which he is a constituent member. This also, as a product of time and space, must begin and end, going through a cycle of evolution, and decay during the process of transition from its initial to its final condition, that is, from inauguration to extinction. The elements which go to the solution of this problem are often complicated with some others, such as grade in the animate scale, which render the matter somewhat confused at a first glance, but which settle into harmony and congruity after due investigation. Let us illustrate this apparent confusion, and at the same time attempt an harmonic settlement of some of its difficulties.

Few things are more clearly indicative of ethnic maturity or immaturity in a type, than the state of the young at birth—regard being had, as we have said, to grade in the animate scale. Thus, for example, the chick of our domestic fowls is considerably fledged, and can run the moment it is out of the shell, while the young of the raptores, (eagles and falcons,) destined to prey upon it, are callow and helpless denizens of the nest. So calves and lambs are far more active and intelligent at birth than the young of the felidae and canidae, tigers and wolves, constituted to devour them; the former can see, and a few hours after birth, even stand and walk, while the latter are blind, and entirely dependent on parental aid for many days. Now we suppose it is almost

needless to say that the prey, under some form, must have existed, ere the devourer could have been produced and maintained, and here, where there is a comparatively close approximation in organic grade, this fact is clearly evidenced in the more relatively finished condition of their young at birth. But there are types of sentient being immeasurably older than either birds or beasts, as for example reptiles, fishes, and insects, and more especially the latter, and yet whose young are born in such a state of relative immaturity and imperfection, that is with such a want of resemblance to the parental form and functions, that to all practical intents and purposes, their later embryonic life, with its vast modification of structure, has to be transacted subsequently to their birth. Thus, as already remarked, the frog is born as a fish, and some fish are produced as worms, while the entire change from the grub to the papilio is effected after it leaves the egg. The postponement of the later stages of embryonic development, till after the individual organism has been projected into the external world, is apparently due to the inferior plastic power of these lower types of sentient being, in virtue of which the individual mother does less, and the common mother does more than in the higher grades of organic existence.

This is a rather deep subject. Reproduction in all its phases, is the reflex and analogue of the divine and universal process of creation. The individual parent being simply a subordinate instrument for the effectuation of that great result, the renewal of structure and the restoration of function on all the varied and successive planes of organic being. Now primarily, nature is the great mother, and as such, in the vegetable kingdom, takes sole charge of the seedgerm, rearing it to full maturity without any intervention on the part of the tree or plant whence it was derived. To this the multiplication of the lower oviparous grades, who lay their eggs and then desert them, bears a close resemblance. The individual mother at this stage, does little more than provide the general mother with a germ, which the latter, with the aid of her subordinate nurses, the elements, afterwards rears to perfection. In the ant and the bee, we have signs of transition to a higher grade of action, the nursing being here done by deputy, on the part of the barren neuters, in reality undeveloped females. This is the prophecy of and preparation for true incubation which we reach in the bird, whose nest again fore-

shadows, the marsupial pouch, as the latter is a promise of the more highly specialised structure of the true placental mammal. Now in these sequences of organic development and structural specialisation, with the functional aptitudes that accompany them, it is obvious that we are gradually advancing from the general to the individual mother, the former doing less and the latter doing more at each remove in the process of ascension. And it is noticeable that it is not until we reach the placental mammals that the young are produced in anything like a recognisable resemblance to the parental type, the egg having, in reality, no more likeness to the bird or the butterfly, than the acorn to the oak. But even in the oviparous grade there are some marked distinctions, and notably as between the incubating and non-incubating types, the former effecting their embryonic transformations within the egg and the latter without it. We may thus see that the functions of formation and nutrition do not devolve in all their fulness on the individual parent till we reach the mammals, whereof the marsupials are only a preparatory and transitional form. In this, too, as in much else, we have ample evidence how thoroughly initial are all nature's existing arrangements—her highest and latest types being the only even approximative fulfilment of her obvious intentions—revealed, though not fulfilled, in the earlier stages of organic existence.

Even from this comparatively superficial survey, and we may add, succinct statement, of the leading facts connected with reproduction, it is obvious that there is an ascensive movement in organisation and function, in virtue of which the later and higher types are enabled to produce their young in a more advanced condition than the ruder and less specialised. To clearly apprehend the full force of this law, however, we must contemplate its action from the successive planes of structure, where it will soon become obvious that the advance from the seed-bearing plant to the non-incubating insect, and from the latter to the incubating bird, and thence to the viviparous mammal, is effected by a succession of steps in the direction of improved reproductive power, which are in perfect harmony with the progress of the organisation in relation to other functions. Thus, within the sentient realm, the incubating bird, which although, more immediately, it produces but an egg, nevertheless matures that egg so effectually in the nest, that from it there ultimately emerges a being with all its grander embryonic transformations fully accom-

plished: is also warm-blooded, and respire with a freedom and vigour not yet attained even by the highest of the mammalia; while the viviparous mammal is endowed, in addition, with a development of the nervous system, and, in his superior types, with an aptitude for cerebration to which even the bird but remotely approaches. Now, thus adjudged, it is obvious that humanity, which presents us with the highest phase of organisation and function that the earth has yet evolved, should produce its young in a more matured condition than any other type of telluric being. But it does not do so, because the law by which this would be effected, is, in this case, traversed by another, in virtue of which, initial types, apparently in consequence of their ethnic immaturity, are incapable of at once entering on the full prerogatives of their true position. Like other heirs, still minors, men cannot take possession of their allotted inheritance, till they have passed the period of their nonage, and are regarded as adult.

