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BY

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(This paper is the substance of the Lecture of Dr. Laycock's course, introductory to his nosological arrangement.)

If asked "What's in a name?" one might fairly answer our knowledge of the thing named. Certainly, the primary meaning of the word seems to imply as much. "There is a petrified philosophy in language," Professor Max Müller remarks; "and if we examine the most ancient word for name, we find it is *nâman* in Sanscrit, *nomen* in Latin, *namo* in Gothic. This *nâman* stands for *gnâman*, which is preserved in the Latin *co-gnomen*. * * * Nâman, therefore, or name, meant originally that by which we know a thing." And since we know a thing by its qualities or attributes, it follows that all nouns or names "express originally one out of the many attributes of a thing, and that attribute, whether it be a quality or action, is necessarily a general idea. * * * * The fact that every word is originally a predicate, that names, though signs of individual conceptions, are all, without exception, derived from general ideas, is one of the most important discoveries in the science of language."* I have quoted these sentences because it is necessary that we should know exactly what we are about when giving names to morbid

* 'Lectures on the Science of Language,' p. 368. I learn from Professor Aufrecht, of this university, that the Sanscrit word is also held to mean memory, or knowledge by memory.

mental states, whether they be of disorder or defect. They are meant to express as accurately as may be, our knowledge of those states. Hence it follows that naming is no mere ingenious exercise of the intellect, but a procedure of the greatest practical importance. Our knowledge is not only thus generalised, but also rendered easily applicable to particular instances. A single word may in this way indicate either attributes, or qualities, or the series of events known as causes and effects. In naming mental diseases and defects, this method has been long practised. Thus the ancient term melancholia indicates both the characteristic physiognomy and the then supposed cause of a form of insanity in which there is morbid pain of mind. But the term *phrenalgia* of Guislain, meaning morbid mind-pain simply as differentiated from *neuralgia*, or morbid body-pain, is obviously better because it indicates the leading fact, attribute, or quality of the thing to be named. Of course the scientific form of the term differentiates the morbid mind-pain of melancholia from normal or ordinary painful feelings. And while the term indicates correctly the chief condition of a group of mental affections, it implies no theory or false fact, as is implied in the term melancholia. For there are persons who are melancholic who have rather a ruddy than a swarthy complexion; and when swarthiness is associated with morbid mind-pain, it is not always or even generally of bilious origin, but is commonly a melasma, and to be distinguished from an icteric tint. "The spleen" is another of those etiological terms which imply both a painful mental state and its cause, and is equally vague as melancholia. All such etiological names whatever are clearly open to the objection that they can hardly fail to be more or less erroneous since but little is known of the essential causes of many mental diseases; as, for example, of melancholia. There are a few great divisions, however, to which the etiological principle is applicable. Thus mental defects may be classed according as they are primary—that is, due to congenital defects in organization and function; or secondary—that is, consecutive to certain other morbid states occurring in a previously healthy brain. To the class of primary defects belong idiocy, partial or total; to the secondary belong amnesia, or loss of memory, dementia, and moria or folly.

The legal or parliamentary terms are altogether unscientific. The phrase "a person of unsound mind" is very vague, and is applicable to almost any form of mental disease of a chronic kind, as mania and moria, or to impulsive or paroxysmal disorders of the appetites, sentiments or judgment. The synonym "an insane person" may be held as applying more particularly to mania with incoherence; but it may be extended to any form of moria and mania in which the conduct is manifestly absurd, and the conversation irrational. The term "lunatic" originally marked a paroxysmal form of mania and its cause, but as lunar influence is not now re-

cognised we take the idea implied, and use the word to designate those cases of mental disorder in which there are paroxysms of maniacal excitement, and periods either of remission or intermission of the morbid state. The periods of intermission are known as "lucid intervals." The phrase a "fatuous person" seems to indicate an individual who is incapable of thought and understanding, either from congenital defect or from some disease of the brain, as acute mania, inflammation, epilepsy, inflammation, tubercular disease; or, in short, defective nutrition from any permanent cause. The phrase is synonymous with "dement," or even "idiot." Properly, however, an "idiot" is a person who from birth, or at least very early infancy, has been without understanding, and more or less defective in the sentiments, emotions, and instincts. A true idiot is incapable of instruction and self-control; otherwise, he is rather an "imbecile." Between complete idiocy and slight imbecility there is, however, every conceivable degree of defect.

How, then, shall we proceed to secure a more definite terminology? A further brief consideration of the mental process by which we acquire and retain our knowledge will facilitate the attempt. In naming a thing, the first step is to distinguish or differentiate it from all other things: this is done by a twofold process. Whenever we observe a thing, we also determine whether it be like or unlike other things previously observed; or, in logical phrase, ascertain its resemblances and differences, and then place it either apart or with others; so that the process includes both comparison and classification. It is undoubtedly instinctive, and is the method by which all knowledge is acquired from the earliest exercise of the mental faculties. Thus the white child, which, seeing their resemblance to its father, generalises or classifies all white men under the term "papa," would specialise a black man by his difference in colour from "papa," and either class him with some other thing that it had observed to be black, or place him apart, as a man, and give him a new name, such as "black papa." We can follow no other method in the nomenclature of mental pathology, so that it is necessary, before we can say of a man that he is an imbecile, to have a clear idea for the purpose of comparison of what constitutes mental soundness and completeness. Since, however, we distinguish things differently, accordingly as we use qualities or actions for the purposes of comparison and generalisation, there thence arises an important difference in the processes adopted. Qualities, such as colour, form, and the like, indicated by nouns, are not necessarily variable; but actions, indicated by verbs, do necessarily imply change. Now, in discriminating mental disease, we take actions or conduct for our chief subject-matter, but in noting mental defects, we rely upon form as well as conduct, whether it be of the body generally, or of the head and face in especial. Hence, there is a

primary necessity to differentiate mental diseases from congenital defects, and degrees and kinds of both from each other.

It is obvious that in ordinary experience nouns or names expressive of things, and verbs expressive of actions, must continually be invented, as things and actions become more numerous or better known; and thus a language grows as experience and knowledge increase. This principle applies equally to all the sciences, which are nothing more than experience systematised, so that in proportion as any science whatever is extended, its terms or names multiply or are varied, and a language of the science is created. All the true sciences, therefore, have a terminology or language which is perfect in proportion as the science is perfect, and which changes rapidly in the rapidly progressive sciences. Lavoisier first systematised chemistry by giving it a nomenclature, yet we are told by high chemical authorities that the student of chemistry must be prepared for a new crop of systematic names, and a new classification of elements and compounds, every ten years, so rapidly progressive is the science; and I venture to say that, with a larger science, the time has come for a change in the classification and nomenclature of mental pathology.

