THE

Teleo-Mechanics Of Nature

OR

The Source, Nature and Functions of the Subconscious (Biologic) Minds

FROM

Scientific, Religious, Political and Medical Viewpoints.

AN ANSWER TO

Prof. Ernst Haeckel's *Riddle of the Universe,*
Henry Drummond's *The Ascent of Man,* and
M. Alfred Binet's *The Psychic Life of the Micro-Organisms*

BY

HERMANN WETTSTEIN.

Devoted to the Reconciliation of Science and Religion.

"No Philosophy can stand which is not based upon Cosmic Law."

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DEDICATION

This volume is dedicated to

the MEMORY of

HORACE SEAVER and J. P. MENDUM

former editors and proprietors of the

BOSTON INVESTIGATOR*

who, altho as champions of Materialism differed widely from the teleological views advocated by the author in their columns for over a quarter of a century, yet presented them to their readers in an immaculate form—just as they left the hands of the writer—determined to live up to their motto:

"HEAR ALL SIDES, THEN DECIDE."

Result: an unparalleled prosperity which culminated in the erection of the magnificent

PAINE MEMORIAL BUILDING

now standing as a towering monument to their unswerving fidelity to, and uncompromising attitude towards

TRUTH—BE IT WHAT IT MAY!

*This grand old Weekly, for seventy-five years the leading Freethought journal of the world, suspended a few years after the demise of Seaver and Mendum for reasons explained in the book mentioned in last paragraph of *Prologue*.

INDICIA.

"If there has been an Evolution, there must be an Evolver." Canon Kingsley.

"Look through Nature up to Nature's God. All things are parts of one stupendous whole, whose body Nature is and God the Soul." Alexander Pope.

"A teleological mechanicism in Nature has become more and more accepted of late years." Haeckel.

"This I do affirm in knowledge of Nature that a little natural Philosophy disposes the mind to atheism, while much natural Philosophy will bring about men's minds to Religion." Roger Bacon.

"Mind is the Master! It is the supreme force which is able to subdue and direct all other forces. Turn to the study of the imperial power, MIND, which sits enthroned over all other forms of energy." Rev. S. S. Marquis, dean of St. Paul Episcopal Cathedral, Detroit, Mich.

"For thousands of years, philosophers have attempted to solve the problem of life, but the great secret remains concealed. And now, in the dawn of the Twentieth Century, eminent Psychologists, Biologists and Physicists tell us there are but two things in existence, namely, force and consciousness." Chas. Gilbert Davis, M. D.

These two "things" are merged into one entity, the Primal Mind-Energy, Prosychdynamis popularly called God. (W.)

"It is not in the higher being that the vital and psychical phenomena must be studied, because there their complication makes them inexplicable. But by descending to the very first stages of life, we shall discover the outline of an explanation of psychical phenomena." Le Bon, Evolution Of Forces, p. 376, Appleton, 1908.

Since Evolution is a mode of Progression from homogeneous to heterogeneous states, we must start in our researches with the simplest forms of life, and follow them step by step in their career of development until they culminated in Man. (W.)

MIND. (Psychic Energy.)

The Motor of all motion,
The Conductor of all force,
The Factor of all mechanicism,
The Organizer of all matter,
The Evolver of all evolution,
The Author of all law. (W.)

TABLE OF CONTENTS.

PART I

INTRODUCTORY.

PART II

THE EXECUTIVE ABILITY OF THE SUBMINDS.

PART III

AN OBJECT-LESSON IN TELEO-MECHANICS. THE "SIPHONOPHORE REPUBLICS."

(Colonial Sea-Nettles.)

PART IV

THE VITO-PSYCHIC LIFE OF PLANTS.

PART V.

MALFORMATIONS AND MONSTROSITIES.

PART VI

PROVIDENCE IN PROCREATION.

ITS ETHICAL AND TELEOLOGICAL SIGNIFICANCE.

PART VII

THE EVOLUTION OF THE HUMAN FAMILY. THE EVOLUTION OF "MOTHER."

"There is no place like home."

PART VIII

THE EVOLUTION OF THE HUMAN FATHER.

PART IX

CONSCIOUSNESS THE BASIS OF ALL PSYCHIC STATES.

PART X.

WORLD PROBLEMS.

PART I
INTRODUCTORY
PROLOGUE

The Treasure-Trove of Unknown Land

An Allegorical Story in Three Parts

I

Once upon a time the following events are said to have occurred in a country which we will, for the want of a better appellation, call *Unknown Land.*

From seemingly well authenticated sources it had been reported that a treasure-trove of fabulous wealth consisting of vast deposits of precious metals and "gems of purest ray serene" had been discovered by an adventurous prospector in a hitherto unexplored region, but who had accidentally lost his life while making preparations to take possession of his suddenly acquired fortune. The first intimation the world had of the matter was in the form of very illegible notes written in a memorandum-book tied up in a water-proof bladder which was found on the body of a man washed ashore on the banks of a river separating Unknown Land from the "haunts of Civilization." Another sack contained nuggets of gold and precious stones of immense value.

Now in order to identify the body, the authorities in charge of the case submitted the note-book to experts to decipher its contents, who, after finishing their labors, revealed matters of startling import. For it appeared that the fortune-hunter had first gone merely in quest of gold, but had found a rich gold-bearing vein, in following which he came to a hill thickly covered with underbrush. Nothing daunted, he set to work with his axe cutting a passage thru it, when suddenly he discovered the entrance to an abandoned gold-mine. Following several passages, he entered a subterranean chamber wherein he beheld various receptacles filled with pure gold; also boxes containing cut and uncut diamonds, rubies, sapphires and other precious stones, the total value of which ran into the millions.

The writer then related that, after having first secured of this hidden treasure all he could conveniently carry, he had closed the entrance to the mine again, replaced the brush to conceal it from the eyes of men, but marking it so that he alone could recognize it at a distance. He also described the general outlines of the hill, the point of the compass toward which the entrance to the cave faced, and several other landmarks, the object of which was to enable him to find his way back to it after he returned with others to take possession of the abandoned mine and treasure. Knowing that he had to cross several rivers on his way, he had enclosed these valuable memoranda in a water-proof deer's bladder which had perfectly preserved its contents.

As no attempt had been made to keep the news of this discovery from the public, it was not long ere thousands flocked to Unknown Land to assist in the search for its concealed treasure, but altho this was continued with indomitable energy and perseverance in what was supposed to be "*every direction*," (and "thereby hangs this tale,") and even the arts and sciences had exhausted their resources to the same end; after every nook and cranny of this desolate country had been ransacked until not a stone was supposed to have been left unturned; when Unknown Land persistently refused to yield its secret and reveal its priceless treasures, what wonder that the majority of these fortune-hunters finally gave up the search in despair, that the claims upon which they had staked their all were gradually abandoned and that most of them returned to the lands from whence they came, leaving only a few straggling bands behind who eked out a miserable existence as best they might from its barren and unproductive soil.

II

Years have passed since the above related events transpired. *Unknown Land* has been practically deserted by the thousands who had made it a busy beehive in search of the still undiscovered mine with its treasure-trove, only a comparatively few remaining—"hoping against hope" that something might "turn up" that would reveal its "whereabouts," they deciding to "rough it" a while longer; hunting, fishing and mining what they supposed to be the "simon-pure stuff" which they were accumulating in great quantities, but which proved to be nothing but pyrites of iron, a heavy mineral glistening with yellow particles, and which has been properly called "fools' gold." These people had come from the "States," be-

longed to no denomination, and all attempts at organization had proved a dismal failure. And no wonder, seeing they held widely diverging views regarding the nature of things about which they could not agree. Yet withal, having devoted much of their time to abstract metaphysical thought, they considered themselves as the very *avant coureurs* of Science.

Among this people an unpretentious youth of modest mien appeared, who, after familiarizing himself with the situation, felt confident in his ability to solve the mystery of Unknown Land which had defied the perspicuity of others, especially as he had had considerable experience in deciphering illegible scrawls.

First of all he procured the memoranda of the ill-fated discoverer of the hidden treasure, these notes being left open for public inspection. Then he proceeded to interpret them in his own particular way, translating them in language that would appeal to any one of ordinary intelligence. Reading them correctly, those parts that had been left vague and obscure by the former interpreters, were at once shorn of all their mysticism. Altho he was still unable to determine the exact locality of the abandoned mine, he had gleaned sufficient information to make him feel confident that he knew about where to look for it, that it was, in fact, within easy reach, provided certain obstacles that presented themselves could be overcome, but which he felt unable to remove unaided.

So, in order to obtain the needed assistance, he sent out circulars to the remaining settlers in which he called attention to the difference between the original translations of the memoranda left by the fortune-hunter and those of his own, both of which he reproduced for comparison. In commenting on the former he directed special attention to certain vaguely expressed passages which might admit of various interpretations, besides conflicting with other parts, to both of which facts he attributed the failures that had hitherto attended their efforts to locate the objects of their search.

He then claimed that upon these obscurely worded passages rested the solution of the whole mystery. Also that in his opinion the writer thereof had had some ultimate object in view in rendering them thus obscure, which purpose he, the interpreter, would let them surmise for themselves, tho he had his own opinion in regard to it. He also stated that he had subjected the said "hieroglyphics" to the most crucial analysis without obtaining any satisfactory results until he substituted words that threw light on the legible data which enabled him to comprehend their

true significance. As the readable part of the notes had been fully corroborated by the former explorations, he felt satisfied that in the intentionally mystified words lay "the key to the situation," and that by accepting his construction of them (which he had verified by doing a little exploring of his own as far as his limited means permitted) the long-deferred hopes of the remaining settlers of *Unknown Land* would be realized.

Assuring his readers that he was prompted by no other motive than to clear up the mystery connected with the vast treasures deposited somewhere in their midst, he concluded by offering his time and services to anyone or any party who would fit out an expedition (at an inconsiderable expense) which would follow the lines laid out by him. His only stipulation was that in the event of the expedition proving a success, the proceeds should be equitably divided among the inhabitants of Unknown Land and all were to share the credit for having unravelled its mystery. He was still "with them"—heart and soul.

III.

Time passed, yet no response was received by the hero of this "o'er true tale" to his unselfish offer to lead a party to the abandoned mine with its long lost hoards of gold and precious stones of inestimable value. This seeming apathy was quite unaccountable to him, for he was loth to believe that those whom he had so persistently addressed could be so obtuse as not to comprehend the palpable propositions he had presented to them, and, on the other hand, he was too unsophisticated to suspect the real animus that actuated them to treat his suggestions with scorn and contempt by ignoring them entirely.

One day, while out on one of his private "exploring expeditions," he had ascended a rather high eminence, and feeling tired, he sat down at the edge of a cliff overlooking a ravine. Suddenly a gust of wind blew off his hat, carrying it over a dense mass of briars and underbrush until it lodged on the bare ground beyond. To return without his "tile" was out of the question, so with the aid of the edged tool he always carried for that purpose, he soon had a passage cut thru the brush and was just in the act of reaching for his hat when——*lo and behold! there lay before him the glittering particles of gold-bearing quartz!* He had found the vein that led to the mine with its hidden treasure!

Following the outcroppings of the auriferous vein, he soon came to the side of a hill facing the point of the com-

pass indicated in the prospector's memorandum, and it was not long ere he found the entrance to the abandoned mine. This he could not enter, however, owing to natural obstructions that barred his further progress, tho this fact also satisfied him that the treasures within still remained undisturbed.

Covering up his tracks, he retraced his steps and was soon on high ground again where he recognized several other landmarks mentioned in the note-book which had heretofore escaped his notice. There could be no further doubt that he had *unravelled the mystery of Unknown Land.*

Elated over his good fortune that had placed the great prize almost within his very reach, he again ventured to enter into communication with those whom he had tried to interest in his plan for recovering it, apprizing them of his discovery (tho discreetly concealing the exact location from them) and again requesting their co-operation to secure the treasure for the joint benefit of their communities. How these new proposals were received is related in the ***Sequel*** to this *Prologue,* a book entitled:

*"**An Exposure of The Materialistic Freethought Inquisition*** to Suppress the Undesirable Truths contained in *The Teleo-Mechanics Of Nature and Subconscious Minds,* etc. An Open Letter to Prof. Ernst Haeckel." This Sequel is a history of vandalisms and malicious libels unparalleled in the annals of Journalism and Literature and will be mailed prepaid to any address on receipt of ten cents.

HERMANN WETTSTEIN, Publisher,
Fitzgerald, Georgia.

THE TELEO-MECHANICS OF NATURE

CHAPTER 1.

THE MYSTERY OF THREE FECUNDATED CELLS. THE LAW OF HEREDITY AN UNSOLVED PROBLEM OF SCIENCE. VIEWS OF DRUMMOND, BINET, HUXLEY AND HAECKEL.

There lie before me, plainly visible thru a compound microscope, three translucent, animated lumps of protoplasm—fertilized germ-cells, all identical in appearance, alike in chemical composition and exhibiting in their movements the same low degree of intelligence. Yet one will develop under normal conditions into a seemingly insensate plant, another into a bird and the other into the "crowning work of Nature" * man. "It is one of the most astounding facts of modern science," said Henry Drummond on page 62 of *The Ascent of Man*, † "that the first embryonic abode of moss and fern and pine, of shark and crab and coral polyp, of lizard, leopard, monkey and man, are so exactly similar that the highest powers of mind and microscope fail to trace the smallest distinction between them."—Mons. Alfred Binet, the eminent French biologist, and other noted scientists, credit these simplest beginnings of organic life with love and with hate, with memory and judgment, in fact, with the majority of the emotions characteristic of the higher Mammalia, yet, note the anomaly, *they question their consciousness!* Merely *question* it, but the learned author of "*World Riddles*" ("*The Riddle of The Universe*"‡) denies consciousness to every being devoid of a centralized nerve-system or brain! And this, despite the fact that he recognizes the psychological unity of the whole organic world! Reconcile these incongruities who can! Conceive of memory, judgment, sensation, will, etc., without consciousness!

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* The term "Nature" is capitalized because it is the *proper name* for cosmic energy.

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‡ Harper & Brothers Publishers, New York, 1900.

Prof. T. H. Huxley surpassed M. Binet in the recognition of the marvelous mental faculties of microscopic life. After studying the internal movements of ovum-cells in various stages of development, he compared them to those of a "skilled modeler upon a formless mass of clay. . . As with an invisible trowel the mass is divided and subdivided until it presents the finest fabric of the growing organism, being fashioned in so artistic a way that one is almost possessed of the idea that a stronger lens would reveal the hidden artist with his plans before him striving with skilled manipulation to perfect his work." (*)

Yet strange to say, while this great British scientist had thus a most vital truth within his very reach, he rejected what would have led him to the very Portals of the Fountain-head of organic life. In the skilled manipulations of the hidden artist he failed to recognize the potent force, *Intelligence,* to which every plant and animal, from the simplest to the most complex, owes its existence. The dictum of ultra-materialism "no brain, no mind" had done its fatal work; blinded him to a most palpable truth; led him to reject the evidence of his own senses!

An Unsolved Problem of Science.

Hundreds of theories pertaining to the Law of Heredity have been advanced, but all "have been tried and found wanting." The mystery surrounding the determinant of cell-formation remained as impenetrable as ever. And why? Because researches were confined exclusively to the domain of Physics! Mind was utterly ignored as a possible factor in the up-building of organic life. The edict: "without brain there can be no mind" barred the true actors in the "drama of Creation" from the halls of Science and Philosophy.

But are these actors devoid of organs of mentation? What but the protoplasm itself is the "brain" of all organisms devoid of a centralized nerve-system, and what but inorganic matter is the "brain" of the inorganic mind in Nature, hence not like our own? But these great truths being still "hidden in the womb of Time," said edict, which the first revelations of the intelligence of Protist-life should have exploded as a fallacy, closed the only field which yet remained unexplored; it excluded the only element which could dispel the "obscurity and confusion still prevailing in these momentous problems of Science." (Quoting Haeckel.) This element has, however, found its exponent in

* Lay Sermons, p. 162.

TELEOLOGY OR TELEOSIS

the science of final, intelligent causes or forces which are of a self-evolving nature, developing *pari passu* with and thru the bodies they build up, even as does the supra-mind of man in the various lines of Art, one form of mind being as subject to Evolution as the other, organization being the means employed to this end.

A teleological mechanicism, then, means that all atomic, molecular and cellular processes are controlled by inherent mind-forces corresponding in degree (or grade) with the properties of the bodies in which they are resident and operative, but that since both physical and mental properties retroactively determine each others' natures, qualities and degrees, both are constantly subject to transmutation from lower to higher states of existence and *vice versa*, and to this constant retroaction all changes in the forms of mind and matter are due.

Thomas A. Edison, a firm believer in the sentiency of matter, expressed himself to the effect that "the intelligence of man is the sum of the primitive judgment of his constituent atoms." Would qualify this view by saying that the intellect or supra-consciousness of man is the sum of the intelligence of the cells operating the cortex of the brain, while his submind represents the sum of the conscious judgment of his constituent atoms. Thru their impulse of self development, organization into psychoplasm is effected, and thru these processes the higher degrees of intelligence are produced which have found their expression in the various forms of organic life.

