BOOK ONE
CHAPTER VIII

THE NEOHOMOZOAN ENCEPHALON

i. THE FIRST HOMOZOAN METAMERE

a. Metamerizing Biological Organisms

The neonatal neohomozoan organism is a biological metamerized organism. Biological metamerized organisms build their own metameres. They build them one at a time. The first metamere built produces all succeeding metameres. When built, the original metamere may be considered to be a self-repetitive unit biological plan which reproduces itself, forming an organized colony of contiguous and continuous metameres which, when produced, comprise the metamerized organism. The first metamere built controls the organism. Although each metamere is possessed of a regional reflex functioning, the true significance of a metamerized biological organism is determined by the complex whole which the interacting parts create, not as their sum, but as a construction differing in quality from each and all of them: an entity possible only through the relation of all that is contained in it to something else as end and means. The nature of the functioning of the biological, metamerized neohomozoan organism as a whole is determined by and is under the directional control of the first formed metamere.

Structurally, a metamerized biological organism may be of any of several types. The neohomozoan organism is a lineally metamerized biological organism. In the ontogenetic review of its phylogenesis neohomozoan lineal metamerization proceeds in one direction only. It is a polarized lineally metamerized biological organism. The two poles are unequally modified; either one pole or the other is the first metamere: either one end or the other directs and controls the organism.

It is a vertical, polarized, lineally metamerized biological organism: its superior pole points away from the center of gravity of the earth. Its inferior pole seeks that center of gravity. Its superior pole is called the cephale.

Those extrahuman biological organisms in which the master metamere reproduces in both directions of its axis show varying degrees of attempts at cephalization, from complete anencephalis to various modifications of a true encephalon. The simplest of these are those metamerized biological organisms that build a body with no encephalon; the next simplest, those that build a body and make an indifferent attempt at an encephalon; the next less simple, a body and a mildly fair encephalon. Comparative morphologists compare the forms of various biological organisms from the simplest to the most complex and find, for instance, that there are these anencephalic and encephalic forms among the metamerizing organisms, and among the encephalic, the poor, rudimentary, and from there on up to the magnificent human encephalon; and, disregarding the fact that these extrahuman metamerizing biological organisms are still what they are and have not and do not evolve beyond that and the human encephalon is what it is and in its evolvement infinitely beyond the nearest extrahuman approach, and, confusing comparative morphology with ontogenetic review of phylogenesis, have in the immediate past falsely deduced and decreed and some do still falsely decree that in its aeonic evolvement the human phylum was guilty of these same defective attempts; and, again falsely, that like some of these extrahuman biological organisms that now do so begin in their ontogens, the human phylum began and its ontogens do begin at the fourth metameric level and metamerizes in both directions: the human phylum did not evolve its metamerized organisms in this manner. This phylum did not produce anencephalic metamerizing organisms which then through the aeons blindly and patiently and forever failingly reach forward eternally toward the production of a head by a body. The human metamerizing biological organism builds the primordium of a fine encephalon and then the primordium of a metamerizing body. In its ontogenetic review of its phylogenesis the neohomozoan organism builds a blastocystic morph with an inner organ that is its cephale, then in a meticulous metamorphosis uses this cephale as the primordium of the first, prosencephalic, metamere of the encephalon of the metamerizing form, and discards the balance of the blastocystic morph after the metamerized form is completed. Thus, in building its metamerized form the neohomozoan ontogen goes immediately about the repetition of its phylum's aeonic process of building a primordial homozoan encephalon and then lets this primordial encephalon which it so assiduously produces build its own metamerized body. It should, therefore, be said that the human phylum in evolving its metamerized morphs first built an encephalon and proceeded from there. In this phylum's production of its metamerized neohomozoan biological organisms in its phylogenesis, first it encephalized, then it subencephalized, and, then, it sub-subencephalized; for, in its ontogenetic review of its phylogenesis, the developing neohomozoan ontogen forms a blastocystic morph, and within this, an inner organ which is its cephale, and of this forms a first metamere, and beginning with this metamere

and reproducing metamerically in one direction only, forms an encephalon of its first three metameres, a subencephalon of its next thirty some metameres, a sub-subencephalon of its final indefinitely determined number of metameres. These final sub-subcephalic metameres occur as the forming neohomozoan morph arrives at its saurian level, gradually progressively dedifferentiate, in a manner reminiscent of the manner in which a developing frog amputates its tadpole tail, as it ascends beyond the late mesohomozoan saurian into the proto-neohomozoan level of its morphosis: so that in its neohomozoan form only the most regressed, rudimentary vestiges remain of these sub-subcephalic metameres of the late mesohomozoan saurian level. In its genesis the phylum Anthropo homozoa anima sapiensis gās experimented with its inferior pole, not with its superior pole.

This building of encephalons which then produce, each, for itself, a metamerized body is a beautiful and wonderful human phyletic something. A special something of which and of the implications of which persons of the human phylum were fully and factually aware long ere that which modern encapsuled thought calls the dawn age of human history.

b. Prosencephalization

Illustrations intended for this subsection b. will be available for the reader at the Museum of Osteopathy℠ in their Online Collection filed as 1-7-1-b (www.atsu.edu/museum).

When completed, the neohomozoan encephalon is composed of the first three metameric segments of the superior pole of the neural cylinder: nameable supero-inferiorward as the prosencephalon, the mesencephalon, and the metencephalon: sometimes designated as the forebrain, the midbrain and the hindbrain, two misnomers; but rather, the upper brain, midbrain and lower brain. Nor did the human phylum as those same adherents of their myth of the morphosis proclaim build the lower end of its encephalon first and from this seek to produce an upper brain. In its ontogenetic building of its metamerized form the homozoan biological organism builds a prosencephalic metamere and from this original metamere as a self-repetitive unit biological plan builds its lineally arranged colony of metameres. Homozoan encephalization is, in fact, to be interpreted as homozoan prosencephalization.

c. The Inner Organ of the Homozoan Blastocystic Morph

The biological organism that is the homozoan blastocystic morph is not a metamerized organism. In producing its inner organ it builds in detail a prelude of a first metamere as an overture of that of which the metamerized neohomozoan organism will be the sequel: the structural arrangement of its colloids and cellular tissues, the sub-micro-atomic structural formations of its motifed molecules, these introduce the theme upon which will be wrought

the full orchestration, its opening movement building autochthonously an original metamere, its full structural and functional plan completely arranged in colloidal molecular and cellular molecular template.