Unscientific persons, especially if they be learned, generally betray an ignorant impatience of these scientific languages; for although usually based on Latin or Greek, the terms do not teach, but only indicate scientific ideas. Feeling their ignorance, these persons impatiently demand that the man of science shall express his knowledge in plain English, which really means, shall use terms that shall enlighten them. But they forget that this is impossible from the inherent qualities of our mother Anglo-Saxon. Originally it expressed nothing more than a rude experience, and is, and always has been therefore, too poor and unpliable for this purpose; German is the only language of the group which seems capable of scientific development. So that even the recent applications of science to the arts are designated in England by Greek and Latin terms, as *telegram, photograph, terminus, gradient,* and the like. In process of years these words become familiar, as many other terms have already become. For even the most elementary and popular of the sciences, as grammar, arithmetic, and mathematics, are not only designated by familiar names derived from the Greek, but are expounded by means of terms, which are only not considered learned because universally taught. Lindley Murray's English grammar opens with the sentence, "Grammar is divided into four parts, orthography, etymology, syntax, and prosody." Of these eleven words, there are only four purely English; of the six names or nouns, five are Greek and one Latin, and the one verb, too, is Latin; yet every English child has to learn them.

It is, in truth, by the want of a scientific nomenclature that the

defects of a science are best shown, and I think nothing more conclusively marks the true position of mental science and mental pathology than the confused state of the nomenclature or terminology of both, and the serious errors to which it gives origin. Perhaps the best illustration of this statement is to be found in the fact that the highest legal authority of this country, Lord Chancellor Westbury, applied the general term insanity alike to mental disorders and mental defects, when legislating on them. Indeed, so little are the nature and value of scientific terms in mental pathology recognised, that by a large and highly educated class of Englishmen all the terms which are used by mental physicians to distinguish particular kinds of insanity, such as homicidal, suicidal, and the like, are contemptuously designated "jargon." It is plain that nothing less than the most profound ignorance of the subject is implied in this repudiation of technical terms. As to mental diseases, those persons are very much in the position of the infant in relation to men, when it generalises every man under the term "papa." If this ignorance of the subject had no bad results, it would require nothing more than a passing smile; but it is, in truth, of great moment to truth and justice, for the same persons who contemptuously designate the terms of our art and science as "jargon," are also eager to subject insane persons to ignominious punishments, and even to death. We may trace some of this ignorant impatience, however, to prejudices of education, and to the peculiar systems of mental science which have been long current; for while the phraseology of these false or at least insufficient systems has infected the terminology of medicine with their own faults of vagueness and error, the physiological science of the physician has been too often in conflict with the speculative science of the metaphysician.

Too much has also, perhaps, been expected from science. For it must not be concealed that however solidly a system of mental science may be settled, the subject-matter of it offers inherent obstacles to the formation of a satisfactory terminology and classification. The phenomena to be observed, compared, and classified, are most recondite. Comparison and classification imply that there are sufficient standards with which a thing may be compared, and its resemblances and differences thereby determined. Now, what are the current standards of comparison in metaphysics, or mental physiology and pathology? I fear they are at best only vague, general ideas, formed without much regard to scientific accuracy or to these inherent obstacles. It would be as difficult to state, in words, what constitutes mental soundness or completeness, as it confessedly is to state what constitutes mental unsoundness or defect. And so soon as we endeavour to fix these standards, we discover that there is a state of existence at which the limits between health and disease vanish, so that the two classes of things to be compared are found

to intermingle or be continuous. This continuity of phenomena constitutes, indeed, an almost insuperable obstacle to any exact statements of the things comprised in the names or terms which designate actions or events, or predicate things of which these are the chief attributes.* I observed lately, in the 'Times' newspaper, a leading article on the legal meaning of the word "privilege," in which this difficulty was amply shown. I believe language would fail to define absolutely what is instinct or what reason; and I can affirm, confidently, that the naturalist is unable to state, beyond cavil, what characterises a plant as distinct from an animal. In medicine we find the same difficulty with the words health and disease; nay, we cannot define, in unexceptionable phrase, what life itself is. An illustration may be useful, in showing this important principle more clearly, for it is of very great practical importance. We can define mania or insanity to be a disease characterised by disorder of the intellect, but without coma or fever; I do not know a better or more comprehensive definition; but, be this as it may, so soon as we apply it or any other possible definition practically, we are met by the undoubted and most important fact, that during the first stage of certain kinds of insanity, that is to say, when the transition from healthy to morbid action has begun, and the disease is the most curable, there is, in truth, no disorder of the intellectual faculties, but only an exaltation, indicated by increased activity and power. Insanity is, in this respect, like all other diseases, in which we recognise successive stages; it differs, however, from all others in this, that the law attempts an absolute definition of the word in terms of the widest generality, but which can only apply to one stage of the entire course or series of actions of a particular kind of insanity, and not applicable, therefore, to most or all kinds.

Since, then, absolute standards are impossible in the nature of things, and our standards of comparison must always be relative, let us inquire further as to the kind of relations which must constitute their essential elements. Now, obviously, the present state of a man is in relation to his past state; when, therefore, we affirm of any person, previously healthy, that he is insane, we compare his morbid state with his previous condition. In other words, in every mental case to be considered there is a standard of comparison proper to the individual. Such a standard is, in fact, instinctively set up by us all, whenever we predicate of a man that he has any disease whatever, for the very term implies differentiation from a previous state of health. If we further analyse this standard as applied to the naming and classification of mental diseases in general, we find it includes attributes or qualities of the individual in common with others of the same age, sex, race, or social position.

* See this question discussed in my work, 'Mind and Brain,' vol. ii, part 5, chap. iii.

Some persons perpetrate eccentricities which, if done under other circumstances or by others of greater solidity of character or position, would indicate unsoundness. And so, also, with the conduct and customs of races as well as ranks. Tattooing of the face is a perfectly legitimate decoration with African and Malay races, but if practised by an European man or woman of fashion, it would excite grave suspicions of mental disorder or defect. Now as to these general standards, it may be said that inasmuch as they represent the average of the age, sex, and race to which the individual belongs, they imply a general knowledge of the mental conditions and qualities of the sexes, and of ages, races, &c. Persons, however, often make mistakes by confounding one standard with another; for example, for the mental condition and diseases of infancy and childhood they set up a standard of adult life.

The two attributes of age and sex modify fundamentally our standards. It is quite true that there are mental diseases common to all ages and both sexes, but it is equally certain that there are also special forms. Age means as to both sexes evolution, development, and nutrition, and therefore includes some of the most fundamental ideas of life. Sex implies a group of fundamental differences between man and woman, which extends to all mental disorders whether they predominantly involve the appetites, propensities, instincts, emotions, sentiments, or intellect. A knowledge of feminine, as distinct from masculine human nature is consequently included in all sound standards of comparison.