It is here, then, that we obtain an invaluable index, and were we capable of interpreting it aright, no doubt an accurate admeasurement of the degree of ethnic immaturity still attaching to man. The formative power of the mother, as we have seen, gradually increases with her ascent in the scale of organisation, as might be expected from the fact that such ascent implies advance in specialisation, and consequently increase of efficiency in the function discharged. This greater formative power on the part of parents of high organic grade is also in perfect harmony with that other law, to which we have already alluded, namely, advancing internality of function as an accompaniment of general structural development. Thus the tree that respire through leafy lungs, placed at the very extremity of its branches, and is partly nourished through roots that project beyond its trunk into the earth, also turns its beautiful and odorous blossoms to the sun, and ripens their seedgerms in the eye of day, thus glorying in all the successive offices of perpetuation, and transacting them openly, as its noblest duty, in the face of the universe. Then we have the insect and the fish, where alimentation is internal, and respiration still largely external, and who, in accurate correspondence with this partial interiority, are oviparous, but do not incubate. While in the bird, where not only alimentation but also respiration are transacted internally, we have incubation, during which embryonic transformation is effected,

at least, under direct and immediate parental influence, and the young are hatched, not like the larvæ of insects, but in the final form of their ancestral type. And lastly, we have the mammalia, whose physical functions are not only internal like those of the bird, but in whom there is a yet higher manifestation of that cerebration, which implies the advancing development of consciousness, and who, in correspondence with this progressive interiority of being, also transact the totality of their embryonic evolution internally. Now, it is observable that even in this exalted class, the small-brained marsupials, though ethnically older than the placentals, nevertheless produce their young in a far less advanced condition, so that, strictly speaking, they are only a transitional type between the oviparous and viviparous grades of productive being. This inferior plastic power being, doubtless, in perfect harmony with their weaker cerebral development, in virtue of which their mental interiority must be at the minimum of the mammalian grade.

Now, whether we look to man's indubitable supremacy in the scale of organic being, as adjudged either by the degree of his specialisation or his interiority of function, where in force and intensity of cerebration he is altogether unapproachable; in either case we should be perfectly justified in expecting his young to exhibit a maturity at birth unexampled in any other type. But so far from this, they are the most helpless and dependent of all the placental mammals known to zoology. In a sense, indeed, it may be said that humanity has almost retrograded to a semi-marsupial stage, the arms of the mother representing a pouch, in which her feeble progeny are carried and protected during all the earlier months of their existence. Now, such a fact, so exceptional, if contemplated only from the standpoint of man's high specialisation and profound interiority of being, both mental and physical, can only be accounted for by the almost transitional and essentially initial character of his type, which, as we have said, forbids the full exercise of many of his higher prerogatives.

It would doubtless, as yet, be premature to attempt the precise admeasurement of this index. We lack the requisite standards from other types for such an achievement. We know, for example, that the blindness of the felidæ and the callowness of the raptores are indicative of their ethnic immaturity; but the degree of this immaturity cannot yet be definitely stated. Indeed, we are here brought back to that

still larger problem, namely, to what extent are the vertebrates as a whole, ultimated on their own plane, as compared, for example, with the articulata on theirs? This, again, being part of that greater question, the cosmic age of the earth itself as a planetary organism, and with this the relative perfection or imperfection of the constituent parts of its structure, more especially those which contribute to the discharge of its higher functions. Now, we have already shown that there is considerable reason for regarding the earth itself as still infantile, if not absolutely embryonic, and, consequently, its organic, and above all, its sentient classes and orders must be still largely germinal, more especially in their higher forms and later types. Of this, as already remarked, we have an indication among birds, in the raptores, and among beasts, in the felidae, from the very unfinished and feeble condition of their young at birth, a similar characteristic, although under a somewhat different phase, also attaching to man. If, indeed, we may take the articulata as our standard, and are permitted to regard their final emergence from the pupa case, as their true birth, all previous changes and conditions being merely processes of embryonic transformation, then a considerable portion of the vertebrate scale, but more especially its higher orders, must be regarded as ethnically infantile. The beetle and the butterfly are not only beautiful in form and perfect in structure, but they are mature in intellect and finished in stature on emerging from the chrysalis condition into their final form of insect existence. In everything except stature, obviously unattainable under the conditions of birth attaching to more advanced types, we have a very remote approach to this in some of the oviparous vertebrates, as, for example, the crocodile and the already-quoted gallinae. We are here brought to the consideration of what viviparous birth and mammalian nutrition, whereof man is the highest example, really mean, that is what grade they indicate in the scale of being, and of what spiritual endowments and relationships they are the appropriate symbol?

Oviparous birth allies the sentient to the insentient realm of organic existence. The egg is simply the seed of the plant, transferred as a reproductive appliance to a higher form of existence. It is a repetition on the organic of the concentric spherul forms of the cosmic plane. The acorn which the stalwart oak sheds by thousands under the autumnal blast, and the eggs which the expiring insect leaves to

the care of the universal mother, are allied in fundamentals to the sun shining gloriously in mid-heavens, he being also a magnificent example of that approximative sphericity of structure, which as primal and mathematically perfect, will in all probability, for some of the grander forms of being, prove also final. It is, therefore, no wonder that even the highest sentient organisms, are still, in reality, ovoviviparous, the apparently viviparous stage being attained by that gradually advancing interiority of function attaching to superior types, in virtue of which the individual mother is enabled to discharge those later duties in relation to the formation of her offspring, which, among the earlier, ruder, and less specialised, devolve on nature or the universal mother, that is, the material universe as the divine organism everywhere suffused with the pulsing life and pervaded by the plastic power of Deity. This advance, then, from the oviparous to the viviparous stage of reproductive function is a result of the attainment of greater formative force, and indicates, consequently, the exercise of a higher phase of *quasi* creative energy, in truth a nearer approach to the divine nature on the part of the individual mother capable of so exalted a phase of parental achievement. We suppose it is almost needless to say to those who have followed us thus far, that such a merely physical fact cannot stand alone. It must have an intellectual bearing and a spiritual significance, of which, however, it is doubtless only prophetic in the lower, that is the simply instinctive quadrupedal mammalia, its higher fulfilment being reserved for the various species and genera of the rational bimana, of whom, as we have said, existent man is the initial type.