Each of the layers which comprise the inner organ of the human hexiconcentric blastocystic morph is minutely, exquisitely, specifically, internally organized. The crystalloids and colloids of the upper colloidal layer are mosaiced in an exact paracrystalline arrangement; the cells which form the upper cellular tissue layer and, therefore, the molecules which they fabricate are placed in intricate methodic nicety; the molecules of the colloid which forms the middle layer are contained there in a complexly organized motif; the cells which form the lower layer and, therefore, the molecules which they fabricate are laid in a precise design. These are human templates, specific, exact and exclusive, evolved by the human phylum in its phylogenesis; developed by the human ontogen in its ontogenetic review of its phylogenesis.

This internal organ so formed in the homozoan blastocystic morph is the cephale of the organism anthropo homozoa anima sapiensis gās at this stage of its evolvement. It is the foreshadow of the first metameric segment of the neohomozoan encephalon: its upper cellular tissue layer is the prelude of the neohomozoan prosencephalon. It is the organ of human metamorphosis. It is the director and controller of the formation, maintenance, sustenance and functioning of the metamerized organism. Some part of it is the cathedra in which the nature of the end and means which this organism shall subserve in relation to the eternal becoming is determined, the means achieved, and the ends wrought. Perhaps it may not, therefore, be illogical to assume that, if anywhere, then here in some part of the mosaic of this upper tissue layer should be found jeweled the infix mechanism, which, formed in the earliest cosmic stages of the formation of the homozoan plasmodium; remained, evolving, as the plasmodium evolved; retained as the plasmodium became the zygote, the zygote became the blastosphere, the blastosphere became the blastocystic morph building its inner organ around it; and, being ample and strong and of a puissant salience, produced there within this template, as the organizer of its design, that by means of which the incarnating human being can continue to add its impulses to the dynamically organizing evolvement of this upper layer, so that it might be that at this stage of homozoan ontogenesis the incarnating human being having made this synapse even earlier than the earliest stages of the formation of the plasmodium can now extend its impulses from here into some particular area of expectancy of the template of this upper tissue layer which becomes organized thereafter from that center by these impulses of the human being adding themselves to the anthropocosmic impulses of the organism's own anthropobiologic organizing and evolving tendencies as they exist in that area so that the prosencephalon, and from there, in turn, the entire colony of metameres the building of which it will direct, becomes organized,

or organizable, by this conjoined, integrated, set of impulses. A place where the ultimate in the human mutation of light patterns of the total manifestation occurs, together with whatever that may mean in the fullness of its import.

These structural patterns of cellular and colloidal tissues, intramolecular arrangements, subatomic designs, paracrystalline patterns, comprise the personal primordium. Each motif of each pattern of each template is a specific area of specific growth and evolvement. Each moiety of the primordium is exact in its biochemistry, its spatial relationships, its timing. In these inheres the expectancy of metamerized neohomozoan ontogenetic development. The exactness of their production is the promise of the fulfillment of that expectancy. The instrument of that possibility of fulfillment is the template of the first metameric segment of the encephalon of the metamerized neohomozoan morph.

In this template, when perfectly formed, is portended the fulfillment of three classes of needs of mutation in three categories, cosmic, human, and extracosmic. It will have perceptual areas for the reception of impulses of the cosm; interoceptual areas for the reception of impulses of the human being; conceptual areas for the reception of impulses of the extracosm. It will have an area for the intercommunication of these in the formation of a single awareness. It will have an area for the reception and mutation of cosmic light patterns, an area for the formation and expression of the cosmic human psychic component; an area for the reception and mutation of cosmic metabolites, oxygen, certain carbohydrates, fats, proteins, water and minerals; an integrator area of its cosmic fabrications; an area in which the impulses of the human being and the final mutations and anabolisms are so organized that the periodic light pattern produced in that area can by means of the operation of the formula q, receive and produce and express a human mutation of certain final patterns of the cosm and certain final patterns of the extracosm of such order that the potential of the pattern produced is greater than was the sum of the potentials so received, so transformed, and so expressed. Since it is this prelude that is to become the original metamere of the polarized, one-directioned, lineally metamerizing biological organism, then it is this metamere that is this superior pole, and this superior metamere of this superior pole that is to direct and control the formation of the neohomozoan organism, its maintenance, sustenance, growth, function, behavior for the term of its viability. In this metamere is to be found the determination of the nature of the end and means which this organism shall serve in relation to the eternal becoming of that which is, was, shall be.

d. The Anatomic Prosencephalon

Illustrations intended for this subsection will be available for the reader at the Museum of Osteopathy℠ in their Online Collection filed as 1-7-1-d (www.atsu.edu/museum).

1. *Metameres and antimeres in metamerizing biological organisms.*

Metameres are repetitive like structural units: antimeres are paired bilaterally similar structural modifications of a basic structural part of a metamere produced symmetrically in relation to the axis of the metamere. A metamere can have any number of bilateral pairs of antimeres. The neohomozoan metamerized organism is an antimerized organism. Its antimerization follows a basic structural plan, which, as does that of the metamere, shows degrees of variation and modification of the antimeric plan, but, also as in metameric variation and modification, the basic unit plan is always, even though not always easily, discernable: and it is structural and functional.

2. *The anatomic prosencephalon*

Anatomically, when its ontogenesis is completed, this first metameric segment of the superior pole of the neural tube which is the neohomozoan prosencephalon[1] is comprised of four sagittally successive antimeric regional modifications which develop embryonically as four separate but interrelatedly evolving sagittal developments of the basic structural metameric plan of this first one of the three primary neohomozoan encephalic vesicles: they are nameable from above down, the uperprosencephalon,[2] the rhinenprosencephalon, the thalamenprosencephalon, and, the upoprosencephalon[3]. Of these it is the neohomozoan uperprosencephalon which becomes the largest, shows the greatest and most complex and most highly organized development.