There are, however, general ideas of health and disease which are common to all mankind, and which enter therefore into all our standards of comparison. These ideas specially imply a knowledge of those corporeal and mental states which are of a transitional character between health and disease. Chiefest amongst them is the sleeping condition. Although most essential to health, and most healthy when most complete, it is, strictly speaking, not health, but a negation thereof in relation to activity; so that we may truly say that from a third to a fourth of every day of a man's life is occupied by a state of existence which is relatively morbid. Whether, as Sir H. Holland thinks (with others), there be no sleep without dreaming, or whether we conclude with the side which Lord Brougham takes, that we dream only in the transition state between sleeping or waking, the general fact remains the same. Dreaming is a sort of normal insanity; so that, as Cicero long ago remarked, if men could do in sleep what they dream, every man would have to be bound down when going to bed. Hence it happens that some of the most difficult cases of insanity, in a medico-legal sense, are associated with this sleeping state, or with an analogous condition, and that in truth, every morbid mental state is more or less modified by it.

A class of conditions common to many individuals, but less

general, may be mentioned, as involving minor or special standards of comparison. In the adult female, the menstrual, gravid, and parturient periods, are ordinary or physiological states of health; yet, like sleep, are closely allied to morbid states, and have to be so considered in all observations of the sex, for the purpose of generalisation and comparison. It is probable, however, that analogous periodic changes occur in the male; and that the term lunatic has originated in the observation of monthly paroxysms of disorder thus arising. Other conditions of a more decidedly morbid character constitute a transitional group between diseases and defects in general and mental diseases. These diseases are usually classed as complications, and are for the most part, directly or indirectly, encephalic. Epilepsy, hysteria, hypochondriasis, chorea, hemiplegia, general paresis, and other paralytic affections, are of this class and constitute a transitional group, in common with various congestive and other affections of the encephalon, in which the phenomena are more purely mental, as somnambulism, delirium, spectral illusions, and fixed ideas, conjoined with that peculiar state termed *enthusiasmus* by Vogel, in regard to religious ideas, but which is common to all kinds of mysticism.

Old age is a state of natural defect in nutrition of the body generally and closely allied to disease, from which the cerebrum is not exempt. Hence a class of senile disorders and defects of the mental faculties, and the need of a standard of comparison in which the natural or normal infirmities of age is a chief element. And it is to be remembered that the number of years lived is not the proper basis of the standard, but the average extent of degeneration and decay which advancing age brings. So that there may be a premature old age, or a prolonged vigour of mind far beyond the average. The cerebral degeneration which characterises old age is analogous to the defect in nutrition of the cerebral tissue which is induced by various forms of disease, such as atheroma of the vessels, softening, chronic or acute affections of the membranes, and the like. It is to be classed with the pareses and paralyses. Infancy and childhood are not so much related to disease as to defect; they are amongst the imperfections of development; when, therefore, we speak of old age as second childhood, it is because there is the imbecility of the unformed brain in the senile organ.

Mental defects, as differentiated from diseases, especially those which are congenital, are to be classed with defects of evolution. Now, congenital defect and degeneration imply a standard of perfection as to both evolution of function of brain and of form of body, or, at least, of the head and face, and a classification of defects and degenerations with reference to some general idea of perfection. This kind of standard of comparison is based on the attributes of a complete adult of a given race; with us it is the European; more spe-

cifically, and less accurately, perhaps, the Greek. It is to be observed, however, that this is a wholly ideal standard; and being such we require to know the principles of the Ideal on which it is constructed; or at least something definite as to the measurements and proportions which make up the whole standard, or of those of the principal parts, as the head and face. It is obvious that the varying *opinions* of men as to a perfect Ideal can form no scientific basis of comparison, and that nothing short of geometrical truth can really serve the purpose. I know of no standard that comes up to these requirements, except that which my friend Mr. D. R. Hay has worked out.*

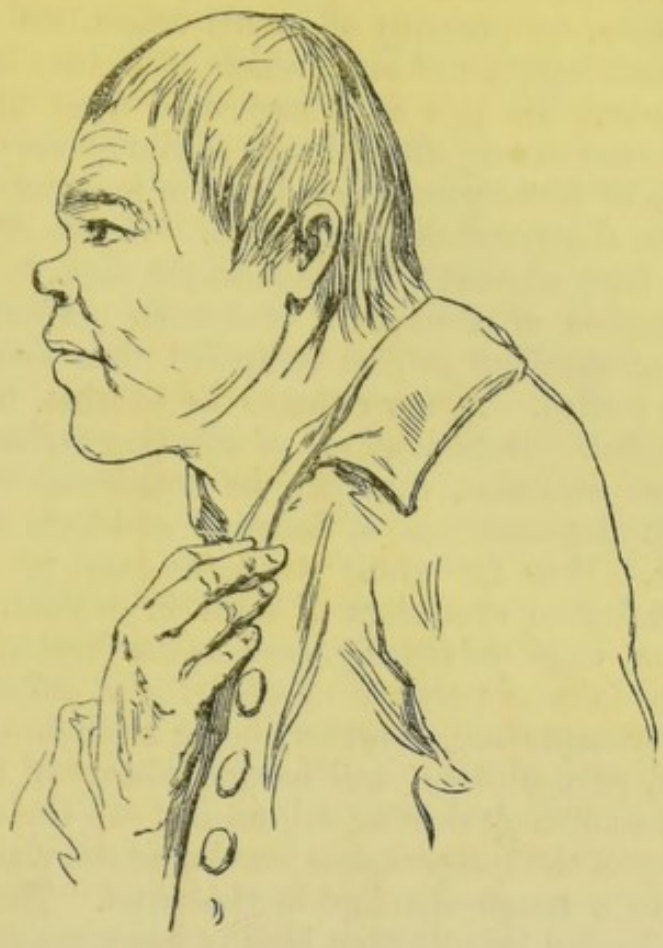
Standards of male and female European heads geometrically evolved (D. R. Hay). The necks are not accurately rendered, being in the original a dissection showing the muscles.

The departures from this standard may be two fold: First, as to the race itself, and be manifested by age—that is, in the progress of the individual from imperfection towards maturity; or, in other words, there may be an arrest of mental development. In this case the adult man manifests the characteristics of the child or youth. But secondly, inasmuch as the European passes during uterine and infantile life through stages of form which are the adult characteristics of other races, as the Mongolian and African, the defect in

* 'The Science of Beauty as developed in Nature and applied in Art,' by D. R. Hay, F.R.S.E., &c. &c.

development may be manifested more or less in adolescence or adult life by Mongolian or African characteristics of mind, brain, and countenance. It is to such a class of degenerations that we can refer a goitrous cretin, with the oblique Mongolian eye, figured by Alibert.