Would say *en passant* that the views herein presented were first advanced by the author some forty years ago and elucidated by him since then in various publications with the result that press-writers in general now refer to the subconsciousness (also called the biologic, secondary, subjective and subliminal minds and peripheral soul) as an established fact. That what we call the "life" of a plant or an animal is simply its subminds or cell-souls in active operation, hence they are one and the same psychic force. In other words: the sum-total of the vito-psychic energy resident in the cells of each organism has amalgamated into their subconsciousness, hence this constitutes their "life" or "soul."

That these views would meet with opposition was expected, but that it should come ***Only*** from those who style themselves "Freethinkers" can be attributed only to the most sordid of human motives, since these alleged "Truthseekers" resorted to vandalisms that would

shame even the Fanatics of the Middle Ages in order to suppress truths they were unable to confute. Full particulars of the *malicious persecutions* to which the author has been subjected by these false Pretenders and Truthkillers will be found in the book mentioned in concluding paragraph of Prologue.

CHAPTER 2.

THE GREAT SCIENTIFIC ULTIMATE.—HAECKEL'S INCONGRUITIES AND CONTRADICTIONS. THE ROCK UPON WHICH THE BARK OF EVOLUTION SPLITS.

While all scientists—barring old-school Materialists—are now practically agreed upon the existence of some kind of a mind-element in matter, the point upon which they still differ is whether it is of a conscious nature or not. To decide this question appears to be at the present time the "Great Ultimate" of biological lore. To guard against all misconceptions at the outset would say that I regard the mind in Nature analogous to our own, that is, constantly changing in kind, quality and degree with its physical substratum, even as the supra-mind of man constantly changes with the physiological metamorphoses incessantly going on in his brain. Hence, while the molecular movements of inorganic matter are to the mind in Nature what the same activities of the brain are to our supra-mind, so must all of them be of a conscious nature, tho of ever-varying degrees of intensity. This concept will divest mind of all mysticism and metaphysical speculation. It is such antithetical phrases as "unconscious mind," "unconscious memory" etc., that stagger the comprehension of even the astutest intellect and leave the problems of existence in as impenetrable darkness as ever. To divest mind of its most essential element, *consciousness*, is rank automatism—it is no mind at all. Such interpretation of psychic phenomena is Materialism in disguise, tho it pose under the "new-fangled" name of "Monism." The tendency of modern Science is evidently towards he recognition of the consciousness of the mind-element, and with this recognition a comprehensive view of the Cosmos is obtained We will now point out a few of

Haeckel's Incongruities

not in a spirit of criticism, but to sift the true from the false, for well has Herbert Spencer said: "There is a soul of Truth in things erroneous." The soul of the Haeckelian philosophy rests in its recognition of the psy-

chological unity of the whole universe, from the "sensation and will of the fundamental forms of substance," up to their culmination in the sub- and supra-consciousness of man, while the erroneous is the denial to the universal mind of its most essential element, consciousness, but this fallacy is of such magnitude (owing to our inability to conceive of unconscious mind or memory) as to render the entire position taken by Haeckel on psychic phenomena utterly valueless insofar as he affirms in one part of his volume what he denies in another, to substantiate which, attention is called to the following incongruous statements:

"Darwin's theory of the natural origin of species gave us at once the solution of the mystic problem of creation, 'the great question of all questions,' the problem of the true character and origin of man himself." (p. 78.)

In view of the fact that no mental agent or factor of any kind or nature is recognized in Darwin's theory of descent or of "Natural Selection," how can anyone reconcile the above passage with the following statement on pages 20 and 21:

"On the contrary, we hold with Goethe, that matter cannot exist and be operative without spirit, nor spirit without matter. We adhere firmly to the pure, unequivocal monism of Spinoza: matter, or infinitely extended substance, and spirit (or energy,) or sensitive and thinking substance, are the two fundamental attributes or principal properties of the all-embracing divine essence of the world, the universal substance"

Conceive of substance thinking of and perceiving anything *unconsciously*, if you can! Also, if "Natural Selection" solved the problem of man's origin, as Haeckel claimed in the first quoted paragraph, what office had the thinking substance or the divine essence of the world to perform in the Cosmos? Is the pantheistical position taken in one case not totally vitiated by the crass materialism of the other, as well as by the following declaration on page 258: "It has become possible for us to trace the splendid variety of orderly tendencies of the organic world to mechanical causes." If so, then is the divine essence a palpable superfluity! Conversely, if he adheres to the "divine essence," then can all orderly tendencies be traced to this as their cause, instead of to mechanical ones. So, "which horn of the dilemma is the reader to choose?"

His mechanical attitude is again contradicted by the following passage on pages 224 and 225:

"Every shade of inclination, from complete indifference to the fiercest passion, is exemplified in the chemical

relation and behavior of the various elements towards each other, just as we find in the psychological life of man and the sexes. The irresistible passion that draws Edward to Ottilia is the same unconscious attractive force which impels the spermatozoan to force an entrance into the ovum of the plant or animal; it is the same force which unites two atoms of hydrogen to one of oxygen to form a molecule of water. . . . On those phenomena we base our conviction that even the atom is not without a rudimentary form of sensation and will, or, as it is better expressed, of feeling (*aesthesis*) and inclination (*tropesis*) —that is, a universal soul of the simplest character. The same must be said of the molecules which are composed of two or more atoms. Further combinations give rise to simple and complex chemical compounds in the activity of which the same phenomena are repeated in a more complicated form."

Recognizing in these activities of atoms and molecules, as well as in the various chemical compounds, the same "fierce" psychic factors which distinguish the life of the sexes, and then, in the preceding quotation, "tracing the orderly tendencies of the organic world to *mechanical*," i. e., *utterly-mindless* agencies, can anyone harmonize these two diametrically opposite views?

Again, the statement on page 259 that "The whole of modern science gives a purely mechanical interpretation of the inorganic world" is flatly repudiated by the previous affirmation of mental properties being associated with atoms and molecules, as well as by the following on pages 288 and 289:

"In pantheism, God, as an intramundane being, is everywhere identical with Nature itself, and is operative within the world as force or energy. It follows that pantheism is the *world-system of the modern scientist.*"—If so, then science gives an anything but purely mechanical interpretation to the inorganic world, since he defines the pantheistical God as a *divine* essence of the world which is operative in inorganic as well as in organic substance, hence not of a *mechanical* character.

Haeckel's monistic interpretation of phenomena is again confuted by the following passage on page 220: "As to my own opinion and that of many other scientists, we hold that matter and the ether are not dead and only moved by extrinsic force, but they are endowed with sensation and will, though naturally of the lowest grade; they experience an inclination for condensation, a dislike of strain; they strive after the one and struggle against the other."

The above is again repudiated by the following pas-

sage on page 179: "I have never subscribed to this hypothesis of atomic consciousness"—as tho matter could experience likes and dislikes; sensations and inclinations unconsciously!

It should be noted that nowhere in his volume has he attempted to define his conceptions (if any) of the nature of the alleged "pure mechanicisms" of matter; or how it operates to bring about the "orderly arrangements of organic structure and the purposive contrivances" of which, he admits, all plants and animals are composed. How matter could thru physical means alone, or by a fortuitous concatenation of circumstances, have assembled itself into what Darwin has described on last page of his "Origin Of Species" as "the endless forms most beautiful and wonderful to behold into which life had been originally breathed by the Creator," no Materialist has ever tried to explain.

Did Darwin himself not recognize in the above quoted words the necessity for postulating an Intelligent Creative Force for the wondrous works of Nature? If so, then what warrant is there for claiming that "Darwin's *Theory of Descent* gave us the solution of the problems of Creation and of the Origin of Man"; that it had "solved the question of the origin of orderly arrangements from purely mechanical causes"? (World-Riddles, pages 78, 263.)

The incompetency of the Theory of Descent or of Natural Selection to explain the Origin of Species and of Man from purely mechanical premises is *The Rock upon which the Bark of Evolution Splits*. All that can be justly claimed for Darwin's Development Theory is that it accounts for the diversification of type insofar as a change of environs can modify structure and the principle of the Survival of the Fittest can facilitate evolution, but judgment is, self-evidently, essential to effect the modifications and adaptations. Hence Haeckel's teleological views of the cell-souls as the actual agents in so changing the physiological processes of plants and animals that they would become adapted to new environments, were in strict accordance with demonstrated biological facts, and but for his frequent shiftings to diametrically opposite positions of ascribing all organic phenomena to purely physical processes, blind mechanical agencies or chemical reactions the world would owe him a debt of gratitude for his researches it would not be easy to repay.

Thus again, how preposterous the statement on pages 47 and 48 of his "Last Words On Evolution" that: "Darwin's epoch-making work, *The Origin Of Species*, proved convincingly that this historical process is but a physiolo-

gical phenomenon; and that the preservation of improved races in the struggles for life had produced, by a natural evolution, the whole wondrous world of organic life."

Where, I ask in the name of Common Sense, is the connection between Evolution and Physiology? What have physiological processes to do with the principle upon which "Natural Selection" is based? Are they not as foreign to each other as astronomy is to reproduction? And how can the preservation of a certain object produce something else? Could we not with equal logic claim that the preservation of a work of Art produced all the arts of Civilization? Who or what produced the works that were *preserved?* When *that* is explained, we will know who or what produced all subsequent ones in either domain. The production and preservation of anything is just as inconceivable in Nature without postulating intelligent factors, as it is in the realm of Art.

Compare the above quoted passage with the following taken from Prof. John Tyndall's address on "*the Scientific Use of the Imagination,*" in which he showed that all abstract concepts, such as Evolution, Mechanicism and other nonentities are *products* of the imagination, hence cannot produce or create anything: "Evolution does not solve—it does not profess to solve—the ultimate mystery of the Universe. It leaves, in fact, that mystery untouched."—But in these degenerate days, Materialism claims that Evolution has solved the Riddles of the Universe! For is this view not clearly expressed in Haeckel's statement that the preservation of improved races *produced* the whole world of organic life?" Preservation is also a "product of the scientific use of the imagination," that is, a nonentity, hence can no more produce anything than can Evolution.

How little faith Darwin himself had in the efficacy of "Natural Selection" to "produce the wondrous world of organic life," may be seen from this passage on last page of his "Origin Of Species:" "There is grandeur in t
view of life with its several powers having been origi
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than can the wildest flights of the imagination, and to *that* all materialistic "factors of Evolution" can be reduced.

Having thus outlined our respective positions in the Polemical Arena, we will now enter the domain of Teleo-Mechanics (a combination of Haeckel's two radically different causes, paradoxical as this may seem) in search for the key to Nature's *sanctum sanctorum* which sage and savage alike have endeavored to unlock from time immemorial.

In Haeckel's ***failure to unite*** the teleological and the mechanical factors of development, lies the weakness of his position.

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PART II

THE EXECUTIVE ABILITY OF THE TELEO-MECHANICS OF THE ORGANIC KINGDOM

CHAPTER 3.

THE SOUL-LIFE OF THE MICRO-ORGANISMS. ITS AIMS AND OBJECTS. ITS SUCCESSES AND FAILURES. ITS TENACITY AND REGENERATIVE POWERS. SUPERNORMAL PRESCIENCE. MAINTAINING EQUILIBRIUM OF ORGANIC KINGDOM. LAW OF HEREDITY AN "UNSOLVED PROBLEM OF SCIENCE".

A careful study of the soul-life of micro-organisms has revealed that their chief aim and object is to organize themselves into the "colonies of cells" (as M. Binet has termed them) we call "plants and animals" to enable them to survive in their struggles for existence for their natural tenure of life. All cell-communities work towards the same end, each one operating along certain lines that were laid out for them in the form of mnemonical impressions of their genitors and ancestors pertaining to their physical and mental "characters". These impressions were received thru hereditary transmission, as will be explained in other chapters. That not all succeed in these intuitive efforts, shows that their cell-souls, subminds or subconsciousness (also called "biological" minds) are subject to the same weaknesses, infirmities and aberrations as is all mind that comes under our direct observation in the intelligent movements of man and beast.

This endeavor of the subminds to insure their existence for the longest possible period consistent with the initiatory impulse received at their inception, and which endeavor manifests itself in what we call the "tenacity of life", is much more pronounced in the lower orders than in the highest, it assuming in some animals an intensity marvelous to contemplate. But there is a reason for this, for note, that without these wonderful reconstructive powers, plant and animal life would have been exterminated long ere this; organic evolution would have been an utter impossibility, and none but the simplest uni- and pleuri-

cellular beings could ever have appeared and maintained themselves on Earth.

To what, then, but a certain form of prescience can this provision for the survival of the inferior orders be attributed, a survival upon which the existence of the higher forms depends? This provision, indeed, tends to preserve the equilibrium of the Organic Kingdom, since the superiority of the highest races is offset to the proper extent by this almost supernormal tenacity of the lowest orders of life, thus placing all on a *potential* parity.

The most astounding reconstructive powers are displayed by Polyps, Hydra, Radiata and other beings still lower in the scale of life, whole sections of which may be detached with impunity from the main body, yet each segment will proceed to reconstruct itself until all missing parts are restored.

To be more specific. If we divide, say, a Polyp into two, ten or more parts, the cell-souls or subminds resident within each fraction, immediately proceed to replace the parts of which they were deprived. This they accomplish within a period commensurate with that of the original growth of the animal, showing that the vitalism of each fragment has not been impaired by the ordeal thru which it has passed.

These remarkable potencies demonstrate that each individual cell of the lower orders is endowed with the same capacity of reconstruction or, rather, of reproduction, which in the higher orders is bequeathed only to the sexual cellules. That is to say: upon each derivative or "daughter-cell" of these inferior species are memorized the entire physical and mental characteristics of their genitors, while these characters are transmitted only to the sperm- and ovum-cells of the higher animals—these germ-cells being thus alone qualified to build up new organisms in accordance with the impressions communicated to them thru the organs and functions of Procreation.

The cognitions, then, all the cell-souls of the inferior orders, and the sex-cells of the higher species, have received of the characters of their genitors, constitute the determinants of the subsequent processes of cell-formation or "growth." This is the principle of Heredity expressed in the fewest possible words.

Now we may readily conceive of the stem-cells (cytulas) of high or of low degree being invested with the mental capacity of portraying to themselves the aforesaid "characters" of their predecessors (transmitted to them thru the force of Heredity), but this great distinction should be noted between this class of cell-souls and that of

the common derivative cells, that while all sex-cells are fully cognizant of the characteristic features of the organism they are engaged in duplicating, the subminds of the daughter-cells of the higher animals are cognizant only of the characteristics and functions of the particular parts to which they pertain—their cognitions and labors not extending outside of these circumscribed spheres.

Hence the significant biological fact that when an individual of the higher orders is seriously injured in, or deprived of, a vital part of his or its body, death is liable to ensue because the cell-souls adjacent to the injured or lost member have not the slightest conception of how to proceed in reconstructing it.

CHAPTER 4.

PROF. T. H. HUXLEY'S "UNSEEN ARTISTS STRIVE WITH SKILLED MANIPULATION TO PERFECT THEIR WORK." THEIR MODE OF OPERATION. THE PHENOMENA ATTENDING FECUNDATION GRAPHICALLY DESCRIBED.

The artistic and systematic manner in which the subminds of plants and animals proceed in their work of cell-formation was graphically described by Prof. T. H. Huxley, the great British scientist, in the following words on page 261 of his *Lay Sermons*, these descriptions being the result of carefully conducted microscopical observations of fecundated ova in their incipient stages of development:

"Strange possibilities lie dormant within this semi-fluid globule. Let a supply of warmth reach its watery cradle, and the plastic matter undergoes changes so rapid and yet so purpose-like in their succession that one can compare them only to those of a skilled modeler upon a formless mass of clay. As with an invisible trowel the mass is divided and subdivided into smaller and smaller portions until it is reduced to an aggregate of granules not too large withal to build the finest fabric of the nascent organism. And then, as if a delicate finger traced out the lines to be occupied by the spinal column and moulded the contour of the body, pinching up the head at one end and the tail at the other, fashioning flank and limb in due proportions in so artistic a manner, that, after watching the process hour after hour, one is almost involuntarily possessed by the notion that a more subtle aid to the vision than an achromatic lens can furnish would reveal the hidden artist with his plans before him striving with skilled manipulation to perfect his work."

These organic phenomena, observed by one of the greatest scientists of Modern Times, afford us as palpable evidence of the conscious intelligence of the cell-souls, as we have of the ingenuity of a mechanic while engaged in the prosecution of his work, for why should that which is accepted as proof-positive of intelligence in Art, not be accepted as equally valid in the domain of Nature? Yet, true to his preconceptions as the foremost champion of Materialism of the Nineteenth Century, the dictum that a centralized nerve-system is the essential condition of conscious intelligence akin to our own, blinded this great scientist to a realization of the nature of the phenomena he was observing; he failed to recognize the great truth that was within his very grasp, for not one word in recognition of psychic factors in the evolution of organic life found utterance in his works. The same may be said of his great contemporaries, Darwin, Tyndall and Spencer.

The phenomena preceding fecundation are no less suggestive of consciously and intelligently operating factors, in illustration of which I will here quote from M. Alfred Binet's work on "*The Psychic Life of The Micro-Organisms.*" (*)

"We shall regard the phenomena of animal fecundation particularly from a psychological standpoint.

"Among Metazoans (multicellular organisms) fecundation may be divided into two distinct acts. The first consists of the union of the two individuals (sperm and ovum cells). . . . The second consists in the acts that take place after copulation between the spermatozoid and the ovule.