Schematically, the transverse structural plan of the fully developed prosencephalon of the neohomozoan organism is that of a thick-walled hollow cylindrical ring which is the uppermost segment of a less thick-walled hollow cylinder. Longitudinally this thick-walled hollow cylindrical ring which is the topmost metamere of the neural tube produces a repetitive series of a basic antimeric regional structural modification of this prosencephalic metameric structural plan which are, in scheme, four successive transverse hollow thick-walled ringed slices of a thick-walled hollow cylindrical ring from each of which protrudes either bilaterally, a pair of unfused or, mesially, a fused bilateral pair, of elongated hollow, blind-end tubular antimeric extensions which diverge variously from this wall, approach, and at term either do or do not extend through an aperture of the ensconcing bony sconce of the ensconced encephalon, where the blind end of each forms a more or less modified bulb that is involved in the structural formation of a special receptor end organ.

Each of these of this series of four prosencephalic antimeric modifications produces its own further regional modification of the basic antimeric structural plan, forming four differential developments, respectively, of four sagittally successive basic regional antimeric modifications of the basic prosencephalic segmental plan. As so modified, these antimeric modifications

of the prosencephalic metameric segment are, from above down, the uperprosencephalon, the rhinenprosencephalon, the thalamenprosencephalon, and the upoprosencephalon. In each of these, the regional structural modification is extreme; but in none is it so extreme as wholly to obliterate the basic antimeric structural scheme of the neohomozoan prosencephalic metamere.

Because of this successive sagittal developmental scheme, these four antimeric developmental regions of the neohomozoan prosencephalon look to be arranged in four variously modified successively superposed layers, the uperprosencephalon being the overmost, the rhinenprosencephalon the next, then the thalamenprosencephalon, with the upoprosencephalon being the undermost, and because of the great development of the prosencephalon, and especially because of the extreme development of the uperprosencephalon, this scheme mounds upward superiorly from before back and from side to side.

e. The Prosencephalic Primordium

Illustrations intended for this subsection will be available for the reader at the Museum of Osteopathy℠ in their Online Collection filed as 1-7-1-e (www.atsu.edu/museum).

The five-tiered inner organ, built by and within and of certain parts of the homozoan hexiconcentric blastocystic morph is the original metamere of the newly forming metamerizing organism. It is the organizing unit of the lineal, cephalized, antimerized, sagittally triregionalized, elongated, polarized, metamerized, hollow, cylinderized, spiralized, organized colony of metameres which it will cause to be produced. In this first stage of homozoan metamorphosis the lower cellular tissue layer of this inner organ of the human blastocystic morph is the template of the first metameric segment of the visceral molecular anabolic system; the middle colloidal layer is the cellular and molecular template of the first metameric segment of the colloidal molecular anabolic system; the upper cellular and inner colloidal tissue layers are the molecular and cellular template of the first metameric segment of the neural tube, the cellular tissue layer of the first metameric segment of the epidermal integument and the first metameric segment of the axial organ called the notochord or dorsal chord. The upper colloidal layer is the molecular template of the first metameric segment of the colloidal system of the central canal of the central cerebrospinal nervous system. From these are produced the first metamere of the metamerized morph: then from this first metamere will be produced all of the metameres of the completed morph, all of the cylinders, all of the systems, all of the neohomozoan organism. This entire five-tiered inner organ becomes internally organized by its two upper layers—the upper cellular and the upper colloidal tissue layers.

The neohomozoan cephalon, or cephale, or head, is produced from all of the tissues and colloids of the first three metameres. The neohomozoan encephalon is that part of the cephale which is formed of the upper colloidal layer and the upper tissue layer of these first three metameres: that is, then, of the encephalic metameric segment of the original metamere and the first two of its self repetitions. Classically, in their earliest stages these first three metameric segments of the upper colloidal layer and the upper cellular tissue layer are called collectively the medullary or neural plate; then at a little later stage the neural or medullary groove and ridge; then the neural or medullary groove and folds; then the three primary brain vesicles; and, later, the forebrain, midbrain and hindbrain. But in consistent terminology, these of the first metameric segment of the encephalic layers of the inner organ of the homozoan blastocystic morph form the prosencephalon; those of the second metamere form the mesencephalon; those of the third, the metencephalon. Collectively these form the encephalon, the brain, the cerebral portion of the central cerebrospinal nervous system, the cephalic region of the neural tube. Of these three encephalic metameric segments the prosencephalon, or first encephalic metameric segment, is the first to evolve. It is, in fact, the evolutional development of the upper tissue and upper colloidal layer of this inner organ of the paleohomozoan blastocystic morph. Since the inner organ of the homozoan blastocystic morph is the anlage of the first cephalic metamere of the neohomozoan metamerized morph; and since the upper tissue layer of this inner organ of the neohomozoan blastocystic morph is the primordium of the first encephalic metameric segment, and the areas of its template are the presumptive areas of the mature prosencephalon, then perhaps the template of this upper layer of this inner organ can be reconstructed from an interpretation of the neonatal neohomozoan prosencephalon, since all of its fully developed parts are but evolved primordia. Structurally, in a scheme so reconstructed, the template of this upper cellular tissue layer of this five-tiered internal organ of the blastocystic morph is, in its inception, circular, its molecular and cellular template is concentrically organized. The molecules and cells are so arranged spatially that the outermost, marginal concentric circular zone is the mosaic of the first metameric segment of the epidermal integument. The central concentric circular zone is the mosaic of the first metameric segment of the neural tube, that is, of the prosencephalon. The middle, or submarginal concentric circular zone is the mosaic of the first metameric segment of the bilateral chain ganglia of the nervous system.

1. The first metameric segment of the neurointegumentary department

In his *Growth and Form,* Thompson[4] suggests that a change of material form is effected only by the movement of matter, and quotes "Ignorata motu, ignorata natura." By a continuous movement of its multiplying cellular matter the outermost marginal, concentric zone becomes the integumentary epidermis, forming that sensitive outer covering of the encephalon, the cells of which, to adapt Ranson's[5] phraseology, form the first metameric segment of the

tegmental nervous system, where the cells form the neural portion of the epidermal integument of the first metamere. This is the external, integumentary department of the neural system.