It is very obvious, however, since there are varieties of race, that if we adopt an ethnic standard at all, we must have a *series* of ethnic standards to which we can refer the corresponding ethnic degenerations. Practically, such varieties occur. Thus the degeneration of the European characterised by evolution of the lower jaw and change of angle and by malproportion as to the other facial elements, is a well-marked and common kind. It is seen especially in endemic cretins, not only in mountainous countries where goitre prevails, but in the poverty-stricken districts of all parts of Europe, whether in the large towns or in the remote agricultural districts. These I have designated poverty cretins; their approximation to the Negro or Malay type is matter of common observation. But there is another class I designate luxury cretins, who manifest degeneration in quite a different direction. The lower jaw recedes, and it is the mid-face which projects and is evolved out of proportion to the other elements of the countenance, giving a bird-like appearance to the



Swiss cretin (Sir R. Carswell).

physiognomy. These have been called "spoonbill" idiots, or imbeciles; they have their extreme type in cretins like the "Aztec" microcephales.

'Aztec' children, from a photograph (Dalton's 'Physiology').

The small head badly developed in both the occipital and frontal regions, the receding lower jaw, the monstrously long nose, short

upper lip, lobeless ears, and projecting upper maxilla of these two cognate idiots, are probably of ethnic origin, and belong to some of the American varieties of man, which again may be related to allied Asiatic races. Be this as it may, such *types* of degeneration are not uncommon among those classes of Europeans who have not only the means of healthy existence, but the luxuries—to indulgence in which the degeneration seems due. Hence the term "luxury cretin" I have adopted to distinguish the class.*

The question of a standard of human perfection with which all varieties of mankind can be compared thus arises and must ultimately be settled. A few remarks as to what it should comprise may be useful. Degenerations of function exclusively, in the sense of defective evolution, can only be manifested by actions or attributes, but degenerations of function and form are manifested by characters. How far ethnic standards may be attained, founded on morphological characters of form in general, such as zoology supplies, or, more restrictedly, such as the form of skull, or of face, or size and form of portions of either, it is difficult as yet to say. Various attempts are, however, being made in the direction of the ethnology, palæontology, and natural history of man, and we may hope that something definite will result. In the estimate of mental deficiencies of the congenital or developmental class, we have already attained to a rough standard of this kind. Thus, a microcephale, that is, a human being with a head of less circumference than seventeen inches, is an idiot. But any standard based upon the measurements of the skull exclusively, or on the relative proportions of its various elements, can only have a limited application to mental pathology, because the condition of the soft parts of the head and face, and more especially of the ears, nose, and lips, as to development, must always constitute important points in a morphological standard of this kind. Nor, even if the morphology of the unclothed skull were thoroughly elucidated, would it be possible, when the cranium is clothed with living tissues, to observe those cranial differences and resemblances which might be associated with differences and resemblances of function of the contained brain. This remark is more especially applicable to the researches of Professor Virchow and Professor Huxley into the varying proportions of the osseous elements of the base of the skull; the former having noted them in cretins and idiots, and the latter in various races of men and in lower animals allied to him. If any great general law of cerebral evolution and development, and therewith of mental endowments, were finally evolved by this kind of research, no matter how true, there would be always, I apprehend, this obstacle to the practical application of it to mental pathology.

* See my lectures in 'Medical Times and Gazette,' March 1, 1862, p. 207; and 22nd March, p. 287, where the etiology and characters are discussed.

In forming a common ethnical standard there is another very important fact for consideration—too often overlooked by archæologists and palæontologists—in the circumstance, that the osseous proportions of the head and face may be the same in men of different races, and the differential ethnic characteristics be shown exclusively in the development of the soft parts. Mr. Hay has demonstrated this point very admirably, by clothing a skull of the same geometrical proportions with the hair and lips characteristic of such different races as the European and Negro, the European thus appearing of a degenerate type.* In constructing a general standard, therefore, which shall meet the needs of the mental physician, it is obviously necessary to combine the evolution of the soft parts with that of the osseous framework of the head and face; and it is, I think, only practicable to form such a combined standard by means of principles applied to the evolution of an ideal type of perfection of both the skull and the tissues covering it. Now, such a standard of perfection as regards the human form may be found in the geometrical laws of development which Mr. D. R. Hay has worked out as laws of the Beautiful, and of which there are examples before you. These are of the Greek type, but Mr. Hay's principles apply equally to the head and face of the African and Mongolian races, and even to those of Europeans of bad types, for these are produced by certain modifications, according to fixed principles of the geometrical proportions of the ideal type or standard of perfection.† By these geometrical proportions all relative disproportions of special or particular parts of the head and face may be estimated, as well as of the whole.

Man, however, is so placed in nature, being at the head of the animal creation, and yet a part of it, that the defects and degenerations of which he is the subject may be brutish as well as ethnic; and thus we have brute-like idiots, characterised by their resemblance in certain attributes and qualities to lower animals. The occurrence of such brute-like men is established on satisfactory evidence, and I therefore place this kind of idiots separately, in a class designated theroid.‡ Now, if we conceive such human beings to be born of both sexes, with merely animal instincts, but with health sufficient for the needs of existence in a climate favorable to life, and exercising the merely gregarious instincts of humanity, there are the conditions for a race of creatures which would con-

* The reader is referred to the lithographs annexed to this paper, and to the description of them given therewith for conclusive illustrations of this important fact.

† Compare the numerous illustrative plates in Mr. Hay's 'Science of Proportions of the Human Head and Countenance,' 4to, 1848. I have availed myself of Mr. Hay's kind permission to copy any of these, and give lithographs of eight of the one hundred and twenty figures in his plates.

‡ Θήρ, *fera*; εἶδος, *forma*.

stitute a link between man and the lower animals. They would be produced, not according to a law of evolution, but of retrocession. That whole tribes of men may degenerate in a less degree under conditions unfavorable to nutrition and development, is one of the most certain facts in medicine and philosophy.

The law of tissue-degenerations which I adopt in my systematic course of the practice of medicine as well as in this, for the classification of these kinds of facts, is very simple. It is that in the diseases and defects of man there re-appear modes of vital activity which are normal in lower organizations. Thus, in the degenerations of the blood of man the normal types of the blood-corpuscle of the lower vertebrates appear as the degenerate white corpuscles of leukæmia; and the abnormal production of uric acid as urates in certain diseases has its counterpart in the normal production in birds and reptiles. So also with other morbid products, as sugar, glucose, starch, fats, oxalic acid, and the like; that which is morbid in man is normal lower down in the scale. Not otherwise is the law of cerebral functional activity and mental qualities. In early childhood, in mania and "moral insanity," in imbecility, and in dementia, there is a morbid manifestation of appetites, instincts, and propensities, which are normal in lower animals. The stealing and hoarding propensity, for example, seen as a disease in man, is the characteristic propensity of the magpie tribe. By this principle we can classify large groups of mental diseases and defects, and at the same time lead the way to a more thorough comprehension of those deeply rooted laws of development and evolution which connect the vital activities of humanity, whether mental or corporeal, with all the manifestations of life in nature.