Do we not thus obtain the glimpse of some standard, by which it may hereafter be possible to estimate the spiritual status of the different orders of sentient being? Those that are dependent for the evolution of their young from almost the primal germ or unincubated egg on the kindly offices of the universal mother, must be pronounced inchoate, as being imperfectly specialised in relation to the highest of all corporeal functions. Of course those which have not arrived at the egg stage, but multiply, as in the case of the monad, by simple partition, or in that of the polype, by budding, must be regarded as yet lower, they being, in reality, not yet effectually individualised. Incubation implies a much higher grade of plastic power, although this has not yet been so

definitively appropriated by the parental organisation as to have become an internal function, and so remains an internal act, in which the elemental influences of the universal mother may still be regarded as virtually potent, though acting with diminished energy, and preparing for abdication through the transitional grade of the marsupials; and, accordingly, it is here that we find the singing bird, and that dawn of architectural skill which is shown in nest building, together with a susceptibility to domestication and personal attachment, which combine to demonstrate that the bird occupies a much higher place, mentally, than the fish or the reptile. We have a similar indication among the articulata, in the bee, where the care of the young devolves on the community, by whose neutral workers it is very effectually discharged, and where we find as an accompaniment the social organisation of the hive and the structural edifice of the comb. It is observable that both in the bird and the bee, we have to do with what we have elsewhere defined as an aerial type, that, be it remembered, of which man is an initial form on a higher plane.

From the standpoint at which we have now arrived it is becoming obvious that the oviparous grades of sentient being are merely preparatory, and, therefore, transitional to the viviparous, who alone represent sentient, in the sense of conscious being, under its true aspect of special reproduction, accomplished not so much by the universal as the individual mother. The egg, as we have remarked, is simply a continuation, slightly modified, of the vegetative process of seed-bearing. The true animal, as always a sentient and largely a locomotive and volitional being, should produce its young, not in a merely germinal, but in an organically constituted form. While in its higher grades, as a type of existence endowed with distinctly pronounced consciousness, and more especially as in man, with exalted moral sentiments and a *quasi* creative intellect, the young should have attained to all the grand outlines and many of the organic, if not functional specialities of the parent. We may thus see that the mammal is the only approximately completed type of sentient being in relation to reproduction, all the lower forms being preparations for this more exalted grade. Now, we have already shown, that the quadruped is merely the grub stage of this mammalian phase of existence, its aerial and papilio form being incipiently manifest in man, who must, therefore, be regarded as the pro-

mise of a type of being, whereto the simply organic or vegetal, and the merely sentient or animal are steps, but for whose effective fulfilment we must wait, perhaps, till the advent of another geologic era, albeit from the unexampled rapidity with which savage types are everywhere disappearing, humanity, as we have previously said, seems to be even now in the very crisis of a great transition.

We are thus, then, in a position, if not to very minutely estimate the degree of man's ethnic immaturity, at least to indicate some of the data which must contribute to the solution of this problem in the hands of future enquirers. As the highest and most specialised organism yet developed, and as that phase of existence which has attained to the most profound interiority of function, whether in relation to corporeal structure or mental constitution, he should transcend not only all other mammals, but all other vertebrates in the maturity and completeness of his young at birth. We will not, in thus rather rigidly applying such a standard of comparison, so far depart from the fundamentals of the human type, as to introduce the articulata, although we have previously used them in the way of general illustration. But, estimating man by his nearer correlates, and taking into consideration his admittedly supreme position in the animate scale, we must grant that if his ethnic age is to be adjudged by his infantile condition, he must be regarded as very far short of the maturity of his type. As we have said, he is semi-marsupial. Now, it is observable that his more lasting and emphasised defects are not, as in the case of the canidae and felidae, in the senses, and more especially the sight, the symbol of intelligence, but rather in the organs that conduce to locomotion and the manifestation of physical force, that is, the limbs. In other words, the indications of his ethnic immaturity attach rather to his corporeal functions than his mental constitution, though by no means absent from the latter, as may be seen, analogically, in the imperfection of the senses for some time after birth. Judging by these infantile data, then, we must come to the conclusion that, although man is decidedly immature in mind, many of his higher endowments being yet germinal among his average individualities, he is still farther from effective ultimatum in his body; and if we mistake not, many other facts corroborate this conclusion.

Thus, regarding him as a type destined eventually to emerge

as distinctly from the quadrupedal mammalia as oviparous birds from oviparous reptiles, and we shall at once see that he has already effected this emergence to a much greater extent in his mind than in his body, and, correspondentially, to a much greater extent in his brain, than either in his viscera or his limbs, that is, he is differentiated from brutes far more by his mental constitution than his corporeal structure. So much so, indeed, is this the case, that those whose habits of thought induce them to dwell more on mental than physical characteristics, can scarcely be induced to accept the testimony provided by comparative anatomy of his near relationship to the brute type of creation. We here, indeed, touch the keynote of that great controversy now raging on the hypothesis of development. Humanity, looking within, is conscious of immeasurable superiority to all other types of sentient existence. Nor is this consciousness falsely based or much exaggerated. It is an irrepressible inspiration welling up from the stilly depths, which mere scientific demonstration, with all its ologies, can never reach. Man *feels* that his mind is differently constituted, and so separated by a "discrete degree" from that of the brute, nor will any amount of learned discourse on similarity of bone and muscle suffice to alter this deeply-seated conviction. In truth this renowned controversy is very much like that about the colour of the chameleon, where all were right and all were wrong. The zoologist and comparative anatomist are quite justified in affirming man's structural and functional relationship to the quadrumanous and even quadrupedal mammalia. While their opponents are equally justified in asserting that he is differentiated by mental endowments which place an impassable barrier between him and any other form of being the earth has yet produced. After what has appeared in previous pages, we suppose it is almost unnecessary to say that a true system of cerebral physiology would go far to harmonise the now discordant views of these opposing parties. For, while it is undeniable that man manifests such an approach to the quadrumana, and, in fundamentals, to all the mammalia in the grand outlines and interior structure of his corporeal frame generally, as to show that he belongs to the same great division of the animate scale, yet it is equally true that he has one organic speciality, we allude to his magnificent cerebral development, in which they share so imperfectly as to demonstrate that wherever brain force is required, they must

stand at a point immeasurably below him. We are here then brought to a consideration of the great question underlying the whole of the present chapter, namely, to what extent is man's material organisation in congruity with his mental constitution.