In evolving the inner organ, morphon of its metamorphosis, whereby a non-metamerized biological organism becomes a metamerizing biological organism, the homozoan hexiconcentric blastocystic morph, forming the molecular template of the governing area of that metamorphosis, places the molecular mosaic of that portion of the upper tissue layer in such manner that as the metamerizing organism evolves, the outer or marginal zone of the medullary plate comes to cover the entire outside of that organism, forming the epidermal integument of the outer, integumentary cylinder; the central zone of the tissue of the medullary plate comes to form the central cerebrospinal nervous system of the inner, neural cylinder; the middle or submarginal zone comes to form a liaison between the two cylinders. Then it places the molecules which will produce all of the organism that evolves between these two cylinders in the cellular and colloidal layers the subsequent evolvement, development and functioning of which will be governed by this upper cellular layer in the subjacent colloidal and cellular tissue layers, there to perform the work which these two, the outer tegumentary and the inner neural cylinders, incite and the liaison regulates in this living factory for which the evolving hexiconcentric homozoan blastocystic morph has produced the blue print.

2. *The first metameric segment of the neuro-liaison department*

The multiplying cells of the middle or submarginal concentric circular zone mound upward, form a neural crest from which the cells wander laterally forming groups of modified bipolar neural cells called ganglia, which extend their outward moving fibers to the integumentary neural cells of the first metamere through all of the forming intervening tissues so that they never lose contact with these, and to all of the cells of the forming intervening tissues establishing contact with these, and extend their inward moving fibers to the central neural cells of the first metamere so that they also never lose contact with these, forming a liaison neural department between the integumentary neural department of the first metameric segment of the neural system, the intervening tissue cells and the central neural department of the first metameric segment of the neural system.

3. *The first metameric segment of the neuro-central department*

The multiplying cells of the middle concentric circular zone form the first metameric segment of the neural tube; that is, the prosencephalon: its thick-walled central hollow cylindrical metameric ring with its four antimeric developmental regions and their respective tubular extensions and end bulbs. This is the central department of the neural system.

f. Organization of the Prosencephalic Template

Illustrations intended for this subsection will be available for the reader at the Museum of Osteopathy℠ in their Online Collection filed as 1-7-1-f (www.atsu.edu/museum).

The molecules and cells of this middle concentric circular zone are, in turn, arranged in four concentric circular regions in which are mosaiced the four antimeric developmental regions of the neohomozoan prosencephalon in such manner that the outer circular region of the prosencephalic zone is the mosaic of the uperprosencephalon; the next inward is that of the rhinenprosencephalon; the next, that of the thalamenprosencephalon; the most central zone being that of the upoprosencephalon.

As well as being organized multiconcentrically, the molecules and cells of this circular template of the homozoan prosencephalon are further organized supero-inferiorly in relation to its transverse diameter; bilaterally in relation to its axial diameter; and radially along radii 45°, 135°, 225° and 315°. This bilaterally, radially, concentrically, circularly organized template of this prosencephalic primordium which is this upper cellular tissue layer of the inner organ of the neohomozoan blastocystic morph also shows a polarization of the molecular preludes of its nascent antimeric regional tubular extensions and a superoinfero axiation: so that the template is multiconcentrically circular, axiated, polarized, bilaterally symmetrical; the axiation, polarization and bilateral symmetry having been superposed upon a radial symmetry, amplifying it.

The place in each bilateral half of each concentric circular region that will become the tubular antimeric extension of the antimeric developmental region is there, the molecular patterns having been laid in as the template was being formed by the developing blastocystic morph. Those of the uperprosencephalic extension lie bilaterally on the superior pole and close to the outer margin with their centers at approximately 135° and 45°, respectively: those of the other antimeric regions lying, respectively, inward bilaterally along radial lines that, beginning at 315° and 45°, respectively, would pass through to the center of the circular plate, the radius passing first through the uperprosencephalic ring, then the rhinenprosencephalic, then the thalamenprosencephalic, then the upoprosencephalic and to the center.

Further, the cells of this central neural zone are so arranged that some of those of the outer area will be places of reception for the terminals of the in-moving fibers of the cells of the liaison department, arranged in arrondissements, one for the terminals of the integumentary liaison endings, one for the intervening tissue liaison endings subdivided into a district for visceral liaison endings, another for the endings of those of the lateral ganglion cells that send their outward-moving fiber to the tissues of the muscle cylinder, called somatic

tissues. Some of those of the cells of the central neural zone that lie centrally next within this outermost marginal area will be places of reception of fibers from these arrondissements of liaison reception, in which the impulses are associated and judged and action is determined and the judgment released accordingly to the innermost area of cells from which judgment is transformed into action. Some of these will be places of reception for somatic tissue and some for viscera.

Thus the four antimeric regions vary in the amount of these three types of cells included in the region: the uperprosencephalon will have much somato-sensory, a good amount of viscero-sensory and motor; the rhinenprosencephalon will have much viscero-sensory and very little somato-sensory, and a good amount of motor; the thalamenprosencephalon will have no somato-sensory, much viscero-sensory, and an amount of motor; the upoprosencephalon will have some viscero-sensory and much motor.

Each concentric antimeric region is again divided, this time into superoinfero, a series of transverse areas for reception of fibers from each other antimeric region; which begin in each region just inferior to the area of the template of the special antimeric end organ. In the uperprosencephalic zone the association centers receive fibers from the cells of the rhinenprosencephalon, thalamenprosencephalon and upoprosencephalon. Those of the rhinenprosencephalon receive fibers from the thalamenprosencephalon and the upoprosencephalon. Those of the thalamenprosencephalon from the upoprosencephalon. Further, in each antimeric area a group of cells will receive terminals of fibers direct from the mesencephalic metameric segment and the metencephalic segment when these are formed. Thus the uperprosencephalon will receive terminals direct from all of the other antimeric developmental regions of the prosencephalic metameric segment, from the mesencephalic metameric neural segment and from the metencephalic metameric neural segment. It will also send fibers to each of these from other groups of its cells. One central group will receive fibers from the groups that receive the terminals from all of these antimeric developmental regions and metameric segments; these are called projection fibers.