But, after all, forms and functions are not the essences of living sentient organisms. These arise out of that directing and upholding force which may well be termed mind-force, and which, as I have shown elsewhere, operates to the evolution and development of things from or out of the One and the General to the Many and the Special; so that all those varying states of consciousness which, as morbid states, occupy our attention, may be referred to a teleological principle of evolution and development, as sure as that morphological principle which the philosophical anatomist adopts to guide him in his researches into forms of organisms. According to this principle, all our highest faculties and sentiments are differentiations and evolutions of instincts and desires which are represented in the lowliest organisms by the most simple and most general vegetative instincts.* Such a principle is not easily applicable to mental science, because of the wide knowledge of living nature needed for the comprehension of

* Compare the statement of this doctrine, and its illustrations, in my 'Mind and Brain,' vol. i, part 3; and vol. ii, part 4.

it; but I venture to say that it will throw light on morbid mental states just in proportion as it is comprehended and applied. From this point of view we see how important to Art and Practice are the most transcendental inquiries of the palæontologist, zoologist, and physicist.

This mental or ideational differentiation and evolution has probably its limits, as to human nature at least, but facts are not wanting in mental pathology to show that it extends occasionally in individuals beyond the average development of the highest intellects of the highest races. It may serve, therefore, to make this summary more complete scientifically, if I include a class of cases of special mental activity in which there is an aberration from the average mental standard, and, in a practical sense, disorder, but as an exaltation or higher evolution rather than degeneration. If this morbid activity be manifested in the world of ideas, and especially by an instinctive perception and performance of things which belong to the æsthetic faculties and sentiments, it is the development of genius, so called. In persons of this class, while the ideal evolution is to a higher stage or grade, the cerebral tissues are apt to lag behind, and disorder and disease thus arise. The "infirmities" of genius have long been recognised popularly; they undoubtedly demand a place in a scientific classification of mental diseases and defects. They are aberrations from the standard of common sense, but must be measured by a standard of their own. That they do not stand alone, but belong to a group of abnormal conditions, is deducible from the phenomena of natural and artificial somnambulism, or electro-biological, hypnotic, mesmeric, or other states, however named. In these states, persons of ordinary endowments are found to be æsthetically capable of things which were impossible to them in the normal condition. Sometimes, indeed, this happens in ordinary sleep. I had lately a patient who sings in his sleep without knowing it, and who knows nothing whatever of the songs he sings, and cannot sing at all, in fact, when awake. It is not surprising, then, to find that many of the highest examples of genius and mental power were the subjects of epilepsy, spectral illusions, hallucinations, and even of morbid states bordering on insanity. The chief characteristic of another class of this group of mental disorders and defects is the absorbing study of the mystical, that is, of intuitions of hidden and awful forces and of the strangely impressive notions thence arising, so that at last ideas are evolved and take possession of the man (or become "fixed") which are of a wholly abstract kind, and altogether out of relation to things or realities. These various mental states are definite enough for a name, and I have therefore generalised them as *enthymia*.*

* Ἐνθυμια, *cogitatio*; from ἐν, *in*, and θυμὸς, *animus*.

It is obvious that all these relative standards of comparison represent general ideas, and, as such, may serve as the basis of a classification around which mental diseases and defects may be grouped. We have, first, the general idea of mental disorder, disease, and defect, long expressed by the word *vesania;* then the subordinate groups, as modified by personal habits, diseases or complications, age, sex, race, and original conformation, which latter may be made to include temperament and other special characters of evolution and development. And this leads us to the consideration of another point, namely, the differentiation of mental diseases and defects in general, or, in other words, to the construction of what is termed a nosological classification. Whatever method we may adopt in constituting a nosology, the differentiation of morbid mental states must follow the same law as of the normal, for persons of sound mind differ from each other and from themselves in mental qualities just as much as those of unsound mind. A classification of these differences (as well as of resemblances) in the mental states of the same individual at different times, and in individuals when compared with each other, has often been attempted, and, I believe, it is now admitted that a complete or unexceptionable arrangement is impracticable. This must consequently be also true of any arrangements of morbid mental states; I shall not, therefore, discuss the various psychological nosologies which have been attempted, but would refer to the systematic treatise of Messrs. Tuke and Bucknill for a useful inquiry into their relative merits.* I am satisfied that the differentiation of the normal mental states which has been arrived at by the common sense of mankind is the only arrangement at present available to science, with such corrections as are needed for greater accuracy and comprehensiveness. The terms appetites, instincts, faculties, feelings, emotions, sentiments, imaginations, notions, and judgment (including in that term the faculties of observation, attention, memory, comparison, and classification), are all sufficiently expressive of distinct modes of consciousness and action. If the corresponding morbid states be as accurately named as circumstances will permit, all is done that is practicable, however short of completeness. To this end, however, it is necessary to have as clear a notion of the things with which we have to deal as is possible.

It is, I think, obvious that, fundamentally, the phenomena we have to observe, compare, classify, and name, are twofold, viz., states of consciousness and actions. But then both these are phenomena of life, and of the living man. The so-called spirit-world and souls considered as separate from terrestrial organization are utterly beyond scientific inquiry. To attempt the investigation of these matters

* See also various articles in the 'Journal of Mental Science.'

would be as useless as if the physicist were to attempt to investigate the laws of the forces of matter, without regard to matter. As I shall specially examine what is meant by the term consciousness, I need only say now that all states of consciousness whatever concern us, whether they be simple corporeal feelings, that is to say, states of consciousness the causes of which, are referred to some part of the body, or more purely mental, in which, although the seat of the vital change upon which they depend is the same as those of the corporeal feelings, there is no reference to the body whatever. For every sensation, impulse, desire, emotion, sentiment, thought, and volition of man on earth is associated necessarily with some change in the body, without which it cannot be experienced. This is the fundamental truth of our system, and must guide all our procedures. Now, the seat of those vital changes which correlate mental states is within the cranium, or in the structure known as the encephalon. Hence the phenomena we examine are vital phenomena of a special kind.