"The ovule appears as a minute microscopic sphere enclosed by an envelope (vitelline membrane); it is formed of a mass of granulous protoplasm (vitellus) containing a nucleus (germinative vesicle) and one or many nucleoli (germinative spots). The spermatozoids in vertebrates have quite a different aspect: they are filaments of varying lengths having a distended part or head, and a tapering part or tail.

"A remarkable circumstance is, that the copulation of the two sexual elements is not without analogy to the copulation of the two animals from which they originated. The spermatozoid and the ovule repeat on a small scale what the two individuals perform in their larger sphere. Thus it is the spermatozoid that goes in quest of the female. It possesses, in view of the journeys it has to make, organs of locomotion that are lacking in the female

* Open Court Publishing Co., Chicago, Ill., 1889, p. p. 75-78.

as they would be useless to it. The spermatozoid of man and of a great number of mammifers is equipped with a long tail the end of which describes a circular conical movement which together with its rotation about its axis, determines the forward motion of the spermatozoid. The same mode of progression is seen in the zo-oespores of the Algae and in Mastigophores (vegetal animalcules) which are armed with flagella.

"There has been much discussion as to the nature of the forces that account for the movements of the fecundative elements. Since the spermatozoid has been regarded as nothing else than an histological element (by materialistic biologists, H. W.) endosmotic, hygroscopic and like (mechanical) actions have been accepted in explanation. M. Balbiani, from whom we have taken the foregoing details, declares that explanations of this character are none at all, for upon ultimate analysis all kinds of motion may be reduced to physical or chemical action."

What *governs* all those actions or movements in which a distinct purpose is manifested? is the mystery which Materialism is totally inadequate to explain.

" 'For my part,' our scientist (Balbiani) says: 'I do not believe that the spermatozoids move about blindly, but that they act in obedience to a kind of internal impulsion, to a sort of volition which directs them towards a definite object.' "

Since M. Binet admits that the copulation of the two sex-cells is analogous to that of their genitors, it must be directed by the same vito-psychic forces. In next paragraph he, indeed, concedes this point in the following words: "In fine, the spermatic element, in directing itself toward the ovule to be fecundated, is animated by the same sexual instinct that directs the parent organism towards its female.

"We might ask ourselves how such frail and minute creatures come by a power great enough to enable them to traverse so long a path to the ovule? Thus in the large mammifers the passages have a length of 25 to 30 centimeters, and in the hen the oviduct measures 60. But the spermatozoids are able to overcome obstacles quite out of proportion to their size. M. Balbiani and F. A. Pouchet have seen them carry eight to ten blood-globules fastened around their heads." (Intended as the essential building-material for the new organism. No forethought analogous to our own in this? H. W.)

"Let us now note what happens at the moment when spermatozoid and ovule come in contact with one another. These phenomena have been carefully studied by Fol in

his work on the Starfish. The ovule has no enveloping membrane; it is covered only by a mucous layer, soft and flaky. The spermatozoids come up in great numbers and push forward into this layer where they are brought to a halt and become entangled among each other with the exception of one which, more speedy in its movements, outstrips the others and arrives within a short distance of the surface of the vitellus (protoplasm of the ovule). At that supreme moment, and before any contact whatever has been made, there results a curious phenomenon of (psychic) attraction ("affinity") between the ovule and the spermatozoid; the peripheral (protoplasmic) substance of the ovule is seen to lift itself up in front of the spermazoid in the shape of a minute protuberance which has, at first, a rounded shape; then it grows thinner and longer and forms a point which advances towards the male; this point is called the cone of attraction. The head of the spermatozoid then fastens itself upon the cone which seems to draw it into its interior. The tail does not enter into the interior of the ovule or take part in the process of fecundation which consists in the fusion of the head of the male with the nucleus of the female."

The reason why the tail of the former does not enter into the process of fecundation is that it contains no nuclear substance. It was devised only for purposes of propulsion or locomotion.

Continuing, M. Binet says: "As soon as the head of the spermatozoid has penetrated into the ovule, this enwraps itself in an envelope to protect itself against the other male elements since the entrance of several males marks the beginning of an adverse change: the subsequent segmentation of the ovule is irregular and development ceases. . . Hence the formation of the protective membrane to exclude other males is so rapidly effected that access to the ovule is barred against those who might be only a few seconds behind the first and successful one."

What marvelous control over their atomic constituents these cell-souls must possess to thus arrange part of them almost instantly into a shield to exclude undesirable intruders!

"After its entrance into the ovule, the head of the spermatozoid presents the appearance of a radiate figure, of a diminutive sun advancing towards the female nucleus. At the same moment the female appears affected and puts itself in motion towards the spermatic nucleus. The two nuclei come almost within contact, and it is then in particular the female nucleus that plays the active part. It is disturbed by incessant movements and every moment

changes its form; it thrusts out prolongations towards the male nucleus and one of them fastens itself upon the latter, presenting at the end a depression resembling a cup which receives the male nucleus. The two nuclei, while executing active movements, then fuse into each other."

The subsequent activities of the now united germ-cells, merged into the stem-cell of the new individual, have been described at the beginning of this chapter.

CHAPTER 5.

CAN THE NONENTITY "EVOLUTION", OR THE NONDESCRIPT "NATURE" RESTORE LOST OR LACERATED PARTS? THE PHENOMENON OF THE HEALING OF WOUNDS. WHAT KNITS ATOM TO ATOM, MOLECULE TO MOLECULE, CELL TO CELL? CAN "NATURAL SELECTION" RECONSTRUCT FRAGMENTS INTO COMPLETE ANIMALS?

Having seen how the "skilled artists", the cell-souls or subminds of plants and animals, proceed in starting new organisms on their career of development, we will now return to the reconsideration of the subject of Chapter Three relating to their reconstructive powers, requiring the expenditure of vito-psychic energy in entirely different directions.

While to the subminds of the higher orders is denied the potentiality to reproduce lost or lacerated parts, their cell-souls are endowed with the capacity of repairing them if the lesion is not "beyond repair", that is, if restoration is within the scope of their limited resources.

It should be borne in mind that in all cases their recuperative powers constantly vary under different pathological conditions; hence under normal states the regenerative capacities are greatly augmented, while when inimical elements have lowered the vitality of an organism the restorative energy of the cell-souls is diminished in a proportionate degree.

These phenomena of the healing of wounds go far in dispelling the obscurity still enshrouding the nature of organic life, for it must be evident that the factors engaged in the healing processes must be identical with those that were originally engaged in the construction of the plant or animal.

Now what possible relation can these reconstructive operations have to the principles of Evolution—the mainstay of the gospel of Materialism? How can the "Survival of the Fittest in the struggles of Life" restore a diseased

or lacerated part to its normal state? How can that which exists only as an abstract concept in learned men's brains knit atom to atom, molecule to molecule, and cell to cell? How can that which the great Materialist of the Nineteenth Century, Prof. John Tyndall has described (not to say "denounced") as "a product of the scientific use of the imagination", that is, "Natural Selection", set and mend broken bones?! Could an infinite number of such abstractions upon which the whole structure of Materialism is based, possess the executive ability to accomplish even the most insignificant of these works?

Yet the learned author of "World-Riddles" professes to see in said abstraction "the great selective divinity which by a purely natural choice, without preconceived design, creates new forms, just as selective man creates new types by an artificial choice with a definite design." (p. 263.) Comparing an abstract principle which even Herbert Spencer recognized as totally inadequate to account for the facts of Evolution, with the designer of a great work of Art! How is that for logic—for *analogy!*

But let us look at the relation Evolution (the actual facts of which are not questioned) bears to our present subject from another viewpoint. We know that in the Ontogenesis (embryological development) of every complicated organism the history of Evolution repeats itself in each individual, and in regular *routine* order. That is to say: there are definitely established rules or "laws" by which the development of the embryo is governed, and from which there is (under normal conditions) no appeal. This makes the task of the cell-souls engaged in its construction a comparatively light and easy one, they simply following the lines laid out for them by their genitors which were communicated to them thru hereditary transmission, as explained in other parts of this volume. Hence they have but comparatively little judgment of their own to exercise in the premises. All they are cognizant of, they have inherited from their predecessors. The exercise of *no original judgment* is required except in those comparatively rare cases when a persistent change in certain environs suggests the necessity of a modification of structure in the affected parts, the general results of which adjustments by mental and physical labor we recognize under the term "adaptation." All functions proceed as evenly and smoothly in the various departments (other conditions being equal) as in a well-regulated factory employing hundreds or thousands of mechanics all engaged in different kinds of work, each one of whom has become

by constant practice and experience an expert in his or her special line of labor.

But when the organic complication is accidentally lacerated, what then? Evidently all inherited traits, acquired tendencies and ancestral experiences of the teleo-mechanics or cell-souls resident in the affected parts can be of little, if any, avail in such contingencies. Something entirely out of the ordinary has occurred which must be met and provided for. Memory alone (the principal factor of Heredity) is totally inadequate in these straits to help the "unseen artists" who have survived the disaster which has overtaken part of the organism, out of their dilemma. *Independent and original judgment only* can so manipulate atom, molecule and cell as to knit the injured parts together, if not beyond repair, and restore them to their former usefulness.

In any serious fracture or contusion, the *debris* of the wreck must, first of all, be removed, that is, the dead and dying cells must be disposed of to make room for new ones if possible, and when this work has been completed, new methods must be improvised for repairing the demoralized parts along entirely different lines than those which were followed during the original construction of the organism. How can Evolution "put in its work" here? It covered the entire ***Past*** only! What is wanted ***now*** is not an artist who, *as with his plans before him* strives to build up a certain structure, but a *Repairer* who is *required to do work he has never had* any *experience in, or knowledge of, before!*

But there is another point to be considered in these processes of the healing of wounds. While suppuration is proceeding and multitudes of dead cells are being carried off, from whence are the physiological functions directed which lead to the restoration of the lacerated parts?—provided, always, that they are not beyond repair—we now having the *higher* orders of plant-and animal-life in view, as has been stated in the second paragraph of this chapter. In these emergencies, the memory of the adjacent cells has, evidently, to be called into requisition, showing that the same mental factors are operative in the regeneration of an injured member of the organism as were originally engaged in its construction. Having built it up thru their inherited fund of cognitions and memories of its "characters," they are naturally qualified to repair it.

That the subminds are not always "equal to the occasion", not always successful in their work, indicates that the teleo-mechanics of Nature in general are liable to the same infirmities, subject to similar errors and fallibili-

ties of judgment, and consequently to the same "trials and tribulations" which characterize our own supra mind; it shows that their mind is congeneric in its nature and quality to that which comes under our direct cognizance in the manifestations of intelligence of the higher orders of life. The only real difference between them is that the subminds' spheres of activities are confined exclusively to the mechanicisms of the body, while the supra-minds' fields of operations extend to the outside world. But this comparatively slight difference is sufficient to render our comprehension of the subminds' nature and modes of operation an extremely difficult task.

CHAPTER 6.

PROF. HENRY JAMES CLARK'S (*) AND TREMBLEY'S CELEBRATED EXPERIMENTS ILLUSTRATIVE OF THE LOWER ORDERS' MARVELOUS EXECUTIVE POWERS. REGENERATION AFTER ARTIFICIAL DIVISION OF POLYPS, RADIATES, HYDRA, ETC.

To what extent the teleo-mechanics of the Organic Kingdom have succeeded in rendering the lower forms of life invulnerable against the assaults of the more favored species (for the beneficent purpose set forth in the preceding chapters), may be seen from the following extracts from Professor Henry James Clark's work on "The Mind in Nature, Or, The Origin of Life and Mode of Development of Animals". (†)

"By budding, we see that animals do, in a measure, arise independent of the egg-stage, and therefore, as all individuals do not originate by maternal gestation, we cannot be debarred from inquiring how many other methods of generating animals there are. We have taken note of one by budding, and one by self-division. Let us now see to what extent reproduction by artificial division proceeds; under what forms, and in what, or how many ways it can happen.

"We have seen how small a piece of the base of a Sea-Anemone or "animal-flower" may divide off voluntarily; now I will add that it may be cut across, and the base reproduce a head, and the head reproduce a base; or it may be split lengthwise, and each half will regenerate the wanting part. Infusoria were cut in several pieces by

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* Professor of Zoology, Harvard University.

† D. Appleton and Company, New York, 1865, p p. 89-95.

Ehrenberg, and each fragment reproduced what was wanting to complete its organism."

Hence by continuing to divide the *regenerated* animals after they have reconstructed themselves, (an artificial multiplication by division), an indefinite number of them can eventually be produced—the obvious purpose of endowing them with these extraordinary powers being to render them immune against the possibility of extinction, which would mean the obliteration of the higher forms of life.

Below are a few instances of the results of artificial division followed by the regenerative processes of the cell-souls of these animals from which we may infer to what an enormous extent natural division and regeneration must be carried on during their incessant and fierce struggles for existence. The significance and importance of this exemption from annihilation will be realized when we consider that if after a life and death-struggle between two or more individuals but a fraction of one remains intact, (the other parts being devoured by the victor), that one fragment alone will reconstruct itself into a complete animal, incredible as such extraordinary capacities may seem.

"The most remarkable of all these kinds of experiments," continues Prof. Clark, "are those of Trembley upon the Hydras (*) of which he published an account in 1744. Had they not been confirmed by other observers and experimenters, there is no doubt that his statements would have remained in obscurity along with the stories of the old writers about the now justly termed fabulous monsters, the Griffins, the Serpents with many heads which were called Hydras, the Tritons, the Centaurs, etc. Not only did this patient experimenter cut the Hydras in two, but he even went so far as to slice them across into numerous thin rings, and, marvelous to say, each ring reproduced a crown of tentacles at one end, and elongated into a perfectly formed, naturally shaped individual at the other. With the same degree of minuteness, Trembley also split the Hydras into thin longitudinal strips, which, like the rings, reproduced what was wanting to make a perfect body. Some of them he split from the mouth only part-way down the body, and, each part reproducing what was needed, a many-headed Hydra was the result, thus verifying, on a small scale, the story of the many-headed monsters of olden time."

It may be said in explanation of these phenomena

* A cylindrical animal about half an inch long.

that the living cells of the surviving parts were (and are) endowed with the potentiality to restore the fragments into entire organisms, but this is as vague as to ascribe the whole physiological processes to "Nature." Unless, then, we can analyze this potentiality or this "Nature" into its constituent elements, no explanation is given. These elements are analogous to those which distinguish the germinal cells or cytulas of the higher orders, namely, a cognition or memory of the entire physical and mental characteristics of the organism, judgment in the selection of the available material at hand, and the executive ability to reorganize the "colony of cells" along the original lines laid out by their predecessors, and carried from generation to generation by hereditary transmission.

Referring to the ambiguity with which the term "Nature" is frequently employed, Thomas Davidson says on page 12 of his "*History of Education*"*: "It is unfortunate that, in our time, Nature (with a capital) is often spoken of as if it were God, *minus* consciousness."

CHAPTER 7.

HYDRAS TURNED INSIDE OUT RIGHT THEMSELVES. HOW THEY OUTWITTED THEIR TORMENTORS. MIND THE INITIATOR, CONDUCTOR AND PROMOTER OF ALL ORGANIC PROCESSES.

Continuing, Prof. Clark says: "But the ingenuity of Trembley was by no means exhausted, for, seeing that these little creatures were mere sacs, the idea of turning them inside out struck him as a feasible one, and he, therefore, proceeded to the experiment with a great deal of care and perseverance. With the blunt end of a fine needle he pushed the bottom of the sac thru the body and out of the mouth, but he found that the animal righted itself as soon as left alone again, and therefore, after having again succeeded in the inversion, he ran a bristle crosswise through the body, and thus compelled the little victim to retain its change of front, and reorganize its internal and external departments. This it had no difficulty in accomplishing after the lapse of a few days, as Trembley proved by presenting it with bits of meat which it swallowed with its accustomed voracity."

Are all these marvelous performances of the little victim, i. e., of its cell-souls or subminds, possible without consciousness, judgment and executive ability of a

* Charles Scribner's Sons, New York, 1901.

high order? What is the ingenuity displayed by the experimenters in turning a living sac of protoplasm less than half an inch in length inside out and running a bristle thru it to keep it from righting itself, compared to the skill and exquisite judgment exhibited by its cell-souls to so re-adjust its "departments" as to adapt itself to the new conditions forced upon it, and thereby save its precious little life?

Yet the learned Professor of the Jena University, who is unquestionably aware of these and thousands of other similar feats, holds that a centralized nerve-system is the essential condition of consciousness, denying it to the lower animals, the Protists and plants. And why? Simply because the *protoplasm itself* had not yet been recognized as the medium of cerebration of the cell-souls, even as inorganic matter serves in the same capacity to the inorganic mind of Nature.

Seeing, then, that the activities of the cell-souls carrying on the physiological processes attending the restoration of the inverted sac of protoplasm to its normal state were performed without a rudimentary nerve-system even, (leaving entirely out of consideration a centralized cerebral organ), can we come to any other conclusion than that the mind-forces which accomplished all this, had their seat in the very constituents of their plasmatic base?

These marvelous exploits of the cell-souls of such humble beings utterly explode the theory that conscious intelligence is the product of chemical action associated with the nutritive processes of the body. Instead, then, of the physiological functions generating mind or consciousness, the experiments of Clark, Trembley, Ehrenberg and others have practically demonstrated that mind is the initiator, conductor and promoter of all organic processes. Ergo: Materialism has "placed the cart before the horse" in its interpretations of organic phenomena.