1. Elongation

After the axiated, polarized, five-tiered inner organ of the homozoan blastocystic morph demarks itself with its template preformed, and of the proliferating cells of its upper tissue layer forms the prosencephalic primordium, then the next indication of its continuous development occurs as a proliferation of the templated cells of this upper tissue layer which is most pronounced at the superior pole, downgrading toward the posterior pole. At this stage a line abstract of the dorsoventral, mesial sagittal scheme of the entire blastocystic morph with its inner organ would look like the illustration which is Fig. A,

in which the upward mounding of the anterior pole of the prosencephalic primordium and lesser mounding grading toward the posterior pole is shown in scheme. A corresponding coronal view would look like Fig. B. The series 1, 2 and 3 of illustrations that comprise Fig. B. show the ovoid shape of the elongating template and the corresponding deformation of the areas as the time-space, or growth, dimensional relationships of the prosencephalic primordium moves along these structural lines of the template; in so doing they manifest variations and modifications but the structural lines are always there to be recognized. In discussing the permutations of organic form, Thompson,[6] discusses deformation, and suggests the clarity of understanding that results from the analytic method of simplification of detail of differentiation by first finding the basic design with its basic structural lines and then recognizing the variations wrought upon these structural lines. He discusses what he calls alteration or deformation of a system of coordinates and the corresponding transformation of the form, and the transformed representative of the basic form.[7] A comparison of the illustration of the proposed primordial circular template of the prosencephalic primordium and the proposed ovoid template of the first stages of elongation shows the manner in which the structural lines and spaces of the basic design remain and undergo progressive growth deformation.

Fig. **C.** shows the uperprosencephalic antimeric region of the prosencephalic primordium. The area of this uperprosencephalic antimeric region outlined by the lines marked aeo-aeo1-aeo2-aeo3 is assigned no meaning in the modern American approach to an understanding of the physiology of the encephalon; rather, that which this presumptive area promises, when the promise is fulfilled is most remarkably stated in most of the authenticated American texts to be a regressed rudiment of some highly evolved and complexly organized non-human developmental tendency of this portion of the prosencephalon. Just how this could be one fails to be able to see unless one has already failed to see that the human phylum is not the backward child of the so-called animal kingdom, but, may, possibly, be its pacemaker and pattern setter. This area of the phyletically so assiduously built inner organ of the homozoan blastocystic morph is the superior pole of the uperprosencephalic developmental region: it is also the superior pole of the neohomozoan prosencephalic primordium: it is the template of the central neural layers of the uperprosencephalic antimeric end organ. Extended as shown in the next figure, the similar region of the crest zone and the similar region of the integumentary zone are discernable, respectively, as the templates of the neural liaison area of these bilateral uperprosencephalic end organs and the neuro-integumentary area of these same end organs. Seeming apparently to lead in the evolvement of the metamerized homozoan organism, this is the area that needs enlightened attention, if this reconstruction of the template be correct. The following series of illustrations are devised to show the manner in which the presumptive paleohomozoan structural pattern becomes the neohomozoan prosencephalon: indicating some of the progressive time-space stages of this growth dimension.

ii. THE ENCEPHALON

a. The Primordium of the Eencephalon

Illustrations intended for this section will be available for the reader at the Museum of Osteopathy℠ in their Online Collection filed as 1-7-2-a (www.atsu.edu/museum).

Its primordium having been built and its presumptive areas of growth now gradually changing presumption into certainty, the evolving first metameric encephalic segment then builds the primordium of the encephalon, first, by building this of the prosencephalon, then by building that of the mesencephalon, then by building that of the metencephalon. The metameric template is repeated in each successive primordium. The presumptive areas of differential growth are the same. The relative growth of the presumptive areas differs in each of the newly forming metameres. It was Needham,[8] I believe, or was it Starling[9] who remarked in effect that high developmental specialization of any one of several tendencies of a multipotent biological template occurs by means of retardation and relative repression of other growth tendencies of the template and the fuller direction of the growth impulse toward the specially developing tendency. This occurs in these templates of the mesencephalon and the metencephalon, so that each of the two show high growth specialization of certain areas of the template and less remarkable growth of other areas. This selective development of the mesencephalic and metencephalic template presumptions occurs under the direction of the prosencephalon. So that in building an encephalon the prosencephalon adds to itself two successive departments of the encephalon each of which will function in a highly-evolved manner in some special one of its total potentialities: builds this in the first stages of the building of the organism. When the presumption of the templates of these two metameric segments has become fully realized the building of the encephalon of the metamerizing neohomozoan morph is accomplished. As so accomplished the neohomozoan encephalon comprises the prosencephalon, the mesencephalon and the metencephalon. The prosencephalon comprises four antimeric developmental regions, uperprosencephalon, rhinenprosencephalon, thalamenprosencephalon, and upoprosencephalon.

Thus, when built, the basic structural scheme of the neohomozoan encephalon is that of three sagittally successive, variously differentiated metameric segmental developments of the superior pole of a hollow, thick-walled cylinder. Anatomically, this scheme is bent anteriorly upon itself; its metameric segmental walls are variously modified, and its metameric components are further variously modified. The illustration shows the result. The dorsal wall of the prosencephalon comprises a very small area; that of the mesencephalon, an area somewhat but not much larger; that of the metencephalon is larger. The lateral walls of the three metameric segments show various degrees of enlargement; the ventral and lateral walls are variously modified. The regions, areas, arrondissements, districts, precincts are variously evolved: the basic

structural scheme remains; the pattern of the template is reconstructable. The central regions and their outward extensions are discernable.

b. The Central Region of the Prosencephalic Metameric Segment

Structurally, the thick-walled ring that forms the central portion of each antimeric developmental region of the fully developed prosencephalic metameric segment of the neural tube is composed of its regional masses of gray cells called nuclear masses and of their fibers, in which the cells of the various regions, areas, arrondissements and districts of the primordium have proliferated and materialized the promise. These are conspicuously arranged in four sagittally successive antimeric developmental regions, from each of which emerges a tubular extension.

c. The prosencephalic end organs

The external surface of each blind end of each tubular extension of each antimeric developmental region of the prosencephalic metameric segment of the encephalic region of the neural tube approaches and joins and becomes overlaid by a layer of neuroganglion cells which in turn are overlaid by neurotegmental cells. The cells of the blind end of the tubular extension are central neural cells. Altogether these arrangements of cells are the end organs of the antimeric tubular extensions of the prosencephalon. Neurologically [Dr. Weaver note in manuscript: correction "end organs made of neural cells and mesodermal cells" Ed.] the end organs are made of the three variations of neural cells: from within outward, central internal neural, lateral ganglion liaison internal neural, and external surface integumentary neural. The neurointegumentary epidermal cells show stages of evolvement from a simple squamous neurointegumentary epithelial cell to the bipolar axoned, dendrited neuron. The ganglion liaison neural cells show a specific organization, and much typical variation. The central neural cells form typical variations and varying degrees of complexity of organization.