All truth constitutes an harmonic unity. No one veracity ever really wars with another. So in nature, which is but a reflection of the spiritual sphere, there is in reality no discord, though her higher suspend and supersede her lower laws. Hence, to fully understand the relation and interdependence of phenomena, which are nothing more than spiritual forces ultimated into manifestation on the plane of time and space, we must know something of the laws in virtue of which they subsist, and the principles of which they are an embodiment. Now, from this very statement of the problem, it must be at once obvious that a certain congruity between mind and organisation cannot fail to characterise the sentient and, we may add, the rational plane of telluric being; for, contemplated from the causal standpoint, the body is simply an instrument for effecting the behests of the mind, our corporeal structure holding the same relation to our individual consciousness, which the material universe, in all its varied provinces, does to the mind of the Creator. Thus regarded, all structure, whether cosmic or organic, exists for function, although, looked at from beneath, it may seem that function is the effect of structure. Now this ultimatum, whether of the universe as a whole, or of its constituent cosmic cellules, that is, suns and planets, or of the subordinate organic structures of the latter, is necessarily a matter of time, for a material creation, though rooted in the spirit-sphere and proceeding primarily from the Eternal and Divine is, nevertheless, conditioned by duration and extension in the necessary sequences of its manifestation. Hence the importance of deciding on the ethnic age of man, as a means of estimating more accurately the degree of his organic ultimatum, and hence, we may remark, the apparently undue prominency given to this subject in previous pages.

Perhaps our meaning in the foregoing paragraph may be rendered more clear by a few illustrative instances. No one who has studied the organisation and habits of the dragonfly, the eagle or the lion, but must see they are essentially predatory creatures, specially organised for the capture and destruction of the victims destined to supply them with food. Swift

in the chase and terrible in the fight, they are equipped for slaughter as their appointed life work, that which is at once their most intense delight, and yet their dread necessity. It is impossible to conceive of internal conflict in such beings. They are too strongly pronounced, that is, too effectually ultimated, for such interior discord. They are in harmony with themselves. Their instincts do not war with their principles, neither do their impulses confound their judgment. They revel in slaughter, for which they were formed, and they effect it without misgiving or remorse. It is doubtful whether we are yet thoroughly competent to the full interpretation of these terrible hieroglyphs. The all-absorbing unity of purpose which they indicate is something of which we have no experience in our own consciousness. They are organic wholes, though of limited range, structural integers, even if of insignificant value. There is equal unity of purpose and harmony of design, though on a different plan, in the butterfly, the pheasant, and the stag, the beautiful and innocent victims of these terrible and ferocious victors. Bright sunshine and fragrant flowers satisfy the first, whose short-lived reign of summer sweetness constitutes the late reward of grub contentment in obscurity. It is meek humility and expectant faith crowned at length with resplendent glory. It has been specially organised for a life of love and pleasure, and to this it is devoted, wholly and all-absorbingly, not as in self-conflicting man, with half measures and much recalcitration. We can never understand such a being by looking down into the depths of consciousness on the side of experience, albeit in some favoured moments of ecstatic prevision we may be occasionally favoured with foregleams of a bright hereafter, where, in the equipoise of our endowments, we may evolve life into manifestation under happier conditions, and find an environment in harmony at once with our powers and our desires, and so obtain a fitting response to our deepest sympathies and sublimest aspirations in the glorious summer land of the far hereafter.

Now, some such harmony as that whereof we have quoted a few examples, seems to pervade the larger portion of sentient being. The plane of existence may be higher or lower, but there appears to be perfect adaptation in structure and function to the environment amidst which the organism is placed, and where, consequently, its life work must be accomplished. The bird in the air and the fish in the sea,

the reptile in his slime and the quadruped on the land, are obviously at home in their respective positions, whether from mental proclivity or structural adaptation. These harmonic relationships also extend, though perhaps in gradually diminishing force, through a considerable section of the quadrumana. As a transitional type, however, they bear the ever increasing burthen of a great prophecy, namely, the advent of humanity. As tailed monkeys they are at home in the life of frugivorous tree climbers. As tailless baboons they have lost much of the fun and vivacity of their smaller compeers, and seem oppressed with saturnine gloom and constitutional melancholy. The first obviously find their arboreal environment enough for them; the second seem dissatisfied with its solitude, and ill at ease amidst its arrangements. This inharmonic condition culminates in the anthropoid ape, who is virtually *in transitu* from the tree to the ground, neither so qualified as the monkey to dwell in the former, or as the man to walk on the latter. The attitude and movements of the gorilla afford ample evidence of his merely transitional character. Less quadrumanous than the true simiadae, he is not so effectually specialised as bimanae. In mind he is merely a brute, while in general form he is almost a man. The deep and far-reaching significance of this most important fact has never yet been duly appreciated. As a type much older than the true bimana, he must be more nearly ultimated on his own plane, that is, he must be so constituted as to present an instance of greater congruity between mind and body, and also of more equably balanced force, and, consequently, of more harmonious action between the several provinces and members of the latter. Thus, for example, we have reason to believe that his osseous, muscular, and nervous systems are duly related, whether as regards organic development or functional power. So we are justified in affirming that his cerebration, respiration, and alimentation, are so far in equipoise that the over-activity of the one does not interfere with the efficiency of the others. Now, we know both from his structure and his habits, that is, from the smaller weight and inferior convolitional complexity of his brain, evidenced externally in his merely brute-like cranium, as well as from his simply arboreal life, that, mentally, he occupies a totally different place to that of man. The latter is separated from him by the enormous gulph of rationality and moral principle. To the eye of a competent phrenologist this is

sufficiently manifest in the superior cerebral development of man, while it is adequately evidenced to the physiognomist in his facial outline. But what shall we say of the remainder of his body? If the gorilla's merely basilar brain, indicative of a mind utterly devoid of all true ability for the exercise of abstract thought or creative imagination, and equally wanting in susceptibility to the elevating influences of benevolence, veneration, and conscientiousness, has, nevertheless, effectually ultimated itself in his anthropoid type, what shall we say of the closely allied organisation of man? How does this agree with the sublimity of an Æschylus, the profundity of a Plato, or the logic of an Aristotle? and how does it harmonise with the universality of a Shakespeare, the spirituality of a Raphael, or the depth and grasp of a Bacon? Were the minds of these great master spirits adequately reflected in their organisation? Were these vast souls befittingly temped during their earthly sojourn? And if so, then how can we account for the general similarity of the ape form to that of man? We are here, then, brought directly to that great problem, the congruity of man's corporeal organisation with his mental constitution.