Another fundamental truth is, that all the phenomena of which we take cognizance are due directly or indirectly to forces of matter, and these special vital phenomena to that modification of them I have designated mind-force. But a difficulty meets us at the outset when we set about investigating the laws of this force, for, being hidden from our view, we cannot observe the results of its operations. These are known to us, nevertheless, directly by the changes they induce in the consciousness, and indirectly by the actions which coincide with and follow them. And the obstacle is not so great nor so peculiar as it appears, for it is common to all researches into the operations of all the forces of nature, inasmuch as whatever we know of these is the ultimate result of their action on the same encephalic tissue. And it is clear, too, that the primary or essential phenomena of electricity, chemical affinity, heat, light, and even gravity, are just as much beyond the reach of observation as those of mind; it is always the secondary results we observe and classify. There is an important difference, however, in favour of mental phenomena in this respect, in the fact that they are in immediate relation with our consciousness, whereas those of all other forces are only in mediate relation.*

It is to be carefully remembered that whatever we may *know* consciously, all we can *observe*, in the ordinary sense of the word, are actions. No man can observe the states of consciousness of another; he can only infer them from the actions of the man (in which language is, of course, included), as compared with his own as a standard. But hence arises a great difficulty in inquiry, for there is no necessary connection between states of consciousness and actions; the actions may be purely reflex, or automatic, even when

* See this question discussed in my 'Mind and Brain,' part iv, chap. i, vol. ii.

expressive of ideas or notions, as in speech, or in "spirit" writing and drawing; on the other hand, the thoughts may never be manifested by actions. Nor, as to his own conscious states, can a man know with absolute certainty at a given moment whether he was conscious or unconscious at a certain past moment, for to this end a reminiscence is necessary, and the reminiscence itself is dependent on the bodily condition at the two moments. It is therefore by no means certain that persons, when under the influence of chloroform, are wholly unconscious, for the action of the drug may have been simply such that memory and recollection were abolished, but not consciousness. This is the more probable from the fact that in certain morbid states there are alternations of mental activity, such that there is only reminiscence when the brain is in a condition like that in which the previous state of consciousness occurred. In short, the laws of memory and recollection must be borne in mind in determining questions of this kind. There is another difficulty in the way of observing states of consciousness. A man may be fully convinced by what appears to be a true act of reminiscence that he experienced some particular state of consciousness at a given past moment, and yet the conviction may be wholly false; for it is matter of common observation that in certain morbid conditions of the encephalon these apparently true reminiscences of past states are mere hallucinations and delusions, and have no other foundation than the morbid state itself. In short, the only sure principle for our guidance is that all our states of consciousness and all our actions are alike necessarily coincident with vital encephalic changes. It is therefore the order of these vital changes which we aim to know, and how disorder and defect arise. One word is necessary as to another source of fallacy. Much stress is laid popularly, and even by mental physicians, upon motives. Now, these belong to the states of consciousness termed desires, and, like all other mental states, can only be deduced from actions. The fears and hopes which coincide with the desires termed motives may be all concealed, not only by language, but by other actions, and often are, in fact, so concealed and simulated for the purposes of deception by both sane and insane. Expressed motives have their value in medicine, however, but only as correlative with vital states; or, in other words, insane motives must be traced to cerebral disorder and effect to be valid as facts.

I have only to observe, finally, that these remarks, as to the naming and classification of mental disorders, diseases, and defects, are, *mutatis mutandis*, equally applicable to their diagnosis; for the process termed diagnosis is nothing more than the determination what name and what position in a nosological classification shall be given to a case under observation. So that in sound principles of naming and classification we have the best guides to accuracy of diagnosis.

EXPLANATION OF THE GEOMETRICAL PLATES.

The lithographic drawings in illustration of Professor Laycock's lecture are reproduced with the author's kind permission from Mr. Hay's work 'On the Science of those Proportions by which the Human Head and Countenance, as represented in works of Ancient Greek Art, are distinguished from those of ordinary Nature.' 4to, 1849. Blackwood and Sons.

Figures 1 and 2, Plate I, (figs. 2 and 3 of Mr. Hay's Plate III), show the geometrical evolution of a "severely classical" female skull. Fig. 1 shows the profile evolved geometrically from a right-angled triangle, or the half of a square, being that on which the most perfect forms are constructed. Its angles measure 45°, 45°, and 90°, respectively. The perpendicular and base are the semi-diameters of a circle, and bisect the cranium proper perpendicularly and transversely. The second triangle is the scalene triangle constructed within the circle, and its angles measure 30°, 60,° and 90°, respectively. Taking its sides as semi-diameters, an ellipse is described, the major axis of which runs perpendicularly through the face, and the minor across the face through the orbits. The two curvilinear figures thus evolved are necessarily in proportion to each other, because of the symmetrical proportions to each other of their angles. Let it now be supposed that they represent the two solid bodies, which a revolution upon their vertical axes would produce, and there results a form composed of a sphere and a prolate spheroid, so united and integrated, that the circumference of the sphere passes through the centre of the prolate spheroid. "These two bodies," Mr. Hay observes, "thus proportioned and united, represent the typical form of the human head and face as it arises from the combination of the elements of geometric beauty. The organs of sense may be proportioned and arranged upon the facial surface agreeably to the same laws, the reader bearing in view that the surfaces of the curvilinear bodies, in whatever aspect they may be represented, are understood to be referred to a plane —the only way in which any form can be depicted on the retina." The major axis of the ellipse is the common perpendicular of the remaining three chief *facial* triangles. The base of one of these runs across the zygomatic process, of a second across the upper jaw along the roots of the teeth, and of a third along the crowns of the teeth of the lower jaw. They are all in harmonic ratio to each other and to the fundamental triangles.

Fig. 2, Plate I, shows the geometric proportions of the base of the skull. In the original, the vertex and front face are delineated geometrically in like manner. The same harmonic proportions, it is to be understood, also regulate the evolution of the neck, mammæ, trunk, and extremities.

Figs. 1 and 2, Plate II, show the geometrical skull of figures 1 and 2, Plate I, clothed. In fig. 1, the organs of sense and cutaneous tissues are put on simply; in fig. 2, there is an application of Greek art.

Figs. 1 and 2, Plate III, show the geometrical evolution of the African skull, and of the degenerate European. In fig. 1, Plate I, the major axis of the ellipse, or oblate spheroid, is parallel to the vertical axis of the circle or sphere; but in proportion as it inclines to the latter a lower typical form is evolved. In fig. 1, Plate III, the spheroid is drawn at an inclination of 27° to the sphere, which Mr. Hay conceives to be its natural limit in man. Fig. 2, Plate III, shows the relative position of the parts which make up the base of such a skull, and which may be compared with fig. 2, Plate I.

Figs. 1 and 2, Plate IV, show the inclined skull of fig. 1, Plate III, clothed with the cutaneous tissues and the organs of sense, according to the African and European type respectively, and demonstrate the difference of type which a difference in the soft parts alone may indicate.