Typically, in scheme, in all four cases, the cells of the external or neuro-integumentary cellular stratum of the end organ are arranged from without inward as an outer layer of squamous epithelial cells; the next few subjacent layers are stratified neurotegmental epithelial cells; the next is columnar neurotegmental; the next is axoned columnar neurotegmental cells. The stratum of ganglion liaison neural cells is composed of from one to several layers of large and small modified bipolar ganglion liaison cells. The stratum of central neural cells is composed of from more or less simple to complex and complexly organized layers of variously modified bipolar central neural, called gray, cells. Thus in each end organ the three neural departments central, lateral, and external; or central, liaison, and integumentary; are represented in the same

manner of interrelated organization in which they are found in the template. This is the basic structural scheme: each shows an individual modification of the scheme. These are called special sensory end organs.

The squamous, stratified squamous, and columnar neurotegmental cells have no fibers. The axoned columnar neurotegmental cells are polarized; they are possessed of at least one fiber that arises at the inner pole and passes inward to the next deeper stratum toward a liaison ganglion cell of this stratum. The liaison ganglion cells are possessed of two fibers. Ranson[10] mentions the research findings of others and his own, and reports the manner in which other cells of the neural crest surround a ganglion cell, encapsulating it and ensheathing its fibers. These cells remain very small while the ganglion cell becomes very large. Very many of the small cells form the capsule and sheath; only one cell and its fibers are so enhoused by them in each such housement. Extending the full length of the fibers, the sheath is called the neurilemma. The large ganglion cell sends a fiber into the plasma of the capsule which curves about within the confines of the encapsulment in a glomerular fashion, then piercing the capsule, and becoming surrounded by its sheath, divides into two ensheathed fibers, one of which extends outward either into the neurointegument or into the viscera to end in each case among the cells of the area in which they terminate; the other extends inward to end among the cells of the central neural department. In the end organs this inward-growing fiber ends in the next contiguous inward layer, which is the first layer of the central neural stratum. These cells of this layer are bipolar, are possessed of two fibers, a long one which arises from its own hillock at one pole of the cell, called an axon,[11] and a shorter, rapidly branching one, or a few or many shorter rapidly branching ones, that extend, from the other pole, called a dendron [dendrite], or, when plural, dendrons. The dendrons branch and rebranch sending their terminals among the many cells of the several layers of the central neural stratum where they are known as association fibers. The axon extends into the wall or central part of the respective antimeric developmental region of the uperprosencephalon; each into some one of the various masses of gray cells.

The cells forming the layers of the neurointegumentary stratum form a selective receptor apparatus. The stratum of ganglion cells is a transformer and transmitter apparatus. The stratum of central neural cells is a receptor, transformer, and expressor apparatus.

Each of the four antimeric developmental regions is a selective specialized development of one component of the totipotence, to adapt a term, of the prosencephalon, all of the other components of that total sensory potential remain in a comparatively underdeveloped state: in no region are they completely suppressed but undergo only a generalized development, serving as cellular groups within which are developed association centers with prolongations of fibers of similar cells reaching into each other developmental region of this first metamere and into other metameric segments as they in turn form.

Physiologically, each of these four antimeric developmental regions of the homozoan prosencephalon is a highly evolved, complexly organized, specialized development of some component of the totipotence of the upper cellular layer of the inner organ of the blastocystic morph which will be causative of the apprehension and mutation of a specific one of the four specific prosencephalic intakes of which the end organ formed on the blind end of the tubular extension is a primary receptor and fabricator apparatus, the tubular part an in-transmitter, the central part an efficiently organized receiving, processing and distributing department. In each the outer stratum of cells selectively govern what molecular form is presented to the liasion ganglion cells of the end organ. In each case the ganglion cells of the end organ test, reject, accept, receive if accepted, further fabricate the molecular forms accepted, present the fabrication to the various related arrondissements of the reception area of the central part of its particular prosencephalic antimeric developmental area, where in one of these receiving stations it is received and judged and related action determined and the judgment either released accordingly to the area of cells of the antimeric developmental region from which judgment is transformed into transverse abrogative action, or held within the conformations of the center for further processing by incoming fibers from the uperprosencephalon. In another it is released to association terminals which forwarded it to their cell stations in the association areas of their respective antimeric developmental regions where it is associated with impulses carried there by fibers from association areas of the other antimeric developmental regions, before judgment is formed and action instigated. In another, the fabrications are carried to the association areas of these other antimeric developmental regions preceding abrogative release. In some it is carried direct to the uperprosencephalon. In still others it is carried to the mesencephalon and the metencephalon. In all instances fibers from the uperprosencephalon descend into the abrogative area since it is the boardroom of the central office of the managerial department of this encephalon.

By means of this ordered molecular release each end organ acts as a reflex biochemical test organ for the presence or absence in the immediate environment of the organism of that for which this particular outward extension of the related part of the osseously enhoused neohomozoan prosencephalon would further fabricate, sends reports to a home station which can reflexly move the organism to and from the source material until it finds that particular source material which the neural system can most advantageously use; by another set of fibers sends messages of awareness to other home stations which can act directly or relay the message to final centers in the uperprosencephalon for final aware consideration which can then volitionally set about the process of adjusting the relationship of the organism to the environment, choosing that which will be permitted to be presented to the end organ.