#### HARMONIC RELATION OF THE HUMAN FORM TO THE HUMAN MIND.

We are fully aware that in the mere propounding of such a problem, to say nothing of its attempted solution, we are descending to what, from the purely scientific standpoint, may be regarded as unlawful depths of speculation. We are transcending the recognised limits of induction, and on the slender basis of a few ill-defined and, perhaps, misunderstood facts of comparative anatomy and anthropology, endeavouring to rear a superstructure of hypothesis immeasurably too ponderous for so feeble a foundation. We admit the charge and plead guilty to the indictment, knowing that thought must precede action, and speculation prepare the way for experiment. Once more let it be distinctly understood that there is nothing dogmatic in these pages. Their utmost aim is but to afford subject-matter for reflection, and stimulate the reader to further enquiry. The science of man is too recent for precision, either in the statement of its facts or the annunciation of its doctrines; and our present endeavour is rather to enlarge its area, by pointing out where fresh discoveries may be made, than to either rigidly define its boundaries or accurately formulate its conclusions.

A special type of body implies and, in a sense, involves a special type of mind. The leonine or bovine organisation is adequate indication of a leonine or bovine mind behind it. Community of structure implies similarity of endowment. In effectually ultimated types, where the order has been duly subdivided into well-marked genera, and the genera into distinctly pronounced species, as, for example, among insects and birds, this is obviously the case. The range of individuality is here so small as to be scarcely perceptible, except under the peculiarly evocative and almost abnormal influence of domestication. The same remark, though in somewhat diminishing force, applies to beasts, which, as wild fauna, manifest their special identity as much in habit as in structure. But it is otherwise with man. His range of character and endowment is enormous, and such as no existent diversity of racial type or individual speciality of organisation can adequately express or effectually symbolise. Primarily this is due to the fact that his type is still merely initial, and so devoid of those well emphasised demarcations of structure and strongly-marked physical characteristics, which constitute the distinctive features of the several genera and species of older classes and orders of the animate scale. His advent is too recent for the full and effective development of this form of typical specialisation. Granting that he constitutes, as we have endeavoured to show, the initial form of a new class, as distinct from quadrupedal mammals as birds from reptiles, that he is the promise, though as yet faint and feeble, of a type of being, destined to prove their aerial, or, perhaps we might say, their magnetic counterpart, then it must be admitted that in this phase of his organic evolution he is still so immature as to be almost embryonic, for, typically speaking, many of his organs are still altogether wanting, or so faintly adumbrated, as to be scarcely perceptible. Now, a being so profoundly immature in his typical aspect cannot be thoroughly ultimated in his individual organisation, for the one must ever bear a certain proportion to the other. To enable us, then, the better to judge of the degree of his individual ultimatum, that is, of the extent to which his general physical structure is in harmony, more immediately with his brain and more remotely with his mind, let us contemplate him collectively, as a type, obviously intended for telluric supremacy and universality, though as yet only entering on the earlier stages of this sublime inheritance.

Whatever may be the degree of man's ethnic immaturity, it is clear that he has already attained to the mundane stage of geographical diffusion. He is found from the equator to the pole, and seems to be as much at home within the arctic circle as at the tropics. A type so widely distributed cannot be a thing of yesterday, neither is it supposable that a class existing normally under such a vast range of climatic variation can be wholly devoid of at least the germ of special, if not generic diversity. Existent races, then, are dawning species, not necessarily persistent either in their present or in any directly derivative form, for some, perhaps many, or even most of them, may be destined to ultimate extinction, like the first or lower branches of certain trees; but, nevertheless, they are at least the promise and indication of other and allied, though more strongly pronounced species yet to come. Now, in attempting to estimate the degree of their relative development as typical variations, the foreshadowment, if not the virtual beginning of the well-marked genera of the hominal realm of the future, we must remember that this realm is aerial in relation to the quadrupedal mammalia, of which it is a higher evolution, and from which, as already observed, it is separated by the discrete degree of rationality and moral principle. Now, judging by the papilio and bird forms of inferior divisions of the animate scale, the special and generic diversities of the aerial province of mammalian life, should be more distinctly pronounced than those of the terrestrial. In other words, the range of structural and mental diversity in man, when his type has attained to the ethnic maturity requisite for a full and effective manifestation of its higher characteristics, will be greater than among the mammals beneath him, though that range be from the elephant to the mouse, and from the lion to the sloth. We grant that this is a most stupendous conclusion, and for which neither the general public nor the world of science is at all prepared. The real question for consideration, here, however, is not how far such a conclusion may be acceptable, but to what extent it is veritable and demonstrable?

This important question of man's ethnic maturity is separable into that of the type collectively and that of its subdivisions, consisting of its so-called races with their several varieties, and its manifold nations or polities, with their respective orders and castes, not omitting even its distinctly-

marked individualities, who, however apparently isolated and exceptional, are always related, nearly or remotely, to some typical group, past, present, or prospective. From this merely preliminary statement, it must be obvious that the subject covers a large area of thought and knowledge, and cannot be treated either partially or superficially. It is a topic pre-eminently demanding both grasp and depth for its due elucidation, and the present endeavour to throw some additional light on certain of its provinces should be regarded as purely tentative and suggestive, and not in any measure as authoritative and exhaustive. In the orderly and natural sequences of such a subject, the human form in the abstract, claims legitimate precedence over any of its subdivisions or varieties, and to this accordingly we will now direct the reader's attention.