Returning to the experiments of the English scientist Trembley upon the inoffensive, but not defenseless Hydra, the resources of the latter to resist the labor performed "in the interest of Science" were by no means exhausted, as the next results, given below, clearly demonstrate.

"Trembley now undertook to ingraft one individual upon another, and this he succeeded in doing after some curious experiences. At first he pushed the tail of one individual deep down into the cavity of another, and in order to hold them in this position he ran a bristle through their bodies and tied a knot in the end which was below the surface of the water to prevent the spitted pair from leaving their post. But the simple Hydras outwitted

their tyrant, who, to his great amazement, found them, some hours later, hanging side by side as if they had never been under more intimate relations. He then concluded to watch the next pair, when he discovered that the inner one first pushed its tail through the hole made by the bristle, and then drew its head after it, and sliding sideways along the spit, completely freed itself from its companion. This it did as often as the experiment was tried in that way."

All of these operations are analogous to the phenomena of the healing of wounds or of repairing lacerated parts, to accomplish which, the exercise of *original judgment* is required in each and every case, since no two are alike or occur under the same circumstances. The only difference between these processes and those observed by Trembley are that the latter are of sufficient magnitude to come under our direct cognizance. Yet, did the movements of Prof. Huxley's "hidden artist who, as with his plans before him strives with skilled manipulation to perfect his work", not also come fully within the range of his (Huxley's) vision? So where is the difference after all?

"It then occurred to Trembley that dissimilar surfaces, that is, the outside of the one, and the inside of the other, were not so likely to grow together as similar ones; and to put this to the test, he again turned one of the Hydras inside out, so that when it was pushed inside the cavity of another, the surfaces of the stomachs of both were brought into contact. With this condition the animals did not seem to be dissatisfied, since they remained as they were fixed, and finally united themselves in one body and enjoyed their food in common."

It will be noted that Prof. Clark relates these "feats" of the Hydra as tho their supra-consciousness were involved in, or the prime factor thereof—a supposition which, of course, cannot be entertained for one moment, since these phenomena are all of a physiological character over which the supra-mind has no control, its sphere of activities being confined to the outside world, forcing the conclusion that intelligences operating independent of the supra-mind are consciously and constantly at work in maintaining the integrity of the organism as far as lies in their power.

Commenting on Trembley's experiments, Prof. Clark says: "Not only do we see that these lowly organized creatures may reproduce a lost part, but that they are able even to resign their individuality in order to fit themselves for the new conditions in which they are placed."

Since their individuality and subconsciousness is the

same identical entity (in the form of psychic energy, the realism of which Prof. Haeckel concedes on page 221 of *World-Riddles*), these creatures do not resign or surrender their individuality, but only modify it in conformity with the new conditions imposed upon them—their cell-souls adapting themselves to the best of their ability. Thus we see in these phenomena not only remarkable manifestations of their executive ability, but also a practical exemplification of the Law of Adaptation which is operative in every phase of organic life.

CHAPTER 8.

THE REGENERATIVE POWERS OF STARFISH AND THE LESSON DERIVED THEREFROM. HOW THE EQUILIBRIUM OF THE ANIMAL AND VEGETAL KINGDOMS IS MAINTAINED. HAECKEL RECOGNIZES A "DIVINE ESSENCE OF THE WORLD."

Continuing his address (*) to the students of Harvard University, Prof. Clark said:

"Proceeding with the enumeration of other cases of artificial division I will mention one which you can easily verify in the common starfish of our coasts. It often happens that a specimen is found having one of the arms much smaller than the others, and now and then with two or three in this condition, or even with only one arm of the five left, the others being represented by little points sticking out of the stumps. Some kinds of starfishes suffer so little violence from the breaking of their arms, that, let them be ever so gently handled by their captors, every limb will drop off voluntarily before the specimen can be transferred to an acquarium."

Here is a phenomenon without a parallel in the entire Organic Kingdom. Animals dismembering themselves while in the hands of their captors—friends or foes, being unable to discriminate between them,—how may we account for these extraordinary occurrences? What strange notion is "back" of these self-imposed disintegrations? Evidently, some "instinct" of self-preservation has asserted itself in a most unusual form. Fearing that their life is in imminent peril, the subminds of these animals have resorted to this method of saving at least one or more *parts* of their "anatomy" from destruction!

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* A course of lectures compiled in book-form and published by D. Appleton and Company under the title of "*Mind In Nature.*"

But how can they accomplish feats that even the highest orders of life are unable to execute? The answer is simple enough when viewed from teleo-mechanical premises. The cell-souls of their remotest ancestors conceived of an idea which never "occurred" to any other kinds of animals, namely, that to "part" with some of their members when placed in jeopardy would be a "trick" that would prove of great advantage in their struggles for existence. This idea, vague tho it was in its incipiency, developed during many generations until it became one of their leading physical and mental idiosyncrasies.

And naturally, they arranged their structure in such a way that by a mere effort of their will they could instantly detach any part or parts to save these, at least, from their supposed impending fate.

This voluntary surrender of parts of their bodies to real or imaginary foes shows also to what extent they control their atomic and molecular constituents; that they must, indeed, all understand each other, tho the inferior atomic and molecular minds naturally obey the injunctions of the more intelligent cell-souls and that they are ever ready to arrange their tissues as these subminds may suggest. Being thus prepared for any contingency, they are enabled to quickly execute the marvelous maneuver of dismemberment described by Prof. Clark in order to escape the dreaded fate of total annihilation, being confident in their ability that each section which may escape the notice of its captor will reconstruct itself into a complete animal again.

Or we may explain these phenomena in the following way. The teleo-mechanics (subminds) of the Starfish have so constructed the "houses they live in" as to enable them in great emergencies to detach their members "on short notice" thereby giving the subminds located in each fraction or segment an opportunity to reorganize themselves along the original lines laid out for them by their stem-cell or cytula, showing that in these species the daughter-cells are endowed with the same cognitions and memories that are the exclusive prerogative of the fecundated ova of the higher animals, as has been heretofore explained. All plants and animals which possess the potency to reconstruct fragments of their bodies into complete organisms, must needs be similarly equipped for the struggle of life to guard against their extermination.

That only the Starfish should possess this gift of voluntary dismemberment for purposes of self-preservation, shows the marvelous diversifications the minds in Nature can assume; or call it versatility if you will, no two being

precisely alike in kind, quality or degree. And withal, each and every one is undergoing constant metamorphoses from lower to higher types, and from higher to lower again, owing to their physico-dynamic concomitants' retroactive properties upon which both their appearance and the nature of their respective attributes depends.

It may be asked: why did the cell-souls of other animals and plants not recognize the advantage of these means of self-preservation during their incessant struggles for supremacy? What influences, if any, were brot to bear upon those highest forms of minds in Nature, the subliminal consciousness of Man, as well as upon those immediately beneath him in the scale of life, that prevented them from fortifying their various organic structures in a similar manner against the vicissitudes of life to which they are constantly exposed? In reply would say that if to the inferior orders no advantage in one respect, at least, had been given over the superior or more favored ones, these would soon have exterminated the weaker ones which would inevitably have resulted in the extinction of all animal life on this planet. Hence by endowing the lower orders with regenerative powers superior to those of the higher types of life, the potential equilibrium between all is maintained and the perpetuation of the Organic Kingdom assured.

Yet the author of *World-Riddles* can see "no purpose in the drama of Creation", tho this would seem rather incompatible with his recognition of the "divine essence" of the world on pages 20 and 21 and with numerous other affirmations of psychic factors scattered thruout his volume, neither of which factors can be logically dissociated from purpose or conscious intelligence.

It would be the task of his life to discover even the faintest movement in Nature in which some kind of a purpose is not clearly revealed.

The memory of the cell-souls upon which all their reproductive and regenerative processes depends, has been recognized by Dr. Maudsley in these words: "In every nerve-cell there is memory, and not only so, but there is memory in every organic element of the body." But he also fell into the incomprehensible error of considering this cellular memory of an unconscious character. Must mind not be ***cognizant*** of what it remembers? !

CHAPTER 9.

FRAGMENTS OF PLANARIA RECONSTRUCT THEMSELVES INTO COMPLETE ANIMALS. ANALOGOUS FORCES OPERATIVE IN LOBSTERS, SPIDERS, LIZARDS ETC. THE BRAIN OF THE PLANARIA AN ORGAN OF CONSCIOUSNESS.

Returning to the story of marvels related by Prof. H. J. Clark, we find these further particulars on page 92:

"In an experiment upon a more highly organized animal, I succeeded, after cutting it in two across the middle of the body, in obtaining most ample proof of its regenerative powers. It belongs to the class of Worms, and is known as the Flat-worm or Planaria. There are numerous species in our ponds, where they creep over surfaces of stones and acquatic plants. . . The mouth is at the middle of the body on the under side and opens into a short cylindrical proboscis which when retracted lies in an oval cavity. From the latter, the intestine extends in three directions. . . The reproductive organs are situated mostly in the posterior half of the body, and their opening lies half way between the proboscis and the end of the tail. The nervous system consists principally of an oval mass which lies across the anterior end of the body. . .

"If, now, the animal is cut in two at a point just behind where the two posterior branches of the intestine part from the proboscis, the anterior half of the body will, in order to become perfect again, have to reproduce the posterior branches of the intestine, a new mouth and proboscis, and the whole of the reproductive organs; whilst the posterior half must do the same for the anterior branch of the intestine and the main part, the so-called brain of the nervous system."

Now does this brain not stand in the same relation, functionally, with the Planaria and other lowly organisms as that in which the most complex brain stands to the highest animals evolved, thereby performing the same conscious functions? If so, then what becomes of Haeckel's declaration on page 117 that "Modern comparative Psychology considers *conscious* presentation to be a secondary phenomenon of mental life which is entirely wanting in plants and the lower animals, and is only developed in the higher animals"? And this on page 119: "With the highest stage of development of the animal organization, consciousness arises as a special function of a certain central organ of the nervous system." Have these highly complicated and necessarily consciously performed

mechanicisms of the Planaria, in which their brain plays but a subordinate part, (its sphere of usefulness being confined to the affairs of the outside world, as are all specialized cerebral organs), not disproved the foregoing conclusions?

Continuing, Prof. Clark says: "After the division was made, the process of reproducing the lost parts of each half was watched from day to day and the method of procedure carefully noted. As has been stated by others who have performed this experiment, the two halves crawled off as if nothing had happened—the anterior portion preceding an imaginary tail (which the *forward* cell-souls still *remembered*, H. W.), while the posterior part followed an equally ideal head and brain." (Which the cell-souls of the rear part still retained in their mind. H. W.)

Now why did the posterior half which had been despoiled of the head and brain, manifest precisely the same conscious judgment in all its movements as did the forward part with its cerebral organ? Simply because the head-less part was now under the exclusive control of its subconsciousness which has its seat not in a special organ, but in every atom, molecule and cell of the body (plant or animal.) But that these lowest forms of organic life possess these reconstructive capacities exclusively, proves that all cells of these lowly creatures are endowed with the same potencies in the form of definite cognitions of their entire organic complication, which pertain only to the germinal vesicles (sperm and ova) of the higher orders of life.

In other words: These experiments have demonstrated that each cellule of the Planaria (as well as of all other animals manifesting the same regenerative powers) is cognizant of all the characteristics of the "colony of cells" of which it forms a constituent part,—this being a property confined in higher organized beings only to the reproductive cells. These cognitions naturally enable the lower organisms to duplicate whatever part or parts they may lose in the struggles of life, provided a sufficient number of cells remain intact to effect a complete reconstruction of their body. How they proceed is thus described by the author of "*Mind In Nature*":

"By frequent observations upon the newly developing parts I ascertained that the restored organs were not formed all at once, but gradually in this wise. From the anterior half a point insensibly budded out at the cut end, and within this projection a clear spot appeared which eventually proved to be the retiring chamber or sheath of

the proboscis when retracted within the body. Next the proboscis with a gradually defining outline made itself apparent, and at the same time irregular branch cavities became visible in the new surrounding tissue, and as they grew more distinct, they could be traced along toward the old branches of the intestine.

"In the posterior half, the first step towards reconstruction was an approximation of the anterior ends of the two lateral intestinal branches toward the base of the proboscis with which they made a direct channelled communication by projecting an outgrowth toward the central part of the body, the side of which having in the meanwhile built a tissue wherein to place these channels of communication."

Can anything be more self-evident than that each cell-soul was fully aware of how to proceed in its own particular work of regeneration?

In next paragraph Prof. Clark says: "Nor does this process of reproduction obtain only upon a single section of the Planaria, for when cut into several more pieces, each part will reproduce what is requisite to complete the mangled organism. And yet this is not the end of this story of marvels, for among animals still higher than the worms the instances of the reproduction of lost parts are none the less remarkable. The tail of a lizard, or the legs of Crabs, Spiders, Lobsters are reproduced after being broken off."

Can any one follow the recital of these and similar teleological (because purposive) mechanicisms which are constantly witnessed all around and within us, as instanced in the growth of new hair, nails, skin etc. where lost, without recognizing the invisible artificers who alone are qualified, by virtue of their inherited conscious memory of the lost parts, to restore them as originally designed by their genitors?

CHAPTER 10.

"PHOENIX-LIKE—HYDRA, POLYPS, STARFISH, PLANARIA ETC. ARISE OUT OF THEIR ASHES." MECHANICAL AND CHEMICAL DISINTEGRATION. ORGANIC IDIOSYNCRASIES. HAECKEL'S, SPINOZA'S AND VON BAER'S PANTHEISM. HAECKEL RECOGNIZES THE "WONDERFUL ARCHITECTURE OF THE RHIZOPODS BUT FAILS TO DISCOVER THE ARCHITECT. DISSECTING AMOEBA.

"Now what is artificial division", asks Prof. Clark on

page 94, "which in Hydra, Infusoria and Planaria may be carried to such an extraordinary extent without killing them? Is it not decomposition? Do we not see Hydra divided to the minutest degree, almost resolved into its original elements as it were, decomposed by the slicing operations of Trembley, and yet Phoenix-like it arises out of its own ashes?"

Very true, yet this great difference has to be noted between mechanical segmentation and chemical decomposition : in the former case the cellules of each section remain intact (due care being observed not to injure them), hence their inherited mnemonical ideations which enable them to duplicate the lost parts are not interfered with, while in chemical disintegration the cells themselves are destroyed and with them the memories of the animal's or plant's physical and mental idiosyncrasies. By this term I understand the physical and mental peculiarities, characters or distinguishing features of an organism, and, I may add, of the nature and properties of inorganic bodies as well. For have atoms, molecules and plastidules (the connecting links between organic and inorganic matter) not also their peculiarities?

If, then, but a single cell of one of these lowly beings remains intact after a life-or death-struggle, a new organism will arise therefrom patterned after the original type since the reproducing cell-soul is cognizant of no other, and providing always that the requisite material is within its reach out of which a new "colony of cells" may be constructed. Each and every cell thus has the same physiological and psychological value as the stem-cell from which they were derived, and they may, indeed, be regarded as such in view of their exceptional procreative powers. Yet these are denied to the daughter-cells of the highest organisms evidently for the providential purpose of saving the former from annihilation which would result in the extinction of all higher forms of life.

But the author of *World-Riddles* can still see "no purpose in the drama of Creation", tho it may be asked : what function has his "divine essence of the world" to perform in the economy of Nature; or what office has his "sensitive and thinking substance" to fill therein? If the monistic theory of descent and the blind struggles for existence are all sufficient to account for the processes of Creation and Development, why accept *in addition* the God of Spinoza's "stately pantheistic system" of which he says on page 21:

"We adhere firmly to the pure, unequivocal Monism of Spinoza : Matter, or infinitely extended substance, and

spirit (energy) or sensitive and thinking substance, are the two fundamental attributes or principal properties of the all-embracing divine essence of the world."—Monism is a modern name for Materialism which recognizes no spirit, nor thinking substance nor divine essence in Nature, hence Spinoza's doctrine is pure Pantheism. This system Haeckel takes to be "the loftiest, profoundest and truest thought of all ages." (pages 215. 216.) What difference is there between this "profound" system and Karl Ernst Von Baer's, who expressed it in this form (rather vaguely translated from the German):

"The one Great Thought (Infinite Mind) which controls all the different aspects (phases) of Evolution, is the same that gathered (assembled) the scattered sections of (ether-filled) space into spheres and formed them into solar systems. This Thought (Mind-force) is no other than Life itself, and the Words and Syllables in which it finds expression are the diversified forms of living things." (p. 267). (Parentheses are mine. H. W.)

Yet Haeckel states in same paragraph that "this proved very acceptable to our opponents"; he thereby repudiating in a most emphatic manner what he had declared to be "the loftiest, profoundest and truest thought of all ages"!

"Consistency—thou art a jewel!"

As between Spinoza's and Von Baer's, the latter's concept of the Cosmos is by far the grandest and most sublime. It is certainly the most concise, most specific, and most comprehensive in its scope.

Returning to the subject-proper, Prof. Clark says in next paragraph: "But let us go even nearer to the point we are aiming at, for we can do so without drawing in the least upon our imagination. I have pointed out the exceedingly simple structure of the Rhizopods, particularly that of Amoeba. The closest examination of this animal does not reveal the least sign of a cell-like structure; it is simply a gum-like moving mass which could not possibly be more simple unless it were resolved into a fluid condition. This creature may be divided, and even divides itself, more minutely than the Hydra allows; in fact, there is no conceivable limit to the minuteness with which it may be cut up, yet each subdivision moves and seizes its prey just as does the main stock from which it was separated. We could not imagine a more minute division unless it were reduced to the ultimate atoms of the Physicist or actually decomposed and yet retain the appearance of life."