Each end organ also acts as a discriminatory receptor apparatus, selecting its intake from that which is presented. Next, it then acts as a primary human mutator of these extrahuman molecules which it has thus selectively received,

breaking down the accepted extrahuman complexly wrought molecular patterns to their basic molecular or submolecular motifs of content and design, eliminating those of these which it will not use, retaining those which it will use as raw material in the fabrication of a specific human molecular form which then can cross the doorsill and enter the so highly selectively and so uncompromisingly rejectively self-guarded, volition-equipped automaton that is the metamerized biological neohomozoan organism: with the result that some final specific human mutation of molecular forms is produced as some ultimate human molecular fabrication in some part of the uperprosencephalon. These highly differentiated end organs which it produces are coordinated by the prosencephalon in that production. In the complex patterning of its final molecular forms the neohomozoan prosencephalon has wrought the molecular basis of the design of the mutation of light patterns which its head will produce.

The forming first metamere is organized by the upper cellular tissue layer of the inner organ of the homozoan blastocystic morph, that is, it is organized by the primordium of the prosencephalon of the metamerized organism. The entire metamerized organism is formed under the auspices of the first metamere. It functions under prosencephalic management. Whatever it is that these cells of the layers of the outer stratum of these four end organs of the prosencephalon will selectively receive, these liaison cells of the ganglionic layer selectively transmit, and the cells of the inner layer selectively transform and express, the finding of this, this will comprise the functioning of the metamerized organism that this first prosencephalic metameric segment will build. The building of the metamerized organism, the sustenance and maintenance of the metamerized organism when built, the placing of the completed metamerized organism in such manner within the cosm upon the earth within earth's photosphere, earth's atmosphere, earth's gaseous hydrosphere and among earth's molecular metabolites that these, the light patterns, the oxygen, the water, the metabolites, may be found and prehended; the selective prehension of these; the transformation of its selectively prehended cosmo-terrestrial offerings into a z pattern of light and awareness and volition, these, in the well-evolved, well-developed, unaberrant, healthy, full-functioning neohomozoan metamerized organism that has achieved the phylum's current expectation of achievement are under the organizing directorship, legislative, executive and judicial, of the prosencephalon, which, again, functions under the creative supremacy of the uperprosencephalon.

If the integrated human bicomponent psyche indeed be the integration of a specific human mutation of extracosmic light patterns formed in extracosmos by the extracosmic body of the human being, known here as the extracosmic human psychic component, and a specific human mutation of cosmic light patterns formed in the cosm by the cosmic human biological organism, known here as the cosmic human psychic component; and a cosmic human biological organism be explicitly a cosmic organism that produces a mutation of cosmic light patterns the pattern of which is such that this integration can occur, then

the formation and emission of that radiant body of specifically patterned light which is the cosmic human psychic component would be the first in order of the essential functions of the homozoan biological organism: with its progressive contribution to the processes of the atonement of the two psychic components in the formation of the integrated human bicomponent psyche, the use of the integrated psyche by the human person in the formation of b and b n, the assemblage of the human person, the production of the z pattern of light, in this order of their occurrence, as the balance of the essential functions.

In this case, the uperprosencephalon functions in relation to the formation of the cosmic human psychic component, the selective absorption of impulses of the integrated human bicomponent psyche, of cosmic light patterns, of cosmo-terrestrial atomic and subatomic moieties, of terrestrial molecular metabolites, to the formation of the b, the b n beneficence, the place of peace, the operation of that which cometh in peace, the production of that in which this operation results. In doing this the uperprosencephalon maintains that cosmic orientation of the metamerized organism, that, to paraphrase Fulton,[12] right-end-upness, vertex to the stars, which due to its built-in structural scheme permits it to walk with its head erect across the face of the earth, and endows it with the ability to move its movable structural parts in relation to that postural integrity, and to do both of these in relation to the presence and absence[13] of cosmic light patterns and the relative intensity of the light patterns; to do this in relation to the presence or absence and the relative abundance of usable oxygen; in relation to the presence or absence and relative abundance of those metabolites which its construction and mantenance and production require. To do this under certain specific cosmo-terrestrial conditions, which the human person must reproduce and take with him into the extra-terrestrial cosm if its cosmic biological organism is to survive.

iii. PHYLETIC CONSTANTS

a. Constants

Any unit motif of the phyletic structural pattern that occurs in all organisms of an evolving phylum which the evolving phylum manifests no tendency to shed, amputate, outmode or discard is a phyletic constant. The phyletic constants which in the process of its evolvement a phylum produces are many; for instance the conformation, the cellular structure, the molecular biochemistry and submolecular atomic nuclear physics of the prefrontal cortex of the uperprosencephalic portion of the prosencephalon of the cerebral portion of the central cerebrospinal nervous system of the organisms of the human phylum; or the skin of the metamerized neohomozoan biological organism which is formed as no other skins are formed. Any evolutional constant that occurs in all organisms of an evolving phylum is a phyletic evolutional constant:

such, for instance, as the constant homozoan phyletic evolution of the inner organ of the homozoan blastocystic morph, the template of its upper cellular tissue layer, its metamorphosis as the primordium of the prosencephalon, its development of the first metameric segment of the metamerized morph.

The early morphological stages of developing constants in the ontogen are called primordia; the biochemical arrangements that produce the primordia are called templates; the reproductive molecules that produce the template are called genes. The progressive stages of evolvement of the genes produce the templates; those of the templates produce the primordia: the gradual, progressive and cumulative morphosis of the primordial constants produce constant progressive inner assemblages and outer conformations of the evolving organisms of the evolving phylum. For purposes of discussion, these progressive morphological stages of the evolvement of constants in the phylum Anthropo homozoa anima sapiensis gās are divisible progressively into six groups: precellular, or early archeohomozoan stage; monocellular, or late archeohomozoan stage; multicellular or early paleohomozoan, and blastocystic, or middle paleohomozoa; prosencephalic, metamerized and caudate, or mesohomozoa; prosencephalic, metamerized or neohomozoa.