The organic fact that man stands erect, touching the earth only with the mere extremities of his inferior members, is an indication, cosmically speaking, that he is largely, if not predominantly, solar in his superior attributes and higher relationships. The horizontal worm and serpent are pre-eminently of the earth, earthy. While even the quadruped with his anterior extremities constantly applied to the ground for the purposes of locomotion, necessitating approximative parallelism of the spine, and the reduction of the thoracic almost to a mechanical level with the abdominal viscera, is still obviously under the preponderating rule of purely telluric influences. The fact, however, that his head, together with the cervical vertebrae, tend, in certain species, as also among birds, of whom more anon, to a *quasi* perpendicularity, is, doubtless, indicative of advancing solarly, both of mental and physical constitution. But, nevertheless, his fundamentally grub and reptile, or as we have elsewhere phrased it, terrestrial relation to a higher, that is a more aerial mammalian type, is adequately evidenced in the general parallelism of the trunk and fishlike prolongation of the spine as a caudal appendage. Man's exceptionally erect attitude, then, is indicative that in him alone the sentient type of being has attained to that relative perfection and maturity which consists in its having passed through a cycle of pre-determined change, and arrived at that qualified termination, or shall we say, strongly emphasised stage of progress, which permits of another beginning, or rather the commencement of a new epicyle. As we proceed it will be found that there are other

indications of this relative completeness in man, who is, in truth, the incipient fulfilment of the mighty promise folded up in all inferior types, but finding adequate expression only in him.

In such a work as the present, the very title of which suggests that the rigid limits of merely inductive investigation will be often transcended, for the purpose of introducing suggestions and speculations, which science could scarcely sanction, but which, nevertheless, spring naturally out of the subject-matter of our enquiry, we must not omit the attempted interpretation of that higher symbolism which is ever involved in the facts of nature, lying behind this mystic veil of lower truth, like the soul of man within the comparative opacity of his corporeal envelope. Man's perpendicularity of attitude, then, symbolises, in the first place, the fundamental and, we may say, absolute rectitude of his being. He is based in perfect equipoise, standing erect at right angles, to the line of terrestrial parallelism. Hence his higher aspirations are all virtually celestial, and he must eventually tread everything that is of the earth, earthy, beneath his feet. But this perpendicularity of attitude itself arises from his interspheration with solar as opposed to merely telluric influences, this progressive interspheration with the material source of light and glory, being indicative of the advancing intellectuality and spirituality of his inner nature, in virtue of which he is more and yet more intersphered with the spiritual fount of life and thought, the central sun of universal being.

We have said that in the nearly horizontal quadruped the thoracic and abdominal viscera are virtually on a level, the relative dignity of the former being thus indicated, not by superiority, but only anteriority of position. But it is otherwise in man, whose erect attitude provides for the disposition both of his internal and external organs, in strict accordance with their grade in the scale of function. His magnificent brain with its exalted cerebration, is the crowning glory of the organic edifice. His thoracic viscera for effecting respiration and circulation, together with his admirably specialised anterior members, follow next in the order of their dignity and in due relativity of position. And lastly, there are the abdominal viscera for nutrition, secretion, and the inferior functions of the animal economy, placed in the lower portion of the torso, whereto the posterior limbs, used merely for locomotion, are also attached. Have we not here another indica-

tion of the important truth already alluded to, namely, that man is the fulfilment of an organic prophecy, folded up, but not fully expressed in the inferior types of sentient being?

Let us now advance to another characteristic of the human form, equally indicative of the same truth; we allude to the perfect liberation of the limbs from the trunk of the body. Our arms and legs are fully born. They project clearly from the trunk, indicative, symbolically, of proportionate freedom in the sphere both of thought and action. It is otherwise with brutes. Their limbs are largely buried in the body, an infallible sign of the imperfect development of their mental constitution, devoid at once of range and freedom. Now, the human form is, in this respect, simply the brute form fully unfolded, or shall we say ultimated. Such powerful bones as the humerus and femur contain the promise of their own eventual liberation. In truth, a quadruped is simply a four-limbed vertebrate in the process of evolution, more advanced than the fish, but less pronounced than the man. It is only in the latter that the fundamental, or shall we say, divine idea, on which the type was constituted, attains to perfection, all inferior grades of this great division of the animate scale being more or less remote approximations towards its fulfilment. We may thus see the necessity of occasionally contemplating typical groups as relative wholes, whereof species or even genera are but the constituent members. It need scarcely be said to the reader who has gone with us thus far, that the entire universe must be thus regarded, if we would rightly apprehend either the relation of its several provinces to each other, or of its totality to the Creator.

The relative completeness of the human form as respects the limbs, is still farther evidenced in their effective specialisation as locomotive and constructive instrumentalities, with extremities anatomically constituted for the performance of their respective duties. The foot and hand are pre-eminently human, in the sense that no other type presents organs where the anterior members are so evidently the outcome and expression of the intellect, and where consequently they are so thoroughly divaricated from the posterior members, devoted wholly to locomotion. The bird has wings and legs, but the former are simply locomotive agencies specially adapted for action on the atmosphere. They are purely thoracic in position and relation, deriving their stupendous force from

respiration rather than cerebration. This fundamentally thoracic and respiratory relation of the organs of flight is seen most clearly in insects, where the wings are simply an expansion of the lungs. But to the zoologist, gifted with anything approaching to insight, it is equally evident that the wing of the bird is also radically and essentially thoracic in position and respiratory in relationship, though muscular in action, its especial pulmonic connection being evidenced by the fact, that, in certain species at least, respiration extends to the hollow of the bones. The continuity of organic type is not easily broken, and in the fact that an eagle can breathe through the severed bone of his wing, it is, perhaps, possible to see a remote connection with the structure of the dragonfly, whose wings altogether are simply an extension of his pulmonic organisation adapted to the purposes of flight.

In this as in much else we see the essentially transitional and preparatory, or shall we say, prophetic character of the quadrumana. Their purpose in creation seems to have been the evolution of an approximately human type. As the limbs of inferior classes and orders of the vertebrata are more especially devoted to locomotion, those of the quadrumana are essentially prehensile, though even through this functional aptitude, radically and fundamentally locomotive, under arboreal conditions. But, as a preparation for humanity, their particular province seems to have been the development of the hand. So strongly has this proclivity been manifested in them, that anterior and posterior members are alike furnished with an extremity that wants only an opposing thumb to constitute, at least, an approximately typical hand. More immediately, no doubt, this manual phase of evolution may be regarded as due to the prehensile necessities of an arboreal type. Mammals constituted to live in trees must be formed to climb them, and a creature organised to exist principally on fruit, should be able to pluck and convey it to his mouth. But the grander movements of nature are not merely immediate adaptations to existing requirements, they are also an organic prophecy of advents yet in reserve. It was so with the extremities of the quadrumana, they foreshadowed the true human hand, and with this, the magnificent membral specialisation of humanity generally.