From which it appears that the simplest organic forms

possess the greatest tenacity, the object of which is evidently to secure their survival in the struggles of life, since the existence of the higher forms depends upon that of the lowest.

But more powerful microscopes than were at Prof. Clark's command in 1860, have since then revealed in these animalcules an amazing complexity of structure. Even Haeckel refers on page 178 to "the wonderful architecture of the Rhizopods, the Thalamophorae and the Infusoria"—the subject connected therewith being of sufficient significance to warrant its presentation here in full:

"***Cellular Theory of Consciousness.***—It is a vital property of every cell. The application of the cellular theory to every branch of Biology involved its extension to Psychology. Just as we take the living cell to be the 'elementary organism' in Anatomy and Physiology, and derive the whole system of the multicellular animal or plant from it, so, with equal right may we consider the 'cell-soul' to be the psychological unit, and the complex psychic activity of the higher organisms to be the result of the combination of the psychic activity of the cells which compose it. I gave the outlines of this *Cellular Psychology* in my *General Morphology* in 1866, and entered more fully into the subject in my paper on 'Cell-Souls and Soul-Cells.'"

The latter term implies, of course, that there are cells without souls. While no living cellules have ever been discovered which do not exhibit under the microscope the same degrees of consciousness, his refusal to grant them this essential basis of soul-life is tantamount to denying it to them altogether. We must either grant souls or consciousness to *all* cells, or to none.

"I was led" he explains, "to a deeper study of this 'elementary Psychology' by my protracted research into the unicellular forms of life. Many of these tiny (generally microscopic) Protists show similar expressions of sensation and will, and similar instincts and movements to those of higher animals; that is especially true of the very sensitive and lively Infusoria. In the relation of these sensitive cell-organisms to their environments, and in many other of their vital expressions, for instance in the wonderful architecture of the Rhizopods, the Thalamophorae and the Infusoria, we seemed to have clear indications of conscious psychic action. If, then, we accept the biological theory of consciousness, and credit every psychic function with a share of that faculty, we shall be compelled to ascribe it to each independent Protist-cell. In that case its material basis would be either the entire pro-

toplasm of the cell, or its nucleus, or a portion of it. In the 'psychade theory' of Fritz Schultze the elementary consciousness of the *psychade* would have the same relation to the individual cells as personal consciousness has to the multicellular organism of the personality in the higher animals and man. It is impossible definitely to disprove this theory which I held at one time. Still, I now feel compelled to agree with Max Verworn in his belief that none of the Protists have a developed self-consciousness, but that their sensations and movements are of an unconscious character."

There is no distinction between consciousness and self-consciousness. Whenever any being becomes momentarily aware of himself or itself, temporary self-consciousness ensues. Every being that is conscious, may, therefore, become self-conscious.

But could Haeckel not state in a few words on what his rejection of "the clear indications of the conscious psychic action of the Protists" is based?

It seems that all the unmistakable evidences of consciousness and intelligent design were deliberately ignored because they conflicted with the cardinal principles of a doctrine established long before these revelations of the microscope were made. For an antequated notion, the evidence of his own senses had to be set aside, even as was Huxley's "unseen artist who as with his plans before him strives with skilled manipulation to perfect his work," tho a stronger aid to the vision than an achromatic lens can furnish would, he thought, have revealed this "molder of the protoplasmic clay", he being firmly convinced by its purposive and systematic movements that nothing save intelligence could produce them.

The injury this materialistic fallacy: "no brain, no mind" has inflicted on Humanity by leaving it in ignorance of the true nature of cosmic phenomena cannot be over-estimated; it can be paralleled only by the extent to which it has impeded scientific progress. It is responsible for all "the confusion and obscurity still prevailing in Science and Philosophy." So says Haeckel in the quoted words, and he could truly have added: and also for the Egyptian darkness which hangs like a pall over the mind of man, and against the removal of which, materialistic fanaticism struggles with all its might and main.

Since in the sensations, irritability, will, memory and other psychic functions he concedes to the micro-organisms, are expressed love and hate, fear and courage, choice and judgment, in fact "the majority of the emotions characteristic of the higher Mammalia", (using M.

Binet's phraseology) and which psychic functions can be no more devoid of consciousness than our own, it may be in order to ask on what grounds Haeckel's contention that a centralized nerve-system is the indispensable instrument of these faculties, is founded.

Also, are unconscious sensations, volitions, memories, judgments etc. not as palpable antitheses as mindless intelligence, insensate feelings and lifeless vitality?

CHAPTER 11.

ANALOGOUS MIND-FORCES OPERATIVE IN INORGANIC MATTER. PROF. CLARK'S "SECONDARY CAUSES." THE PROVISION MADE AGAINST THE EXTINCTION OF LOWER ORDERS. WHICH OR WHO DISPLAYED GREATEST INGENUITY IN THESE EXPERIMENTS: CELL-SOULS OR MAN? THE SENSE-PERCEPTIONS OF ATOMS, MOLECULES AND CELLS.

That mind-forces capable of healing wounds are operative to a greater or lesser extent also in inorganic substances may be seen from the fact that crystals suspend their normal growth until the symmetry of their form which had suffered defacement has been restored, showing that their unorganized mind-element has recognized the injury received and has concentrated its molecular mechanicisms upon the work of restoring the fractured parts. Nothing but forces analogous to those which heal wounds in plants and animals and reconstruct missing members can account for these and similar phenomena in the inorganic world.

Prof. Clark asks: "What is artificial division but decomposition when carried to that degree wherein it is resolved almost into its original elements?"—There certainly is no difference when carried to that extreme limit, but this can never be reached with the knife of the vivisectionist.

Yet to all intents and purposes there is no difference between artificial segmentation and the "divisions" to which these humble creatures are subjected when captured by voracious enemies. Decomposition into their original elements will probably be the fate of the majority of their fragments, but if some should be so fortunate as to escape this fate—or the scalpel of a Trembley, Clark, Ehrenberg and others engaged in fathoming the mysteries of organic life—the cell-souls or subminds of such fortunate remains

are equal to the emergency and proceed to reconstruct their shattered "colony" along the original lines laid out for them, as tho nothing had happened.

This is not saying, however, that they experienced no sensations akin to pain during these operations. Unquestionably they did, but being devoid of a nerve-system, their sense-perceptions are naturally of a lower order; those of inorganic bodies still lower, and those of molecules and atoms the very lowest in degree of intensity.

The explanation of these and allied organic phenomena Prof. Clark partly finds in the following proposition on page 108 of his volume: "Therefore I say that it stands to reason that secondary causes are the visible modes of the action of the Creator's will, and that His great primary fiat has not ceased to exert its influence even at the present day."

But in not specifying these "secondary causes", nor designating the actual factors of these "visible modes", Prof. Clark has left unfilled a wide hiatus between the Creator's will and what it accomplished thru the agency of these mysterious "secondary causes." Is it necessary to identify these agencies with Prof. Huxley's "hidden artists", the teleo-mechanics of Nature, "who as with their plans before them strive with skilled manipulation to perfect their work"?

In view of which it is now in order to ask: who displayed the greatest ingenuity and skill in the cases related by Prof. Clark: Ehrenberg, in slicing Infusoria into several parts, or the cell-souls of each fragment in reconstructing themselves into complete animals? Trembley, in forcing one Hydra into another and running a bristle thru both to keep them from "righting" themselves, or their subminds in re-arranging their entire structure and adjusting it to the new conditions, enabling them even to enjoy their food in common? Clark, in dividing Planaria crosswise and lengthwise without endangering the life of each fraction, or the "secondary causes" operating therein, which, after first crawling off as tho nothing had happened, rebuilt each segment into a new animal while perhaps "laughing in their sleeves" at the easy way (*to them*) in which they had outwitted their tormentor?

CHAPTER 12.

"BY THEIR FRUITS SHALL YE KNOW THEM" AS APPLICABLE IN NATURE AS IN ART. DARWIN'S AND TYNDALL'S DENIAL VS. HAECKEL'S AVOWAL THAT EVOLUTION SOLVES PROBLEM OF ORGANIC LIFE. THE MATERIALIST'S NONENTITIES.

It may be pertinent to ask here: If the marvelous reconstructive powers of these lowly beings are executed without conscious judgment, as is held by Haeckel and his school, why is it essential in the vastly inferior domains of Art? Why should intelligence be required in the lesser and inferior fields, and none in the infinitely greater and superior ones? Why should the adage: "By their fruits shall ye know them" not be as applicable to determine the judgment exercised in one as it is in the other? Why is the mental capacity of the teleo-mechanics of Nature not as evident and determinable in all of their works, as it is in those that are built by the hands of Man?

Even as a carpenter finds it more difficult to reconstruct an edifice out of the *debris* of one destroyed by a storm than out of new material, so must it require keener judgment to restore the mutilated remains or parts of Polyps, Hydras, Starfish or other lowly forms of life, than to build up new ones where the unseen artists at work in fecundated cells have the whole ancestral experiences and memories of their predecessors to direct their labors. In the latter case all their plans are laid out for them before hand, while in the former the cell-souls are confronted with the task of bringing order out of chaos.

In view of these considerations how vague Haeckel's declaration on page 258 that: "Darwin gave us the key to the monistic explanation of organization in his theory of Selection which enabled us to trace the splendid variety of orderly tendencies in the organic world to mechanical, natural causes."

The natural causes involved in the principles of Natural Selection have no existence in themselves, hence cannot have had the remotest bearing upon the orderly tendencies in the organic world. The term "selection" implies choice and judgment, and these no one concedes to a nonentity. It is also extremely difficult to see where the "mechanical causes" or any kind of mechanicism "comes in" in Natural Selection which consists of nothing but a fortuitous concatenation of adventitious circumstances, all nonentities, pure and simple, hence cannot accomplish anything.

If a nonentity can furnish "the key to the monistic explanation" of organic phenomena, it would be interesting to know how said nonentity proceeds to open the door to Nature's *sanctum sanctorum* so that sage and savage alike can feast their eyes upon her mode of assembling inorganic matter into the marvelously constructed bodies of the Universe, enabling us to comprehend how "from simple beginnings endless forms most beautiful and wonderful were evolved"—paraphrasing Darwin in his last page of the *Origin of Species*, he himself having so little faith in the efficacy of the principles upon which his development theory is based, that he recognized the necessity of postulating Intelligence back of these phenomena, as may be seen from his conclusion that: "There is grandeur in this view of life with its several powers having been originally breathed by the Creator into a few forms or into one."

A similar lack of faith in the adequacy of the Development theory to explain the phenomena of the Cosmos was expressed by that great champion of Materialism, Prof. John Tyndall, in these words:

"Those who hold the doctrine of Natural Selection or Evolution are by no means ignorant of the uncertainty of their data, and they only yield to it a provisional assent. It does not solve—it does not profess to solve—the ultimate mystery of this universe. It leaves, in fact, that mystery untouched."

In what a glaring contrast to these sincere and truly scientific declarations of two of the greatest physicists of the Nineteenth Century do not the presumptuous affirmations of the Materialists of the present day appear who, with a "London Assurance" worthy of a better cause, pretend that in plain and simple Evolution lies the key to the solution of the World-Enigma.

CHAPTER 13.

THE PROVISION MADE FOR THE PRESERVATION OF LOWEST FORMS OF LIFE AND ITS MORAL. PRINCIPLE OF SELF-DEVELOPMENT THE SOURCE OF EVOLUTION. "A PLOT SO INTRICATE AND YET SO TRANSCENDENTLY SIMPLE". SPENCER'S DEFINITION OF EVOLUTION. DRUMMOND SEES IN IT "THE WORK OF AN INTELLIGENT MIND." WHY THE MECHANICAL EXPLANATION IS ACCEPTED BY MATERIALISTS.

Before concluding this part of our subject, there is another point to consider, tho we have already alluded to

it. We have endeavored to show that but for the extraordinary tenacity of life of the lower orders. their extermination would have been inevitable. In other words: organic evolution would have never attained any higher altitude than that which is reached by a few simple forms of multicellular organisms. But for the provision made for their preservation by endowing them with the wonderful recuperative powers demonstrated by Clark, Trembley, Ehrenberg and others, nothing but the simplest forms of life would have ever appeared on Earth.

Now can we fail to see a higher purpose than that of a mere instinct of self-preservation running thru the unparalleled regenerative capacities with which these simple beings are endowed? Limited as their intellectual faculties must necessarily be to their own conditions in life and to their immediate surroundings—being cognizant only of their own sensations and requirements—what can they know about the evolvement of higher orders of life? What can they care, when their own period of existence has expired, whether organic life in general continues after them or not? Is it reasonable to suppose that they can have even the slightest conception of why they are thus invested with these extraordinary reproductive powers? Would they have any desire to contribute their mite of psychic energy towards evolving beings superior to themselves? Would it be to their interest or in their nature to do so? If not, then are we forced tc postulate some intelligence cognizant of the necessities of organic life in general, and capable of leading it to loftier planes of existence.

This fact was clearly recognized by canon Kingsley who expressed it in these words: "Where there is an Evolution, there must be an Evolver."—That is to say: Even as there is intelligence "back" of the evolution of the arts of Civilization, so must intelligence govern the evolution of the infinitely more wonderful works of Nature.

It would be the hight of absurdity to invest the inferior atomic and molecular mind-forces with the potencies essential to the upbuilding of organic life, unless we concede to them a self-developing property thru which the products of their labor, i. e. the individual cell-souls of plants and animals, were gradually enabled to acquire the qualifications essential to guide the processes of Evolution to their final culmination in Man.

Hence my proposition that the subminds representing our genealogical tree of life, accumulated by infinitesimal stages covering millions of generations, the entire ances-

tral fund of cognitions, memories and ideations which the cell-souls involved therein "materialized" into the physical and mental characteristics of the human race.

In other words : the entire line of experiences of our ancestral cell-souls served as determinants in the processes of segmentation which resulted in the up-building of Man.

That these factors of Evolution were themselves evolved was partly recognized by Henry Drummond in these words on page 264 of *The Ascent of Man:* "The processes of Evolution evolve as well as the products; evolve with the products. In the environments they help to create or to make available, they find a field for new creations as well as further reinforcements for themselves."

But processes are, like "Natural Selection" and "Evolution," mere abstract concepts, nonentities, hence unable to create or evolve anything. There must necessarily be antecedent forces *governing* the processes of Evolution, and these antecedent factors which "evolve with their products" are the countless myriads of subminds comprised within our ancestral line of ascent from the simplest self-evolved Chromacea up to the present time.

To be more definite and concise would say that the teleo-mechanics of Nature, from the atomic minds up to the cell-souls of our own subconsciousness (our supraminds being modifications of these, effected thru a specialized cerebral organ devised for that purpose) develop *pari passu* with and thru the bodies they build up, even as our "principal" (supra) mind develops with and thru the works of Art it designs and constructs.

Considering that it is the nature or tendency of conscious mind of whatever grade, kind or quality it may be, or wherever it is operative (which is everywhere within illimitable space) to always seek to improve its condition in life by forming congenial *liaisons*, what can be more inevitable than that its mental horizon should continue to broaden in both domains of Nature and Art so long as conditions are favorable to its unfoldment and expansion! And herein lies the key to the problem of Evolution itself, which Drummond (tho a Theist) considered insoluble, as seen in these (prophetic) words on page 4 of his Introduction:

"Whether Evolution be told by a Haeckel or a Wallace, we accept the narrative so far as it is a rendering of Nature, and no more. . . At present there is not a chapter of the record that is fully told. The manuscript is worn with erasures, the writing is often blurred, the very

language is uncouth and strange. Yet even now the outline of a continuous story is beginning to appear—a story whose chief credential lies in the fact that no imagination of man could have designed a spectacle so wonderful, or worked out a plot at once so intricate and yet so transcendently simple. . .

"To give an account of Evolution, it need scarcely be remarked, is not to account for it. No living thinker has yet found it possible to account for Evolution."—Very true, but the reason for these failures is found solely in the fact that researches have been confined exclusively to physical premises, and these can account only for physical effects, hence cannot cover the facts of Evolution in which all intelligent people intuitively recognize *psychic* factors, because purposive design is clearly manifested both in these facts and results.

In other words : The processes of Evolution which involve morphological "changes from an indefinite incoherent homogeneity to a definite coherent heterogeneity through continuous differentiations and integrations," (quoting Herbert Spencer), can certainly never be explained by resorting to purely mechanical factors or physico-chemical reactions, for these have all "been tried and found wanting."

Of the above quoted definition of Evolution, Drummond says on page 5: "the formula of which the *Contemporary Reviewer* (sarcastically) remarked that 'the universe may well have heaved a sigh of relief when, through the cerebration of an eminent thinker, it had been delivered of an account of itself'—is simply a summary of results, and throws no light, though it is often supposed to do so, upon ultimate causes. . . There is everywhere at this moment the most disturbing uncertainty as to how the Ascent even of species has been brought about."