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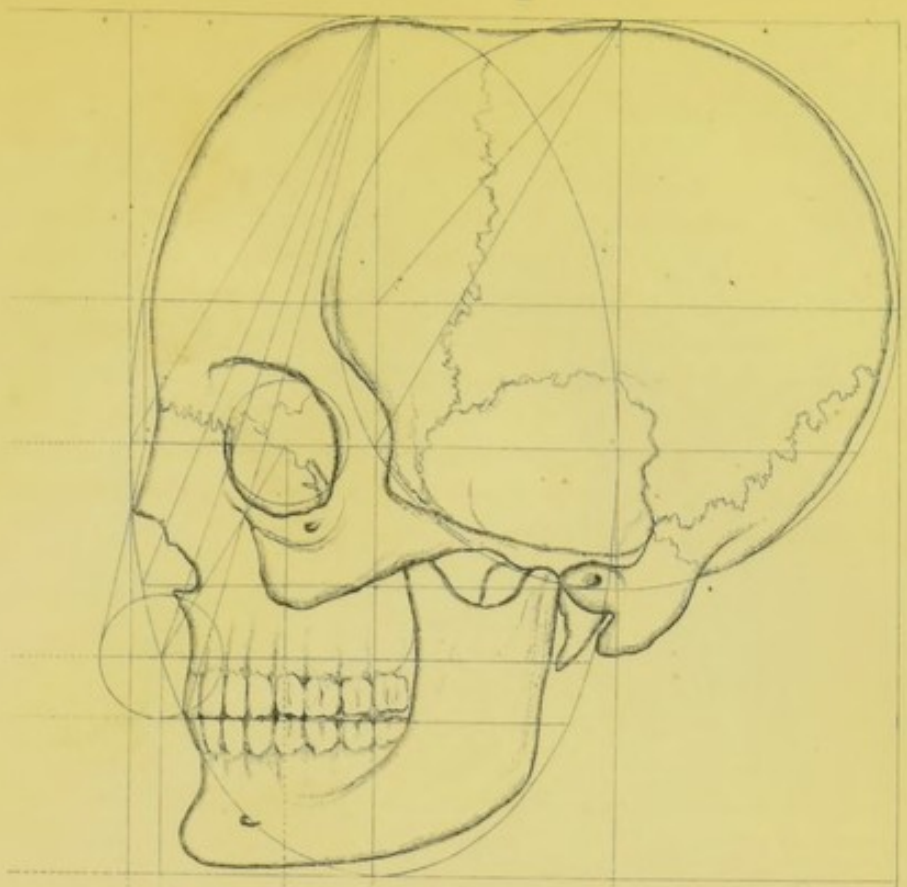

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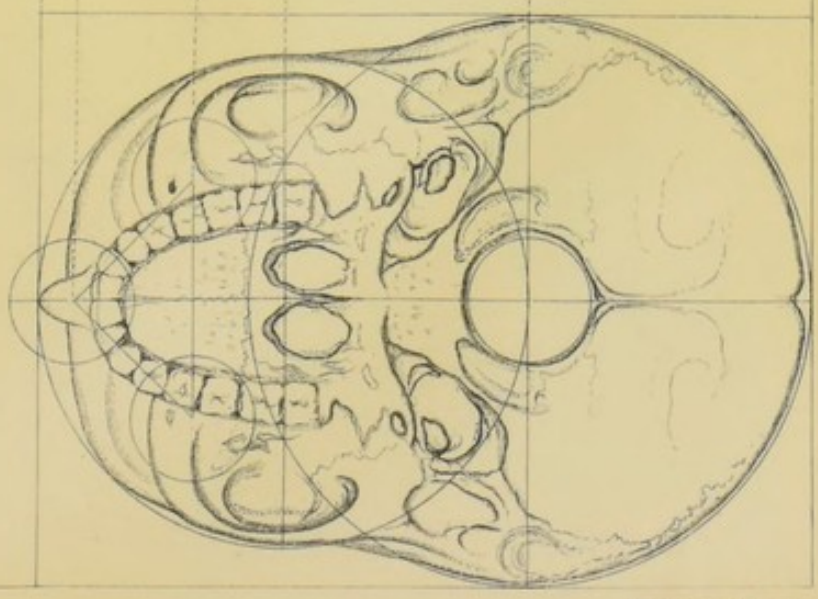
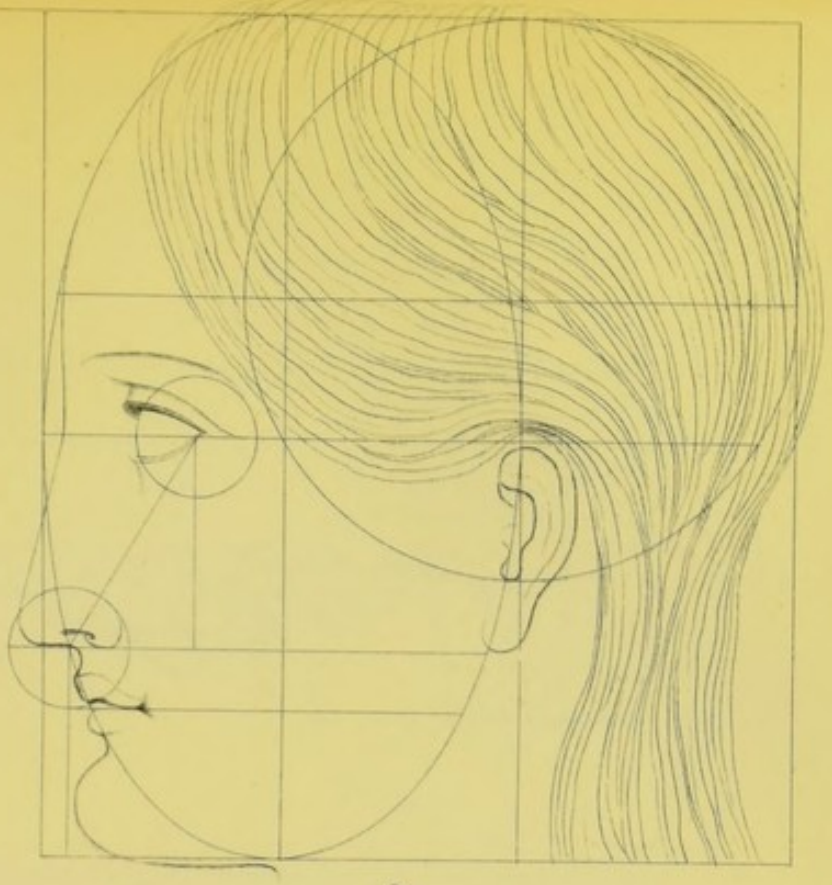