A vast province for enquiry is here opened up to the speculative zoologist. What is the place of transitional types in the animate, and, indeed, we may say, the organic scale?

What is their essential character, and what end do they more especially subserve in the general economy, and we may add, the grander evolutionary processes of nature? Such an enquiry is not wholly foreign to the purpose of the present work, for man himself, as we have already observed, is so merely initial as to be almost transitional. Judging by the geological record, then, transitional types seem to be comparatively temporary agencies in the great process of organic evolution, employed to bridge the gulph from one distinctly-pronounced structural form to another, and thus, as halting between two diversely-constituted organisms, and so devoid of the relatively perfect adaptation of either to a particular environment, they are emphatically and inevitably transient. Thus, as between fish and reptiles, the ichthyosauri and plesiosauri have long since wholly disappeared. So have those partially-feathered reptiles that foreshadowed the advent of birds. And now as between the latter and quadrupeds, we are witnesses of the gradual disappearance of those incipient mammals, the marsupials, that have become extinct over the entire area of the old world, and are represented by only two species in the new, and which yet, with the exception of man, constitute the sole mammalian type native to Australia, where, nevertheless, their doom is sealed by the advent of placentals from without. Now, as between the quadrupedal and bimanous type of sentient existence, the quadrumana are, beyond question, the connecting link, and as such transitional, and so mortal. The ape, like the dodo, will soon become a thing of the past, while the existing savage will be entombed with the cave-men, and then humanity will stand moderately well emphasised in its bimanous, and with this its rational and moral speciality.

We have connected the bimanous and the rational, not incidentally, but of design. The mental endowment and the physical structure co-exist as cause and effect, or rather as spiritual force and its operative instrumentality, that is, as we have said, the hand is the intellect ultimated in the organisation. Such a structural fact, however, could not stand alone in a state of organic isolation. When effectually developed, as in man, the hand must constitute an harmonic part of a larger whole, that is the human organism in its entirety. The thoroughly-specialised hand implies, because it necessitates the equally-specialised foot. And both imply a brain of such volume and contour, and characterised by such convolutions, as have never, even remotely, attached to any merely quad-

pedal or even quadrumanous type. The hand, as we have said, implies the foot, and both together constitute that unique form of specialisation which consists in the anterior members being purely operative and constructive instrumentalities for effecting the behests of the intellect, while, conversely, the posterior are devoted solely to purposes of locomotion. Such a distinctly-marked divarication of the extremities implies, because it is the effect of, an equally emphasised functional divarication of the upper from the lower brain, whereof man alone is fully susceptible. And here, then, we are brought to a definition of the essential character of the extremities of the quadrumana, which, strictly speaking, are not *hands* in the psychological sense already defined, as being intellectual instrumentalities, but simply prehensile *paws*, that is organic adaptations for the convenience of brute existence, under arboreal conditions. We are fully aware that some of our comparative anatomists may object to this rather summary way of disposing of a controversy, which they would prolong by an appeal to the scalpel and learned talk about the phalanges; but we tell them that in any dispute as to the essential character of an organ, its function is as important an element in the decision as its structure, and that sentient organisation will never be fully understood until it has been contemplated throughout from the psychological standpoint.

The last sentence involves a great principle, applicable not merely to anthropological and other immediately cognate enquiries, but, in a measure, to every province of scientific investigation. Let us clearly understand that the entire universe exists for its uses. As we have said, it is the divine organism, every portion of which, from the largest starbank to the minutest animalcule, subserves a definite purpose in the great economy of being, so that structure, whether cosmic or organic, can never be fully understood until regarded in the light of function, that is, in relation to the duties which it discharges, and for whose effectuation, in reality, it subsists. We do not expect these views to be immediately accepted. They are not in accordance with the spirit of a material age, that likes to look up from beneath in place of down from above on the grander problems of existence, attempting their solution from the sphere of effects rather than of causes, and not seldom, indeed, confounding the former with the latter.

It will be at once seen that if there be any truth in the foregoing view, the human organism is in an especial manner

the befitting subject-matter for such a mode of investigation as that to which we have been alluding. It is the only tabernacle of rationality and morality within our ken. After this fashion has mind, the only mind existing on the plane of thought and principle we have ever known, been vested to our senses. Thus, and thus alone, has the exalted spiritual element, whereof we are conscious in humanity, found organic ultimatum. The mental power dwelling in any other organism we can know only by outward observation; but that inhabiting the human frame we can cognise by the profounder process of consciousness. We can contemplate man from within as well as from without, and interpret him, not simply from his actions, but also by his thoughts. Thus, in a certain sense it may be said that we can thoroughly know no other type of being, for all alien grades we must, perforce, view through his medium and from his standpoint.

But to return to our more immediate subject, the membral specialisation of humanity. We know as a fact that, in the lower races, this is not final, for it has advanced very perceptibly in the Turanian as compared with the Negro, and in the Caucasian as compared with the Turanian. Not only is the foot of the Negro flat, with a projecting heel, but his hand is also rudimentary—like his brain. In the Turanian, with his more powerful cerebral development, although the instep still wants elevation, the heel is not so strongly pronounced, while among his more civilised divisions, such as the Chinese and Japanese, the hand is often spatular, though seldom psychical. In other words, the powerfully basilar and large lateral brain, so clearly indicative of vigorous, executant faculty, has ultimated itself more effectually in the upper than the lower extremities, perhaps because the former are nearer to, and so more under its immediate control than the latter. It is not till we come to the Caucasian that we find the arched instep and elastic tread, combined with the constructive, artistic, or psychical hand, indicating that this is the only type in which humanity's higher moral and intellectual attributes, have attained to anything like effective ultimatum in all the extremities just as it is the only type in which they have been approximately reflected in the countenance. But even here what a vast range of individual diversity do we find, extending almost from the rudimentary to the psychical, indicative of the fact, that even in the highest existent race, effective ultimatum is the exception rather than the rule. Are we not

thus brought back through the minutiae of organisation, to the conclusion broadly stated in the earlier pages of the present work, that humanity has hitherto advanced through the labours of its exceptionally gifted minds, who have originated the ideas whereof the masses have proved simply, and not seldom, indifferently receptive.