Thus the *facts* of Evolution—even of the auxiliary principle of Natural Selection, as far as it could facilitate development and aid in the diversification of organic structure—no one contests, even Drummond saying from his theistical viewpoints under the caption : "*Why Was Evolution The Method Chosen?* The answer of modern natural Theology is that the evolutionary method is the infinitely nobler scheme. A spectacular act (ala Genesis) savors of the magician. ("Let there be a world! and! *presto! !*—there was a world"!) A mere exhibition of power appeals to the lower nature; but a process of growth suggests to the reason the work of an intelligent Mind." (Parentheses mine. H. W.)

"While it is true," Drummond says on same page,

"that, as Mr. Alfred Russel Wallace affirms in his latest work, that 'Descent with modifications is now universally accepted as the order of Nature in the organic world,' . . the attacks on the Darwinian theory from the outside were never so keen as are the controversies now raging in scientific circles over the fundamental principles of Darwinism itself. . . Meantime (Drummond says on next page) all prudent men can do no other than hold their judgment in suspense both as to that specific theory of one department of Evolution called Darwinism, and as to the causes and factors of Evolution itself."

But these the Haeckelian school of philosophy persistently ignores, its votaries confounding them with Evolution itself, and even professing to see in the principle of Natural Selection "mechanical causes," when there is nothing whatever of mechanicism or of a like nature about it. But it savors of a *materialistic* explanation of organic phenomena—"the desideratum devoutly to be wished"—and is accepted on the ground that a totally inadequate interpretation of cosmic events is better than none at all!

But lest I be suspected of misrepresenting Haeckel's position, let me quote the following passage on page 258 of *World-Riddles:*

"Since Darwin gave us the key to the monistic explanation of organization in his theory of Selection forty years ago, it has become possible for us to trace the splendid variety of orderly tendencies of the organic world to mechanical natural causes."

And on next page: "Mechanicism alone can give us a true explanation of natural phenomena, for it traces them to their real efficient causes, to *blind and unconscious agencies* which are determined in their actions only by the material constitution of the bodies we are investigating. Kant himself declared that there can be no science without this ***mechanicism of Nature*** . . . but when he subsequently elucidated the complex phenomena of organic life in his critique of the teleological system, he declared that these mechanical causes were inadequate; that in this we must call *final* causes to our assistance."

Science feeds and feasts on the mechanicisms of Nature by which we understand the atomic, molecular and cellular processes of "matter" thru which, under the direction of its immanent mind-element, worlds were created, but as for the mechanicism of "Natural Selection" — — — *Science* ***stands aghast! ! !*** and thinkers ***are dumbfounded!***

PART III.

AN OBJECT-LESSON IN TELEO-MECHANICS. THE SIPHONOPHORES OR COLONIAL SEA-NETTLES. *

CHAPTER 14.

MOST GORGEOUS FORMATIONS OF NATURE'S INEXHAUSTIBLE WEALTH. THE MULTIPLE SOULS OF THE SIPHONOPHORES. "GREAT MYSTERY OF CREATION." ANIMALS COMPOSED OF WATER.

How near Prof. Haeckel came at one time in accepting views almost identical with those herein presented, may be seen from the following extracts from a reprint in Dr. Paul Carus' work on "*The Soul of Man*", Dr. C. introducing the subject in these words on page 239:

"Some time before the terms double ego and double souls were employed by modern Psychologists, Professor Haeckel had spoken of the double soul of the Siphonophore, a Medusa of the Mediterranian Sea. The Siphonophore consisting of many individual medusas, and yet exhibiting unitary perception and will, is popularly called a colonial sea-nettle. . . . It consists of a stem, being an elongated hollow polyp, an air-bladder, locomotors or propellers, feeders or nutritive polyps, intestines, liver-glands, mouth, throat, nettle-battery, male and female polyps, etc. (They often attain a size of six feet in circumference. H. W.)

"Professor Haeckel says: 'The Siphonophores or colonial sea-nettles are found floating on the smooth surface of the tropical seas. They belong to the most gorgeous formations of Nature's inexhaustible wealth, and whoever has been fortunate enough to witness the sight of living Siphonophores will never forget the glorious spectacle of their wonderful forms and motions. They are best compared to a floating flowerbush, the leaves, blossoms and fruits of which look like polished crystal-glass of the most graceful forms and delicate colors.

"Each single appendage of the floating bush is a separate Medusa, an individual in itself. But the different Medusae of the community through division of labor have

* Acalepha, branch Radiata, genus Medusa.

assumed different specialized forms. One part of the Medusa-community controls the natatory function, another the reception of food and digestion, a third sense-perception, a fourth defense and aggression, a fifth the production of eggs, etc. All the different functions which a single Medusa performs are thus distributed among the different citizens of the colony, and all the individuals of the colony have transformed their bodies to accord with their respective duties.

"As in a community of ants, so in the Siphonophore-republic, a number of different formed animals have combined into a higher social organization. But, while in the republic of ants the ideal bond of social interests unites all the individuals as free and independent citizens, in the Siphonophore-republic the members of the community are by bodily connection riveted like slaves directly to the yoke of the communal unity. Still, even in this close coherence, each person is endowed with an individual soul of its own. If severed from the common stem, it can move about and live and have an independent being. It possesses a common sensation which at once communicates the perceptions of the single individuals to all the others. Thus, each of the Medusa-citizens might well exclaim with Faust: 'Two souls, alas! do dwell within my breast.'"

If, then, one of these sea-nettles is composed of, say, ten Medusas, and each one is endowed with two souls, we have animals possessing at least twenty different souls, each one with a special function of its own. It should also be noted that the Professor describes them solely in terms of mind, referring to them as persons, citizens, slaves; as individuals who, in the division of labor, have assumed specialized duties, transforming their bodies to conform with their functions, and generally adapting themselves to their environs. He credits them with having combined into a high social organization, each individual Medusa not only possessing a soul of its own, but also a share in the communal soul (sub-consciousness) of the entire colony. Yet, recognizing all these wonderful mental faculties in beings so low in the scale of life, the Professor denies consciousness to all but the higher animals, he regarding "the centralization of the nervous system to be a condition of consciousness and that is wanting in the lower animals" (p. 175); he also specifying those that possess "the highest psychic function, *conscious perception*, as man and the higher vertebrates, and probably some of the higher invertebrates." (p. 111.)

To grant the Siphonophores the above mentioned psychic faculties, and deny them their essential basis, *consci-*

ousness, is an inconceivable and contradictory proposition.

Of these highly interesting and instructive animals, Zell's Cyclopedia says under subject of "*Acalepha*", of which the Siphonophores are a sub-order:

"A class of marine invertebrate animals, comprehended in the branch of Radiata, and otherwise called jelly-fishes. The genus Medusa has a nervous system and senses (*), a nervous and muscular system, a reproductive system, the power of stinging when touched, and is phosphorescent. With their strange bodies and ***wonderful faculties*** (!) they are still one of the mysteries of creation. In them, *we find the most important functions of life performed in bodies which are often little more than a mass of jelly*. They grow frequently to several feet in diameter and yet we cannot determine what are their organs of nutrition; they move with rapidity and yet we cannot demonstrate accurately their muscular system. Their secretions are abundant, yet the secreting organs remain to be discovered. They seem too weak to seize any vigorous animal, yet fishes are their prey. Their delicate stomachs appear to be incapable of acting upon such food, yet it is digested within a very short time. Most of them shine at night with great brilliancy, yet we know little or nothing of the organs by which their phosphorescence is elaborated. They sting the hand which touches them, but how they do so, still remains a mystery. If we take one weighing perhaps five or six pounds, and set it aside to *let its fluid substances drain away, we find that all the matter left is a cobweb weighing not as many grains as did the living creature pounds*. And lastly, if we examine the fluid drained away, we find that it is sea-water indistinguishable from that wherein the creature lived. What must we say to this? That the salt water of the sea, imprisoned in a web so delicate as scarcely to be visible, is moulded into beauteous shapes infinitely diversified, and that, being possessed of life, the mass thus formed becomes susceptible of being endowed with the wonderful faculties we have described. . . The *Cydippe Pileus* is a most elegant animal whose body when taken from its native element and placed in a large bowl, looks like a globe of purest ice, and is, indeed, almost as deliquescent, for when exposed, *it melts away and evaporates to almost nothing*—no residue being left except a film so delicate as to be scarcely visible. Still, while alive, few objects could excite more pleasurable emotions in the observer."

* Think of "unconscious senses"!

This explodes Haeckel's 'Carbon-theory', and the materialistic fallacy that protoplasm, *as we know it*, that is, a compound consisting of oxygen, hydrogen, nitrogen, carbon, sulphur, phosphorus and possibly several other elements, constitute the essential substratum of plant and animal life Haeckel thus says on page 256:

"The combination of elements which are responsible for the vital phenomena of organisms are compound protoplasmic substances of the group of albuminates. . . The only element which is capable of building up these *compound albuminates in* ***combination*** with other elements—oxygen; hydrogen, nitrogen and sulphur—is carbon."

This combination may also be very appropriately termed *bioplasm and psychoplasm.*

Here we have five elements of an albuminous character considered essential to build up bodies manifesting vito-psychic life, yet all the elements that have been discovered in beings to whom Haeckel concedes personality endowed with a dual soul and performing various social and physiological functions, and which beings have been accredited by other physicists with "the most important functions of life and other wonderful faculties", is oxygen and hydrogen,—pure water holding in solution a minute proportion of some other element capable of imparting to them a small degree of firmness and stability.

Can these facts possibly be reconciled with the materialistic position taken by Prof. Haeckel in the last quoted extract?

CHAPTER 15.

WATER TRANSFORMED INTO ANIMALS. AN ANTEQUATED FALLACY EXPLODED. THE "FIRST APPEARANCE OF CONSCIOUSNESS" (?) QUALIFIED BY HAECKEL WITH A PROVISO. THE TEST OF ANÆSTHESIA.

Under same name, ("Acalephae") Johnson's Encyclopedia says of the Siphonophores: "The body of these animals is composed of a transparent, gelatinous substance, and in one section of the class, the true Medusa, the body is entirely unsupported by any hard framework. The quantity of solid matter contained in them is very small, over ninety-nine per cent being water; they may therefore be described as almost 'living water'. . . The phosphorescence of the sea is partly caused by multitudes of Acalephae. They are propagated by eggs which produce a brood totally different from the parent and resembling

Infusoria which assume a polyp-like form, and by gemmation produce a progeny which in time attains to the original parental form."

The ontogenetic and phylogenetic history of their ancestral lineage thus repeats itself in these lowly beings the same as it does in the higher orders of life—the law of Heredity that "like begets like," asserting itself in the end.

Being entirely unsupported or strengthened by a solid framework as are all other animals of their dimensions, (they varying from three to six feet in circumference at maturity), would leave them at the mercy of more formidably constructed antagonists if their "communal soul" or subconsciousness had not devised a substitute for the absent bony structure in the form of nettle-batteries distributed thruout these "social communities of Medusas." These ingeniously contrived electrical apparatuses serve both in the capacity of searchlights with which to illumine surrounding objects to apprize them of approaching enemies, as well as in searching for food, and also in repelling by electric shocks all creatures inimical to their safety.

Yet Haeckel can see no conscious intelligence in these beings, saying on page 175:

"Darwin, who most accurately distinguished the various stages of consciousness, intelligence and emotion in the higher animals, points out how difficult, or even impossible, it is to determine the first beginning of this supreme psychic faculty in the lower animals. Personally, out of the many contradictory theories, I take that to be the most probable which holds the centralization of the nervous system to be a condition of consciousness."

This, of course, debars the Siphonophore-Republics from the privilege of enjoying consciousness in all of their sociological, physiological and psychological phases, yet the learned author of *World-Riddles* qualifies the above view with this proviso on page 111: "The highest psychic function, *conscious perception*, is *probably* also developed in some of the higher Invertebrates, notably the Articulata."

Since he has recognized the dual soul of the Siphonophores, he probably includes these in the "higher Invertebrates," thus *granting conscious perception* to them, but *denying* it to them again on the ground that they are devoid of a centralized nerve-system! This in the face of the fact that even undifferentiated cellules can become benumbed with cold and rendered unconscious with chloro-

form, nicotine or other anaesthetics—proof-positive of their consciousness while not under their influence, that is, under all normal conditions. Now since all simple or complex organisms are thus susceptible to these agents, this should settle the question of their consciousness for all time. Only the conscious element of their atomic constituents is immune against them because the properties of matter are as eternal as is the conscious force of which it is composed.

What stronger evidence of this postulate can we demand indeed, than that bodies composed of over ninety-nine per cent of water, i. e. of oxygen and hydrogen, with a minute fraction of some other element to give them a modicum of firmness, exhibit the wonderful (necessarily conscious) psychic faculties Haeckel and other Naturalists credit them with.

And do these facts not explode as a fallacy the generally accepted materialistic thesis that at least five or six elements constitute the essential basis of all forms of animal and vegetal life?

Returning to Haeckel's description of the Siphonophores he says:

"The egoistic soul of the individual lives in compromise with the social soul of the community or 'colony' of Medusas."

That is to say: the supra-element of each individual Medusa (to which element he refers as the egoistic soul) is on very amicable terms with the sub-consciousness of the entire community, and why should they not all live in social harmony, seeing their entire welfare depends on their co-operation—each individual having a special function to perform as we have seen, from which each and all derive a certain benefit. While the "egoistic soul" of each Medusa contributes its share to the general welfare of the community by serving as one of its guardians in taking cognizance of the affairs of the outside world for the purposes of nutrition, self-defense and reproduction, the subminds attend to their respective duties in managing the various physiological processes necessary to their existence.

The term "community of cells", as applied to any animal or vegetal organism, is a very felicitous one, tho hardly adapted to the Colonial Sea-nettles, since it would be extremely difficult, owing to their fluidity, to resolve them into individual cells. "Communal soul of the entire colony", is also a very appropriate name for the sub-consciousness insofar as it may be understood as signifying that all the constituents of an organism are in constant communi-

cation with each other thru some simple form of telepathy which enables the cell-souls of each plant or animal to keep *en rapport* with each other for purposes of co-operation upon which the life and welfare of their organization depends.

From the above quoted paragraphs it would appear that when Prof. Haeckel studied the "Siphonophore-Republics" and their governments, he had a most vital truth within his very grasp, but relinquished it for the obsolete doctrine that without special cerebral organs of a certain degree of development there can be no consciousness and that "the psychic processes of the Protists are unconsciously performed," (p. 152) a palpable contradiction since it affirms (or recognizes) at the outset what it denies in the end, Psychologists being generally agreed that "psychic" and "conscious" are synonymous terms, as will be shown in the concluding Part of this volume.

CHAPTER 16.

THE PRINCIPLE OF "THE DIVISION OF LABOR" EXEMPLIFIED. HAECKEL RECOGNIZES THE COMMUNAL (SUB-) CONSCIOUSNESS OF THE SIPHONOPHORES AND UNWITTINGLY DEALS MATERIALISM A DEATH-BLOW. "INSTINCT" THE VOICE OF THE SUB-CONSCIOUSNESS.

In chapter 14 we quoted the following passage from Haeckel's description of the Colonial Sea-Nettles: "Thus each of the Medusa citizens might well exclaim with Faust: 'Two souls, alas, do dwell within my breast!'"

"But woe to any Medusa," he continues "that in the infatuation of egotism would break away from the communal stock in order to lead an independent life! Unable to perform all the particular functions that are indispensable to its self-preservation, most of which were performed by its fellow-citizens, it must needs soon perish if it be detached from its old companions. For one Medusa of the Siphonophore can only float, another feel, a third only feed, a fourth only catch prey, another repel enemies, etc. Only the harmonious co operation and reciprocal support of all its members, only the communal consciousness, only the central soul, linking all together in bonds of faithful love, can impart a lasting stability to the existence of both the individuals and their totality."

In the above description, the Professor recognized in beings consisting, practically, of but two elements, oxygen

and hydrogen (99 per cent) with a minute fraction of some other substance to give them a modicum of firmness, the same harmonious co-operation of their various members, as well as the same communal (sub) consciousness and central (supra) mind or soul, that is to say, the same intellectual faculties and sentimental emotions which characterize the most complex organisms composed of albuminous compounds, yet all these psychic manifestations occur in what has justly been designated as "living water"! Yet Haeckel and his school insist that *not less than six* elements constitute the essential basis of conscious intellection!

If the teleo-mechanics of Nature had exerted themselves to devise an object-lesson for the edification of man thru which to reveal their *modus operandi* in the up-building and maintenance of organic life, they could not have selected a more forcible illustration of the principles involved than is furnished by the Colonial sea-nettles wherein their methods are so clearly elucidated. These unique "products of the seas" seem, indeed, to be especially designed for Man's enlightenment, for nowhere within the entire range of the Organic Kingdom do we see more palpable evidences of the purposive design of morphological structure than are placed before us in these glorious and enchanting creations of the mind-forces operative in so-called "matter."

Hence we say that altho Prof. Haeckel expressed his views in language largely figurative, yet they must be taken in their literal signification—he having, by no means, "drawn upon his imagination" for his rhetoric or his facts. No exaggeration can be noted anywhere in his illustrations of the "Siphonophore Republics." Greater truths were never uttered than in referring to each separate Medusa as an intelligent being, tho it seems incredible that he considered them so, to judge by his well-known materialistic proclivities which deny conscious mind to all beings not equipped with a centralized organ of cerebration.