Given assemblages of given evolutional conformations of given assemblages of phyletic constants at given stages of their progressive morphosis form species of a phylum. The species of the phylum Anthropo homozoa anima sapiensis gās are archeohomozoa, paleohomozoa, mesohomozoa and neohomozoa. The findings described in Chapter VI, "The Neohomozoan Organism," subsections a, b, and c, "The Ontogen," "The Organism," and "Human Phyletic Sequestration" which comprise section iii, "Anthropo Neohomozoa," and this Chapter VII, "The Neohomozoan Encephalon," sections i and ii are constant findings of the organisms of the species neohomozoa of the phylum Anthropo homozoa anima sapiensis gās.

b. Phyletic Variation of Constants

Progressive species of a phylum evolve by progressive differentiation and organization first of the constants of the phylum's biochemical templates then of the constants of its morphological primordia. As the constants of the morphological primordia evolve they undergo variation within the limits of variation of the constant. An ethnos is any genetically related group within a species of a phylum which having produced, then, generation by generation transmit and act as a source of permanently transmissible variations of its phylum's constants. All four species of the phylum homozoa produced ethnic varieties.

A subethnic is a group within an ethnos that transmits variations upon the ethnic variations. Ethnic variations produce subethnic varieties and these in turn produce strains.

Some ethnic variations of the constants of the species are not fulfillments of the expectancy of these constants which mark the species; other ethnic variations do fulfill the expectancy; still others enhance it. By these last the phylum's evolvement is enhanced.

1. Dominants

In bio-biogenesis, in which the ontogen is produced by the packaged offerings of two types of reproductive cells which have been produced and ladened, an ethnic, or subethnic, or strain, a variation of a constant that transmits with a prevailing tendency to occur at the expense of the other variation of the same structural feature in any other breed is called a dominant variation. For instance, a strain or sub-ethnic or ethnic variation of a prosencephalon that, bred with any other variety of prosencephalon will reproduce its own variant pattern is a dominant prosencephalic variant strain: the variation is a dominant variation of the constant.

Dominants are progressive and regressive. Progressive dominants are conducive of progressive evolvement of the phylum. They carry forward the evolutional constant in sequentia. Regressive dominants are conducive of retrogressive devolution of the phylum. They manifest a prevailing tendency to disrupt the constants of the phylum's pattern of evolutional progression. A phylum evolves dynamically, progressively and cumulatively as its progressed species evolve. A species of a phylum evolves by progressive differentiation and organization of its evolving constants, by way of dominant progressive ethnic variation. A species of a phylum devolves by retrogressive dedifferentiation of its evolving constants by way of dominant retrogressive ethnic variation.

Evolutionally, of its total primordial constants, one particular morphon and its related bion is the ruling evolutional dominant, determining the trend of the development of its organism and, therefore, the evolvement of the phylum. If that ruling evolutional dominant constant becomes so altered that it becomes retrogressive, in a strain, a subethnic, ethnic, species or phylum, then that strain, subethnic, ethnic, species or phylum retrogrades, becomes a retrogressive strain, subethnic, ethnic, species or phylum. Interbreeding does not eliminate a dominant regressive variation of a constant: it promulgates it at the expense of the progressive variant and at the expense of the constant. The neohomozoan uperprosencephalon, its primordium and the template of its primordium, is the ruling dominant of the evolutional constants of the metamerized biological organisms that comprise the species neohomozoa of the phylum Anthropo homozoa anima sapiensis gās.

Metamerized, antimerized biological organisms of the various strains of the various subethnics of the various ethnics of the species neohomozoa of the phylum Anthropo homozoa anima sapiensis gās that have been produced by a defective uperprosencephalic primordium are not fully enlightenable; if the defect was pronounced they are benighted organisms; if it was anywhere

in between slight and pronounced they are crepusculant, varying with the degree of the defect: they can know the light but they cannot know it plainly: they can approach in varying degrees of nearness that epicritic awareness which formed the science, mysticism. If an ethnic has produced a defect as an average ethnic variation of a constant, the defective variation, since it is the average, is accepted by the ethnic as the norm, and an ethnos as such may be in a retrograde condition as compared to the phylum's expectancy of that stage of its evolvement, which retrograde condition the ethnos not only deems normal but believes to be the criterion toward which other ethnic varieties of the species should strive, both genetically and culturally. If, for instance, the variation be such that any one, or any several, or all of the other three of the four antimeric developmental areas of the prosencephalic template have developed excessively and uperprosencephalic development is in retard, this is not a normal organism. If other areas of the uperprosencephalon develop excessively and the pre-prefrontal uperprosencephalic cortex be in retard, again, this is not a normal organism in that it does not fulfill the current expectancy of the phylum's organisms. It may be the average; but it is not the norm. These organisms cannot find the way. Any variation that occurs at the expense of the integrity of the phyletic constant which is the extreme superior pole of the uperprosencephalon of the metamerizing, antimerizing biological homozoan organism is a regressive variation. Any ethnos the habitual molecular packaging of the reproductive cells of which when co-delivered build a blastosphere that builds a blastocyst that builds an inner organ the molecular template of the upper cellular and upper colloidal tissue layers of which is such that any of its motifs are in defect is a regressive ethnos.

[1]For fuller discussion of neohomozoan prosencephalon see Chapter XII, Sec. i.

[2]Ü per' prōs en ceph'' a lon.

[3]Ü po' prōs en ceph'' a lon.

[4]D'Arcy Wentworth Thompson, *On Growth and Form*, 2nd. ed. (New York: Macmillan Co., 1942).

[5]Stephen Walter Ranson, *The Anatomy of the Nervous System from the Standpoint of Development and Function* (Philadelphia: W. B. Saunders Co., 1921).

[6]Thompson, *op. cit.*, pp. 1051, 1040.

[7]*Ibid.*, pp. 1032-33.

[8]Joseph Needham, *Biochemistry and Morphogenisis* (Philadelphia: Lea and Febiger, 1926).

[9]Ernest H. Starling, *Principles of Human Physiology*, 4th ed. (Philadelphia: Lea and Febiger, 1926).

[10]Ranson, *op. cit.*, pp. 64ff.

[11]The hillock is called the axon hillock.

[12]John Farquhar Fulton, *Physiology of the Nervous System*, 2nd rev. ed. (New York: Oxford University Press, 1943).

[13]Frederick Wood-Jones and Stanley D. Porteus, *The Matrix of the Mind*. (Honolulu: University Press Assn., University of Honolulu, 1928).