We here strike the key-note of some important conclusions respecting the prevalent racial types of man, whose physical aspect and organic structure represent, for the most part, communal rather than individual endowment. This, like much else of which we are now treating, is rather a deep subject, and as yet but imperfectly illustrated either by our best observers or profoundest thinkers. That there is a typical mind, as well as a typical structure, may be held as demonstrated. As between the diverse genera, or species of brutes, this, as we have already remarked, is quite clear. Nor can it be otherwise in man, down even to his minuter varieties and subdivisions, with all their distinctly marked castes, had we but the insight to thoroughly fathom them. It would be quite premature to attempt the pursuit of such a subject exhaustively in the present state of anthropological science. We know too little either of the mental endowments, corporeal structure or physiological functions of the different races of mankind, to enter deeply into the relations of the one province to the other, so that our utmost efforts in this direction can eventuate only in lucky guesses and plausible speculations. But such a phase of inquiry, however superficial and unsatisfactory, is not altogether useless and unnecessary. It is the normal precursor stage to better regulated processes of inductive investigation. Let us remember that action must be led by thought—a law of progress from which even experimental science is not exempt, many of whose grandest discoveries were the legitimate, if not the immediate result, either of bright intuition, or deep and earnest reflection.

As regards typical characteristics in mental constitution and physical structure, there is—firstly, the human mind in the abstract, more or less befittingly reflected in the general outlines and internal arrangements of the common human form, attaching to all the various divisions of men, however otherwise diversified. Then there is the racial mind, reflected with more or less of precision in the racial type. And lastly, there is the caste mind, perceptibly ultimated to a keen observer in the caste form. Now, of necessity, the first dominates the second,

and the second dominates the third, and all more or less dominate individual specialities as they are reflected in the individual organism. Perhaps the last phrase demands at least explanation, if not correction; for, as we have already remarked, there is, strictly speaking, no absolutely exceptional individuality, every man, however exalted morally, or richly gifted intellectually, or conversely, however debased or imbecile, being a constituent member of some special confraternity, characterised generally, whether as regards endowment or deficiency, strength or weakness, in body or mind so like himself that all may claim kindred with him. This subject of apparently exceptional individualities demands far more attention than it has yet received. Even absolute monstrosities, as we know, obey a law, being simply instances, more or less emphasised, of arrested embryonic development. It is not of these extreme cases, however, that we are now speaking, but rather of those examples of typical deterioration on the one hand, where members of a Caucasian community are nevertheless characterised by rather strongly pronounced Turanian or Negroid features, or of typical exaltation on the other, where their mental and physical characteristics altogether transcend the average standard either of their own family or even of the nation or race to which they belong. Our criminal types are instances of the first class, and, anthropologically speaking, may be regarded as cases of Atavism, that is, of return from an elevated and well developed type, to the rude ethnic root, whence it aboriginally sprang. And there is no doubt that, by a careful study of these unfortunate beings, we may ultimately arrive at some reliable conclusions as to the antecedent ethnic conditions of the race by which they are produced. Thus, as we have already remarked, the low Aryan commonly tends to a Turanian type, while conversely, the low Semite tends as generally to a Negroidal form, their diversity in this respect being due to the ethnic specialties of their remoter ancestry, of Turanian and Negroidal origin respectively. As a detailed example of the manner in which this principle may be applied, we may cite the Irish peasantry of Connaught and even of South-Western Munster, as presenting ample evidence, in their strongly marked Negroidal features, of a Moorish or at least African relationship, being in this the opposite of the low caste English, who are as obviously semi-Turanian. Spaniards, with a Moorish or Kabyle taint, may have im-

planted the one, and Saxons, with a Slavonic admixture, the other, though for aught that can at present be authoritatively said to the contrary, each may be simply an outstanding remnant of some primæval type, once in an antecedent geologic age, on its appropriate habitat in this now alien area. Such cases of antique typical perpetuation, however, where continuous from generation to generation, and characteristic of a caste or neighbourhood, are not, strictly speaking, instances of Atavism, but simply of rather belated Ethnic evolution. It is where the example is rather individual and exceptional, that it is strictly a case of Atavism, as this is understood in anthropological terminology.

But instances of ethnic deterioration, however interesting, or when properly studied, even instructive, are of far less moment than those of exaltation. The former show us what the race has been, the latter indicate what it will be. The miserable heads and faces of a group of executed murderers in any extensive collection of phrenological casts, will adequately exemplify the first. The busts of ancient and the portraits of modern men of commanding genius, will appropriately illustrate the last. It is with these we have now to do. What are they? Whence come they? And whither do they tend, in the practically unending ethnic futurity of our ever advancing and progressive humanity, during the countless ages of the earth's coming cosmic development? Are they simply favourable accidents, or the legitimate promise and first-fruits of a higher type yet in reserve? We have no hesitation in regarding them as the latter. They are the forerunners of ethnic advents yet to come, and hence arriving before their time, find few brethren to welcome them, or aid in the labours to which they are devoted. If types of deterioration reproduce the past—then, by parity of reasoning, types of exaltation foreshadow the future; and if, strictly speaking, there be no absolutely exceptional individuality in the former, neither can there be such an isolated phase of existence in the latter. If there be any truth in this view, the masterminds of time will begin to loom out upon us with new interest. They are not only great in themselves, and also of unspeakable significance for the thoughts they have uttered, the discoveries they have made, or the achievements they have accomplished, but also as cheering indications of the grand hereafter of our common humanity. They would be this even to the ordinary reader and the general thinker.

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