W. Forrest Sculp.



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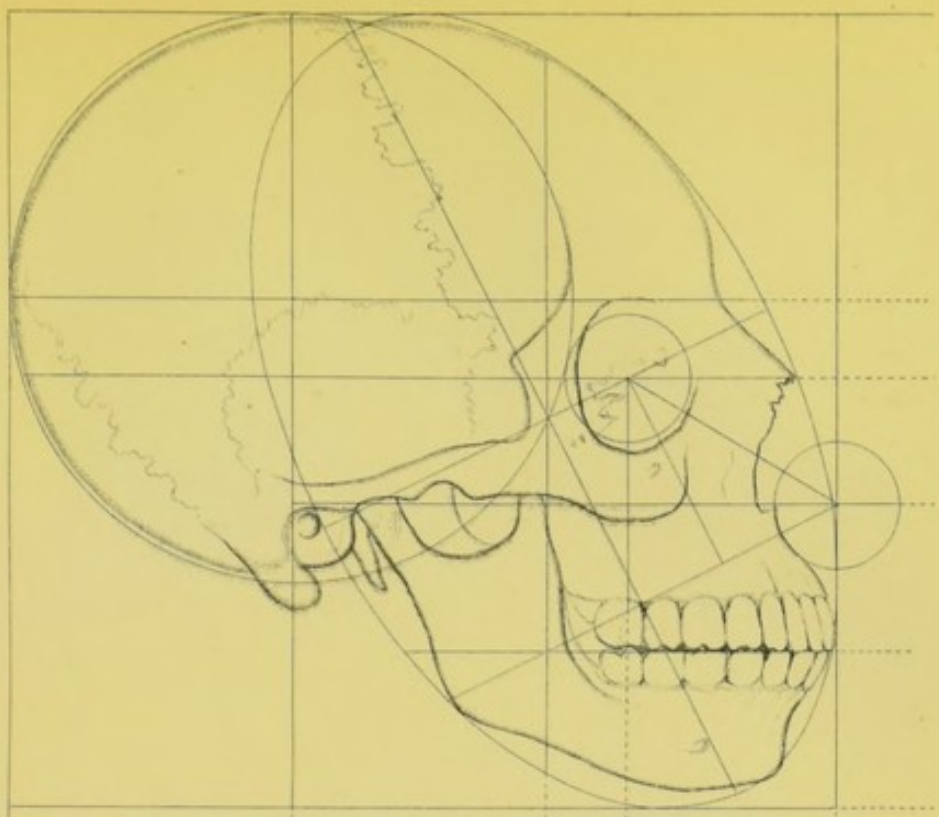

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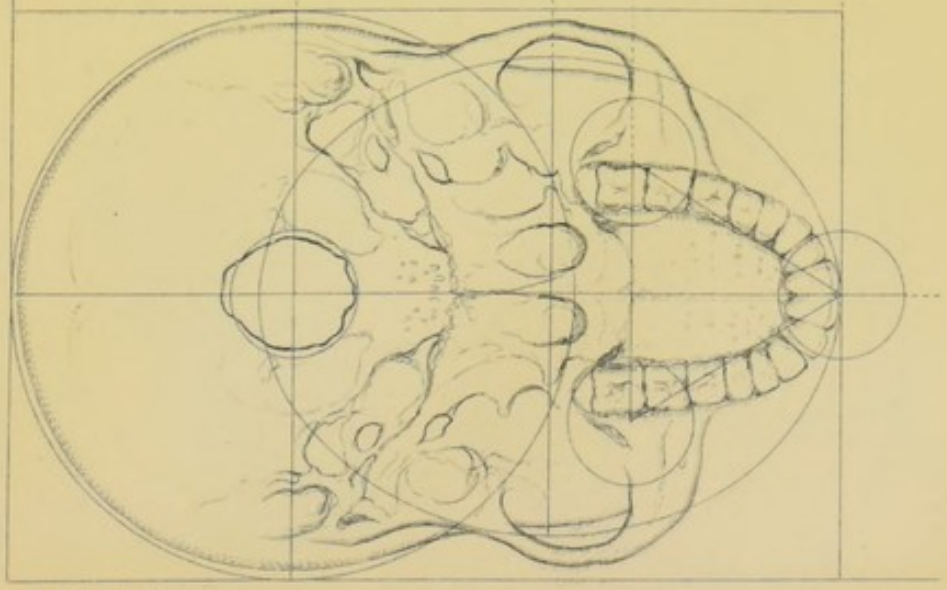

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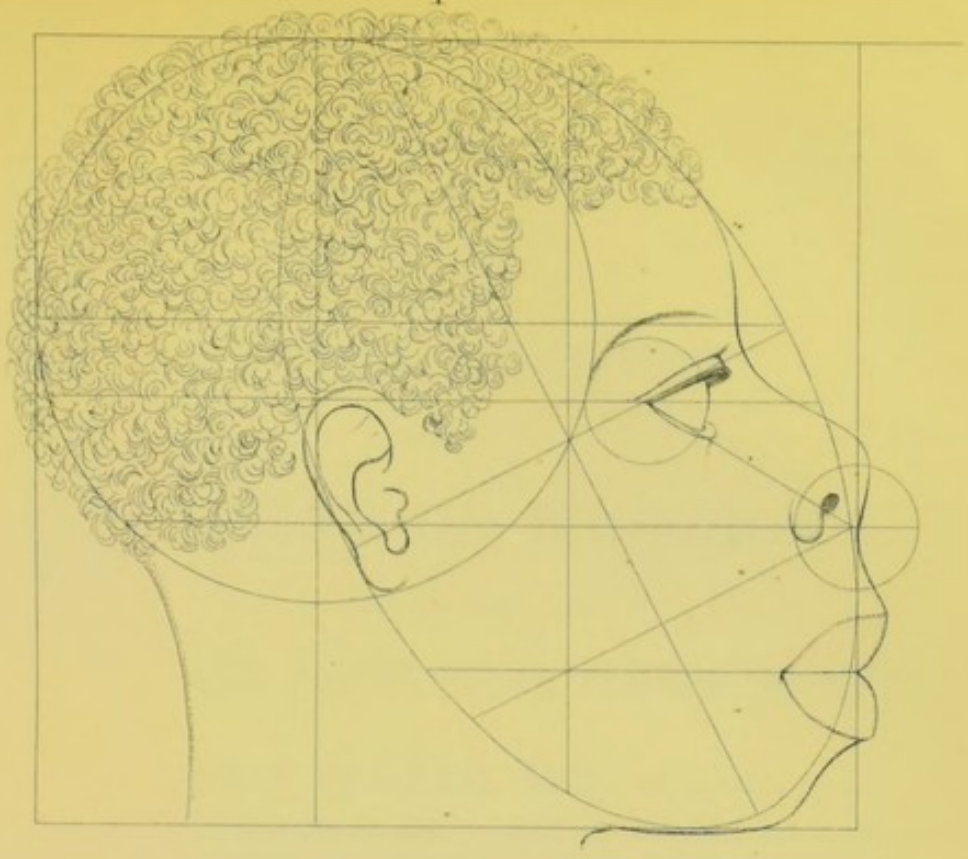

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