In view of which it may not be amiss to observe that when he referred to these utterly brainless creatures as persons and as citizens or slaves (as their mutual relations might warrant), and that the submind of each individual Medusa can transform its body in accordance with any functions for which it might be best adapted, and that the various individuals combined into a higher social organization, and that each one of these "persons" (in whose composition not even a trace of carbon and nitrogen—two of the alleged "essential" bases of organic life—has been

found) is endowed with an individual soul of his (or its) own, the Professor was probably not aware that when he presented these facts to his readers, he dealt Materialism a blow from which it can never recover, since his illustrations apply with equal force to all other organic structures by merely slightly altering the phraseology, thereby proving from his own established premises that *mind*, not *mechanicism*, is the true factor of the phenomena he has so graphically described.

Now since the foregoing observations relative to the operations of the "Siphonophore-Republics" have special reference to their submental operations, we will, in contra-distinction, present to the reader's attention a vivid object-lesson illustrative of the exclusive operations of the supra-mind in other inferior beings which are described by Sir John Lubbock as "*The Habits of The Ants.*"

"When we see an ant-hill, tenanted by thousands of industrious inhabitants, excavating chambers, forming tunnels, making roads, guarding their homes, gathering food, tending their domestic animals, each fulfilling its duties industriously and without confusion, it is difficult altogether to deny them the gift of reason, and escape the conviction that their mental powers differ from that of men not so much in kind as in degree."

The same may be said of all cell-souls of plants and animals. All forms of mind (and there is an infinite variety) are alike in essence, but they are as diversified in quality and degree as are the bodies of matter in and thru which they operate.

Each form of mind has its special sphere of operation: that of the subconsciousness pertaining almost exclusively to the various physiological functions, and that of the supra-mind to the affairs of the outside world. Hence the activities of the ants above outlined are prompted by their "*principal*" consciousness (falsely so called), and not by their instincts (as held by Sir Lubbock), since their work is similar to that we perform under the guidance of our supra-mind. What is done thru instinct by either animal or man is actuated by their subminds which suggest to the supra-mind certain functions essential to the welfare of the individual or to the race, of which I will but instance all our various physical desires. In these we hear and obey the voice of our subconsciousness.

A writer in the *Universalist Leader* points out the difference between instinct and reason in this felicitous style: "A boy was asked to explain the difference between animal instinct and human intelligence. 'If we had instinct,'

he said, 'we should know everything we needed to know without learning it, but we've got reason and so *we must study ourselves 'most blind or be a fool.*' "

Instinct relates to internal matters, and reason to external ones, but both are distinct forms of intelligence.

CHAPTER 17.

HAECKEL SEES IN THE SUBMINDS OF THE INDIVIDUAL CELLS A "PERSONAL SOUL," AND IN THE SUM OF THESE SOULS THE "HARMONIOUSLY ACTING PSYCHE" (I. E. SUBCONSCIOUSNESS) OF THE ENTIRE ORGANISM. TAKES TWO CONFLICTING VIEWS OF THE SOUL.

That the position taken by Haeckel in former years relative to a dual mentality in the higher animals is still maintained by him despite his acceptance of Max Verworn's fallacy that all physiological activities of beings below the higher Invertebrates are unconsciously performed, may be seen from the following paragraph on page 156 of World-Riddles. Speaking of the earliest Protist-Coenebia and other primitive plants he says:

"In all these Coenobia we can easily distinguish two different grades of psychic activity : (1) the cell-soul of the individual cells, (the elementary organisms), and (2) the communal soul of the entire colony."—But the entire value of this remarkable recognition of a most vital truth is totally destroyed by the statement in the preceding paragraph referring to the same low orders:

"We assume that their movements are unconscious." This robs them of their psychological value and reduces them to purely mechanical performances—inconceivable since they adapt certain acts to definite ends, purpose being clearly expressed therein.

Referring to a branch of the Siphonophores, he says on page 162: "The Hydra-Polyps have no nerves or higher sense-organs, although they are extremely sensitive." In these words he virtually concedes their consciousness—an unconscious sensitiveness being unthinkable.

"On the other hand," he continues. "the free-swimming Medusae which are developed from them, have an independent nervous system and specific sense-organs."

But no centralized nerve-system which he regards as a condition of consciousness, yet he even refers to those which are composed of over 99 per cent of water as "persons who perform various duties"—in their acquatic communities, as we have just seen. In these intelligently

acting "*persons*" (composed principally of water!) the nerve-system, supposed to be the essential organ of mind, is still in such a *disseminated* state as to defy recognition.

"The class of Siphonophores," he continues, "is also very interesting to the Psychologist. In these pretty, free-swimming organisms, which come from the Hydra-Medusae, we can observe a double soul : the personal soul of the numerous individualities which compose them, and the common harmoniously acting *psyche* of the entire colony."

Why should these facts be of any interest to the Psychologist if, as he says on page 198: "The soul is the sum-total of the *physiological* functions of the material organs"? This reduces the soul to an entirely physical process—to pure mechanicism. It divests it of all properties that could render it of interest to Psychologists, to whom a "physiological" soul can be of no meaning or significance whatever, the term being a physical instead of a psychical one. Neither can the Professor himself now consistently employ the term in any psychical sense, but should relinquish the use of it as a psychic entity entirely. All of his references to cell-souls or other kinds of souls are shorn of their distinctive meaning by his definition of the term as quoted above, for no one can form any conception of a physiological soul—it is an utterly inconceivable proposition.

On the other hand, a correct interpretation of psychic phenomena is expressed in the following paragraph on page 154:

"We find the highest development of the animal cell-soul in the class of ciliated Infusoria. (!) When we compare their activity with the corresponding psychic life of the higher, multicellular animals, we find scarcely any psychological difference; (!) the sensitive and motor *organella* of these Protozoa seem to accomplish the same purpose as the sense-organs, nerves and muscles of the Metazoa. (!) Indeed, we have found in the great cell-nucleus of the Infusoria a central organ of psychic activity which plays much the same part in their unicellular organism as the brain does in the higher animals. (!) However the views of experts may diverge . . . it does not alter the fact that the *Protozoa give proof of the possession of a highly developed cell-soul* which is of great interest for a correct decision as to the *psyche* of our earliest unicellular ancestors." (!!!) (Emphases mine. H. W.)

There being thus scarcely any psychological difference between the activities of the animal cell-souls of the ciliat-

ed Infusoria and the corresponding psychic life of the higher multicellular animals, places the soul-life of the Protozoans on a mental and potential parity with our own by conceding a commensurate degree of consciousness to them. In this, the Professor takes the position of all advanced Biologists and Psychologists.

CHAPTER 18.

PARAPHRASING HAECKEL'S DESCRIPTION OF THE SIPHONOPHORES TO SHOW ANALOGY BETWEEN, AND ARCHETYPE OF, LOWEST AND HIGHEST FORMS OF LIFE. THE PRINCIPLE OF SELF-DEVELOPMENT THE SOURCE OF ORGANIC PHENOMENA. THE SUBTLE AGENCIES WHICH INTRODUCED NEW SPECIES INTO THE WORLD. RESULT OF THE DIVISION OF LABOR.

Having stated in one of the last chapters that by slightly altering the phraseology of Haeckel's description of the physiological, psychological and sociological life of the colonies of Medusas called Siphonophores or Sea-nettles, said version would apply with equal force to all ordinarily constructed complex animals, we will now paraphrase his description by substituting the name or names of animals of the higher orders to show that the general ideas, memories and conceptions which govern the life of all animals, from the simplest to the most complex, and which determine their physical and mental characteristics, run thru all alike.

In the following paraphrasis, then, I will endeavor to show that despite the great structural differences noticed between the Siphonophores and the higher orders, certain archetypal features have been preserved, and considering further that the subjects of our present discourse are constructed in such a manner that each chief organ constitutes a semi-independent individual, it is both in this peculiarity and the analogy still prevailing in their functional processes and those of the higher organisms that the Sea-nettles furnish us an excellent object-lesson of the modes of operation of the cell-souls in which their memory—the active element of Heredity—is distinctly expressed.

As in a community of ants and other inferior orders of life, so in the cell colonies we call, respectively, fish, bird, horse, man etc., etc., a multitude of minor intelligences we call "cell-souls" have assembled and incorporated themselves into these organizations for purposes of self-advancement. Even as in the simplest *multi*cellular or-

ganisms the ideal bonds of social interests and sense of duty unite all the individual cell-souls into one harmonious whole, so in the more complex cell-governments, all are by bodily connection riveted like slaves directly to the yoke of their communal unity. Still, even in this close coherence, each person is endowed with an individual soul of its own. Thus have their cellular constituents succeeded thruout untold ages by means of the unification and expansion of their vito-psychic forces, in peopling this Earth with the vast multitudes of the marvelously diversified structures of the Organic Kingdom.

The principle of the "*Division of Labor*" which constitutes one of the most important characteristics of the life of all organisms, both animal and vegetal, and which is so highly accentuated by all Biologists, may be illustrated in the following paraphrasis:

One department of a mammalian cell-community, be it in the form of, we will say a horse, ape, whale or man, controls the circulatory functions, another the respiratory offices, another the sense-perceptions, another the nutritive department, another the reproductive processes, another the functions of the brain-proper, and so on down to every cell or congeries of cellules called "organs" which were specialized by the subminds to perform certain lines of labor, each and all cell-souls being cognizant only of the particular functions devolving upon them, and unable to execute any pertaining to other departments of the "animal economy." Recognizing the necessity of conforming themselves to the offices assigned to them in this "division of labor," each special group of cells has adjusted itself to that form which is best adapted to the execution of the labor imposed upon it.

Again, the aptitude of locality determined in the course of generations the proper distribution of the various parts and organs thruout the cell-community. That is to say: necessity primarily, and adaptivity secondarily, suggested to the cell-community the special line of labor which should be assigned to each group of cells—the fitness of certain locations to the performance of specific functions deciding the disposition to be made of the members, and consequently also the general configuration of the plant or animal. Hence the adaptation of form to its modes of life observed in all organisms.

Each cell-soul of plant or animal recognized its aptitude for performing a given kind of labor in the colony of which it constituted an integrant part, and proceeding with its proximates to adjust its functions to the general

requirements (which implies co-operation with cells performing different lines of work,) an harmoniously acting cell-community was produced. The general trend of the principle involved, was, inevitably, in the direction of the origin of new species, or call it "*Evolution*", if you will.

While the ideations which gave rise to the various functions of an organism were primarily of an extremely vague nature, (even as is every new idea of the supramind,) they gradually grew more pronounced with each generation—each little gain being sacredly preserved thru the contemporaneously developing organs of Reproduction —until they were able to assert themselves, first, in the outlining of rudimentary structures designed for the purposes conceived of, and finally in developing them to the highest possible degree of perfection, tho countless generations were consumed in the developing processes.

Thus, while the Organic Kingdom was advancing collectively—evolving genus after genus and species after species—the teleo-mechanics of Nature were progressing individually, gaining step by step with and thru the bodies they built up even as does the intellect of Man with and thru his works of Art, both proceeding towards the goal of perfection in precisely the same manner and by the same slow degrees. Upon this point too much stress cannot be placed for a full and correct conception of organic phenomena and of the subtle agencies which conspired to introduce new forms of life into the world. (The application to our "*Object-Lesson In Teleo-Mechanics*" of the principles laid down in these chapters and their relation to the nature of the "Siphonophore-Republics" the reader will, no doubt, have readily discerned.)

CHAPTER 19.

CARDINAL FEATURE OF THE MIND IN NATURE. SELF-DEVELOPMENT FROM MONER TO MAN. EVOLUTION OF THE SENSES. NATURAL PROGRESSION VS. NATURAL SELECTION AS A FACTOR OF EVOLUTION.

In the presentation of the preceding chapters we may see that the tendency of self-development is one of the cardinal features of all forms of mind in Nature, including that of the simplest self-evolved Chromacea. To propitiate development, nothing could be more natural and easier to accomplish than for congenial elements to assemble into organic or inorganic bodies, thereby adding to their own fund of vito-psychic energy that of their

auxiliaries. Single cell-souls being naturally averse to leading a solitary life, they soon found that "in union there is strength." This inclination for condensation constitutes in reality the main incentive to the up-building of the Organic Kingdom—to the formation of all bodies of matter, in fact.

Thus we find that atom is drawn to atom until molecules are formed; molecules to molecules until plastidules are formed, (the connecting links between inorganic and organic matter); plastidule to plastidule until cells are formed, and cell to cell until in Man the crowning work of the teleo-mechanics of Nature is achieved. This result was brought about thru their innate tendency to improve their condition, they having had not the remotest conception at the outset into what type of morphological structure this tendency would eventuate. The same principle is operative in the fields of the supra-mind, for primitive man could not have had the slightest conception of the arts of Civilization of which he was the intuitive *avant coureur*, he and his descendants being their designers and constructors, tho in each case in an exceedingly limited degree.

Likewise did the cell-souls of our predecessors evolve higher and higher forms of *subminds* until they had reached that high degree of development which enabled them to produce the present "human forms divine." Each and every cell-soul of our ancestors contributing its little mite to the general fund of ideations, progress in both domains was made by almost imperceptible stages, yet only for immediate results and for individual benefits.

In our own senses we have the strongest evidence of the consciousness of the cell-souls, for only thru a cognition of external objects while organic life was still in its incipiency and highly susceptible to external stimuli, was the evolvement of sensilla made possible. Thus, the first evolved Monera being susceptible to the influence of light, suggested the need of visual organs, rudimentary forms of which appear even in certain animal and vegetal Infusoria. Sound waves or aerial vibrations suggested the advantage of auricular organs. The difference in the properties of matter suggested the need of the sense of feeling; ever-changing physiological conditions initiated the sensations of pain and of pleasure. The emanations arising from different objects suggested the advantage of the sense of smell, and the need of determining the nutritive value of substance inspired the sense of taste.

But unless the simple forms of life in which the sen-

silla originated were conscious of the conditions of their environs, no occasion could ever have arisen for evolving them. There would have been in that case no necessity for the lower orders being provided with sensory organs (*for it is only thru consciousness that they are needed*), and without these essential equipments in the struggles for existence they could not have survived—no higher forms would ever have been evolved. Deny to the lower orders consciousness, and you deny them their life!

That the Monera are susceptible to at least three sensations: those of vision, touch and hearing, has been demonstrated, and this proves their consciousness. One sense alone would be sufficient, for any sense or sensation is nothing but an affection or a specific state of consciousness.

All other parts of an organism had their inception in an equally simple manner by their need being forced upon the attention of the biological minds in their struggles for existence. This furnished the incentive to their evolvement which was carried out by slow degrees thru hereditary transmission and adaptation.

This brings us back to our paraphrasis of Haeckel's explanation of the functions of the various Medusa of which each Siphonophore is composed, by saying that even as these are tied to each other by bonds of self-interest, so do the individual cell-souls of the higher organisms, including man, allow themselves to be chained like slaves to their fellows, they all recognizing the advantage a "close coherence" affords them during their earthly career.

In view, then, of the peculiar relations the individual cells of complex organisms bear towards each other, well may we exclaim with Haeckel: Woe to any member of a complex cell-community which in the infatuation of egotism would break away from the communal stock to lead an independent life! Unable to perform all the functions that are indispensable to its self-preservation, most of which are executed by its fellow citizens, it would soon perish if it were detached from its companions.

For all join in harmonious co-operation—when not interfered with or hampered in their functions by inimical agencies—to build up and maintain their respective "colonies" in accordance with the mnemonical impressions imparted to their parental stem-cell or cytula, which impressions were transmitted to its daughter-cells and their offspring until all had fulfilled their mission in the upbuilding of their organic complication.

Thus only the reciprocal co-operation of all the cell-

souls of a plant or an animal; only the sum-total of their vito-psychic energy diffused thruout their entire system (and which we call their subconsciousness or biological mind) which unites all in bonds of faithful love, can insure their permanency as a flourishing and happy cell-community for its natural tenure of life.

In concluding this chapter we would substitute the *active principle* or *cause* of *Natural Progression*, (the result of the *self-developing element of the mind in Nature* which terminates in Evolution) for that of *Natural Selection* which exists only as an idea in learned men's brains, hence cannot be an active factor in the processes of creation and development.

Note. It should have been stated at bottom of page 57 that Dr. Paul Carus' work "*The Soul of Man*" is published by the *Open Court* Publishing Co., Chicago, Ill.

CHAPTER 20

HAECKEL REFERS TO THE MEMBERS OF A SIPHONOPHORE COLONY IN-TERMS OF PERSONALITY. HIS "CARBON-THEORY" EXPLODED. PROTOPLASM NOT THE ESSENTIAL BASIS OF ORGANIC PHENOMENA. "MUTUAL PROTECTIVE ASSOCIATIONS" IN NATURE. THEIR COMMUNAL CONSCIOUSNESS RECOGNIZED.

Referring to the physical bonds which unite the individual Medusae of a Colonial Sea-nettle into one organism, Haeckel says: "The members of the community are by bodily connection riveted like slaves directly to the yoke of their communal unity. Still, even in this close coherence, each person is endowed with an individual soul of its own."

Likewise has each and every organ of all complex plants and animals a soul of its own, that is, a submind of whose function it alone is cognizant. Hence note the analogy in the above.

The close coherence which characterizes the various individual cells of a plant or an animal and which consolidates them into one body, is in the case of the Siphonophores reduced to a minimum owing to the cells being composed principally of *acqua pura*, a substance anything but remarkable for its cohesiveness, so that but for one per cent of some element possessing this property being associated therewith, it would not have "stick-to-it-tiveness" enuf to hold soul and body together. Now altho we have before alluded to the strange fact that these intelligent beings are totally devoid of the plasmatic base characteristic of all other forms of organic life, we deem it of sufficient significance to regard these "mysteries of creation" from another viewpoint. Thus they present to the

Haeckelian School of Philosophy the unparalleled phenomenon of "*near-water*" (!) being transformed into beings of a high physiological, psychological and sociological degree of development according to the Professor's own interpretation of their individual characteristics! Surely here is a problem of no mean proportions for Materialists to solve! For note how the elementary constitution, nature and "characters" of the Colonial Sea-Nettles confute Haeckel's "*Carbon-Theory*" which he presents on page 256 of his volume in the following form:

"Physiological chemistry has, after countless analyses, established the following five facts during the last forty years:

"I. No other elements are found in organic bodies than those of the inorganic world." (Admitted. H. W.)

"II. The combinations of elements which are peculiar to organisms, and which are responsible for their vital phenomena, are compound protoplasmic substances, of the group of albuminates."—The Siphonophores exhibit the same vital and psychic phenomena as the majority of other animals of same inferior orders, and even possessing organs and faculties denied to the highest, namely, nettle-batteries that are veritable searchlights with which to illumine their surroundings and capable of discharging electric shocks with which to repel their enemies, yet they are totally devoid of compound protoplasmic substances of the group of albuminates, hence these are *not* an essential requisite of organic bodies as claimed by Haeckel.

"III. Organic life itself is a chemico-physical process based on the metabolism, or interchange of material, of these albuminates."—As these are absent in the Colonial Sea-Nettles, which are composed principally of water, with only one per cent of a saline element, his third thesis is invalid.

"IV. The only element which is capable of building up these compound albuminates in combination with other elements (oxygen, hydrogen, nitrogen and sulphur) is carbon."—This thesis is also disproved by our "near-water" marine animals in which no trace of compound albuminates *chemically united by carbon* has been found.

"V. These protoplasmic compounds of carbon are distinguished from most other chemical combinations by their very intricate molecular structure, their instability and jelly-like consistency.

"On the basis of these five fundamental facts (? H. W.) the following 'carbon-theory' was erected thirty-three years ago: 'The peculiar chemico-physical properties of carbon—especially the fluidity and the facility of decom-

position of the most elaborate albuminoid compounds of carbon—are the sole (! ? H. W.) and the mechanical causes of the specific phenomena of movement which distinguish organic from inorganic substances and which are called 'life' in the usual sense of the word.'"

The fact that the carbon-theory of organic life has proved false (saving the first thesis) in the case under consideration, shows that it can be only provisionally accepted in all others. That is to say: the albuminoid compounds referred to by Haeckel are *only incidental* to most organic forms—*not essential* or indispensable to conscious life "with all these terms imply." In other words: The formation of bioplasm by the teleo-mechanics of Nature is contingent upon the availability of its elements for the up-building of organic life, but *not dependent upon them!*

Or we may say, that while in the Siphonophores oxygen and hydrogen are chemically united by an element evidently of a saline nature, (hence not carbon), which combination is manifesting its immanent psychic energy in the astonishing manner herein related, these facts utterly confound not only Haeckel's carbon theory, but also the generally accepted scientific postulate that protoplasm *as we know it* is the essential basis of all forms of organic life. Hence the albuminous compounds were selected, or *adopted*, rather, because they presented greater advantages in the way of stability and resistance to inimical forces than the *simpler* compounds afforded, thus enabling the individual to survive for the longest period, but not because a greater complication of elements was indispensable to such life. Thus, where only two elements with a slight admixture of a third in an extremely minute proportion is available to the up-builders of organic life, they find these all-sufficient for their purpose of constructing beings possessing and manifesting various forms of intelligence.

From which it follows that the teleo-mechanics of Nature are governed in all cases by the material at their disposal, and that they do the best they can under all circumstances.

That groups of atoms, molecules and cells assembled into bodies of "close coherence" was strictly in accordance with their "inclination for condensation" which Haeckel concedes to them on page 220.

Only thru concerted action of the cell-souls engaged in the up-building of any given organism can the integrity of the cell-community be preserved for its natural tenure of life.

Viewed from these premises we may regard each plant

and animal as a "*Mutual Protective Association*" of cellules organized for the purpose of promoting their general welfare, each individual cell contributing its quota of psychic energy to the general fund of intelligence which is equally distributed thruout the entire organism, manifesting itself outwardly by what we call its *life*. That this vital force operates intelligently, the purposive arrangements of all its parts, as well as its various indispensable functions, fully attest. This is recognized by Haeckel in these words on page 261:

"But the idea of design has a very great significance and application in the organic world. We do undeniably perceive a purpose in the structure and in the life of an organism. The plant and the animal seem to be controlled by a definite design in the combination of their several parts just as clearly as we see it in the machines which man constructs; as long as life continues, the functions of the several organs are directed to definite ends just as is the operation of the various parts of a machine."

Yet if one were to express doubts about the intelligence of the designer of even the simplest artificial device, Haeckel would, no doubt, entertain grave doubts of his sanity. Why, then, not apply the same rule to those who question the intelligence of the designers of the infinitely more complicated machines constructed by so-called "Nature."?

Viewing the *Mutual Protective Associations* of cells called "plants" and "animals" in their *tout ensemble*, we may say (keeping up the metaphor) that the difference in their respective "Constitutions and By-laws" accounts for the great diversity in their structure and character everywhere observable.

In recognizing the analogy between their communal consciousness, i. e. the sub-minds of the Siphonophores and the supra-mind of man, Haeckel concludes the subject in these words:

"In the same manner also in human affairs, only the faithful fulfillment of social duties by the citizens of a country, ensures the permanent existence of civilized states."

In what more pointed language can the teleological forces which manifest themselves so clearly in the soul-life of the Colonial Sea-nettles be presented and expressed? Comparing the functions of these comparatively lowly beings which are devoid even of the physical substratum of vegetal life, that is, of a protoplasmic base, with the social duties, faithful love, sundry emotions and sensations, with a will of their own, with a multiplicity of souls

etc. of the higher animals, yet with all these concessions of almost human intelligence the Professor denies them the element without which no psychic faculty can be operative, namely, *consciousness!*

But *lo and behold!* Casting a glance upon the preceding sentence in the same paragraph I am struck with this remarkable admission: "Only the harmonious co-operation and reciprocal support of all its members; only the communal ***Consciousness*** *(!)*, (identical with the subminds, H. W.); only the *central soul* (!), (corresponding with the supra-mind of the higher animals! H. W.) linking all together in bonds of faithful love, can impart a lasting stability to the existence of both the individuals and their totality." (The *Soul Of Man*, p. 243). Emphases and parentheses, barring italics, mine. H. W.

Yet where, oh where, is the centralized nerve-system which the Professor regards as the essential condition of their communal consciousness, and, *a forteriori*, also of their central soul ? !

PART IV

THE VITO-PSYCHIC LIFE OF PLANTS

CHAPTER 21

GENERALIZATIONS. EVIDENCES OF MIND IN VEGETAL BIOPLASM. MANIFESTATIONS OF PURPOSIVE DESIGN. PROGRESSION THE ALL-PERVASIVE TENDENCY OF THE MIND IN NATURE.

The elements of both the sub- and the supra-minds exist in the bioplasm of all animal and vegetal cellules in a diffused and rudimentary state, partial dissociation being effected in animal organisms in the course of Evolution thru the differentiation of the plasm into a more or less developed nerve-system, the purpose of which separation being to enable each mentality to attend to its own particular functions unhampered by its *confrere*, their intimate relations continuing on the same co-operative basis in all organisms as in that which has been presented to the reader's consideration in the preceding Part relating to the Colonial Sea-nettles.

The advantage this separation has been to the organisms in which alone it was effected, namely, in the animal division of the Organic Kingdom, is apparent in the great strides this branch has made in evolutionary development both in its physical and mental phases, while its sister organisms, plants of all kinds, in which no dissociation took place, remained virtually and practically, with but a few

noticable exceptions (the Orchids, Mimosa etc.) in the same primitive state—mentally considered. This shows what the separation of the originally amalgamated sub- and supra-elements into two distinct mentalities has accomplished for the higher division of organic life.

The fact, however, that no difference can be noted in the degree of conscious intelligence between the simplest forms of animal Micro-organisms (Protozoans) and vegetal Micro-organisms (Protophyta or Microphytes) shows that originally their sub- and their supra-elements were of the same psychological value, and of the same mental caliber.

In consequence of the dual mind-element of plants being still in a rudimentary state, they are deficient in their capacity to take cognizance of their surroundings, yet in some vegetal organisms the susceptibility to exterior irritants has reached such a stage of development as to enable them to respond thereto in various ways, they showing their likes and their dislikes, their greed or their fear (as the case may be), and displaying other indications of being cognizant of their own existence as well as of those with which they come in contact—evidence that they recognize self-preservation as the first law of their being and that their general trend is to reach higher stages of development, the primary incentive to evolution, as has been explained in other parts.

Hence in inferior, subordinate conditions rests the motive of Evolution. If all beings were perfect at the outset, no incentive for development would exist, and without a desire for reaching higher planes of existence there would be no zest in life.

The contention that all organisms, from the simplest to the most complex, vegetal as well as animal, are endowed with and animated by an intelligence essentially like our own supra-consciousness (tho differing in degree, kind and quality), is based upon the undisputed fact that each individual cell displays under the microscope "the majority of the emotional and intellectual faculties characteristic of the higher Mammalia," (as M. Binet expressed it) the sum-total of which faculties, constitutes their sub-consciousness or Peripheral soul.

Again, an element which is essential to, and characterizes the life of, any being during its incipient stages of existence, must necessarily persist and remain with it during its entire career. That is to say: conscious intelligence being the demonstrated property of all germinal cells and of their immediate derivatives (as far as they can be subjected to microscopic examination,) all sub-

sequent cell-formations must be equally endowed with it.

In other words: The vito-psychic life resident in the cytula (fecundated ovum) which manifests itself in the intelligent movements so felicitously compared by Prof. T. H. Huxley to those of "an unseen artist who as with his plans before him strives with skilled manipulation to perfect his work" (all of which is *literally* true, altho Huxley had not the remotest conception of the identity of this artist), proves the nature and properties of all the daughter-cells derived therefrom, for the law of Heredity that "Like begets like", "as the parent, so the offspring" holds good in all spheres of life. Hence all individual cells of plants and animals, tho they run into trillions, are endowed with the same vito-psychic energy as was that of their original ovum-cell from which they were derived.

And in the progressive stages of existence which are summarized under the comprehensive term of *Evolution* we may recognize the all-pervasive tendency of the mind in Nature—individually and collectively—to exalt itself to the highest possible degree.

CHAPTER 22

VIEWS OF BOSCOWITZ, MEUNIER, DE MARTIUS, FECHNER, DR. ERASMUS DARWIN AND OTHER NATURALISTS OF PLANT-LIFE. HOW THE MIMOSA OR SENSITIVE PLANT DISTINGUISHES FRIEND FROM FOE.

That plants are animated by a force akin to the life or sub-consciousness of animals was realized by many ancient and modern observers of natural phenomena; in fact, the first recognition of their sentient soul-life must be credited to ancient philosophers. An exhaustive treatise on this subject appeared in *Appleton's Journal* of June 26th, 1869 under the title "*The Soul of Plants,*" from which I take the liberty to quote the following extracts:

"The veneration with which some plants and trees were regarded in the earlier ages of the world survives, and we find that the old-time love of the people still clings to many a shrub and tree and flower, even in this our matter of fact generation."

The realization that even the humblest plant has sensations commensurate with its lowly conditions of life will have a tendency to keep us from inflicting needless pain on them and raise our estimation of life in general, a "desideratum devoutly to be wished" in view of the brutal wars that are a shame and disgrace to our vaunted civilization.

"Victor Meunier, in commenting upon the attractive

and original work of the botanical *savant* Boscowitz, says with a touch of sarcasm: 'In our time, the human soul is so frequently a subject of dispute, that it is not without some surprise that one hears anything said about the soul of plants. We are ready to believe that by the word *soul* are meant the grace, the charm, the attractive features of the plant; its vivacious, majestic or languishing attitude and presence—in fine, all that goes to make up its external aspect and effect. But no, it is really the vegetative psychology of plants that the author means.'

"Prof. Boscowitz propounds the following clearly defined question: 'Is the plant an animated creature, capable of voluntary acts?'

"In reply to this query he cites some of the most curious facts of vegetative life. Studied with penetration and sagacity these facts seem absolutely new to us, although they are taking place before our very eyes every day."

Boscowitz' question is best answered by the activities of the micro-organisms and individual cells of plants and animals. When assembled in the congeries of cells we call "plants" these "emotions" must naturally still constitute some of their properties, and these in their sum-total we now recognize as their subconsciousness or biological mind. That is to say: what we call the *"life"* of a plant or an animal is its vito-psychic energy (or submind) in active operation, hence they are the same identical, intelligent forces.

"The opinion," said the aforesaid writer, "that the motions of plants are not merely mechanical or physical, but are determined by a perceptive intelligence partaking of the instinct of animals, has already been enunciated by several men of learning, among them Dr. Erasmus Darwin, the grandfather of the celebrated Naturalist of our time. The two most fervent partisans of the same doctrine nowadays are De Martius and Theodore Fechner in Germany.

"Among the Ancients, Anaxagoras, Pythagoras, Plato and others scarcely less eminent acknowledged their belief in the existence of an intelligent principle or soul in plants. The laws of Manon even consecrated the idea, for, they say, 'Plants have within them a sense of their existence (i. e., consciousness, H. W.); also their pains and pleasures.'

"Admitting this doctrine for a few moments, if we suppose that the variety of sensations is as multiple in

plants as their variety of species, what an enchanting stir of life must play through that vegetative realm which comprises within its vast boundary the violets and daisies of our meadows, the superb flowers of our gardens, and the magnificent products of the tropical flora, and embraces those mysterious plants whose sensitiveness and capacity for transformation borders on the marvelous."

These latter phenomena are manifestations of their supra-element since they relate to exterior affairs. They are incited by the same motive which prompts spiders and opposums to feign death at the approach of a supposed enemy, they knowing that marauders generally prefer living bodies to dead substances, or reject the latter entirely. The supra-mind of the Mimosa has reached such a degree of development as to be able to distinguish a friend from a stranger, it ceasing to exhibit its usual indications of fear or apprehension at the approach of one whom it has learnt to recognize and regard as a friend by the attention bestowed upon it, evidence of the development of sense perceptions without specialized sensilla.

CHAPTER 23

THE FLOWER OF MARY, ROSE OF JERICHO AND THE RESURRECTION-PLANT. THE VENUS' FLY-TRAP. VIEWS OF OTHER FAMED NATURALISTS. THE OFFICES OF THE SUB-AND THE SUPRA-ELEMENTS. CELL-SOULS VIEWED COLLECTIVELY CONSTITUTE A SUB-CONSCIOUSNESS.

"The Flower of Mary," continues the writer in *Appleton's Journal*, "also called the Rose of Jericho, and, scientifically, the Anastatica, is another of these remarkable plants. The Arabs give it the name we first used, and hold it in high reverence. When it has expanded in a soil not well adapted to the fructification of its seeds, it detaches the root that kept it in its place, holding on by a delicate fibre only, and at last, letting that go, abandons itself to the wind that sweeps it away to some moister place and more invigorating soil, in which it may drop its ripened seeds without apprehension.

"Prone on the ground, and withered after having disengaged its roots, it at once brightens up again, and recovers the freshness for its new but brief existence. Sometimes it repeats this process several times, but the exhaustion experienced during its journeys through the air leaves it sterile ever after."

These movements and processes of disengaging itself from its roots to seek a more favorable locality must be credited to the perception and judgment of the subconsciousness whose object is to facilitate its functions of re-

production which pertains to the sphere of our diffused mentality.

"The Resurrection-Plant is still more amazing. Only two individuals of this species have been known, and they grew on the same plant. The latter was given to Dr. Deck, the naturalist, by an Arab whose life he had saved. Some time afterward the doctor gave one of these flowers to Alexander Von Humboldt.

"The Arab's gift was by no means attractive at first sight—a slender stalk supporting two small, dry and scorched looking pellets. But the son of the desert strenuously affirmed that this treasure had been found in a tomb upon the bosom of an ancient Egyptian priestess, and loudly vaunted its wonderful properties. In truth, the doctor had hardly moistened the flower ere he saw that the Arab was right. This flower exerts a powerful, ineffable charm over the man who beholds it for the first time. Scarcely has one sprinkled a little water upon it ere it begins to stir; the stalk rises erect, the flower slowly opens, and the frail petals open one by one to dispose themselves in radiating order around a central point. At this moment the flower looks like a field daisy, but after a moment of hesitation, it abruptly turns over its corolla and exhibits its bosom on which its seeds are seen deposited."

The functions and operations of the Resurrection plant are thus under the exclusive control of, and subordinate to, their teleological or sub-conscious element since its mechanicisms and physiological functions are all performed (insofar as they are known) with a view to the upbuilding of its organism, tho exceptionally deficient in its reproductive capacities.

"The Fly-catcher," continues the writer in *Appleton's Journal*, "is another remarkable plant indigenous to the American Continent. It ranks high in the possession of faculties hitherto ascribed only to animals. A drop of honey distilled in its own laboratory is revealed between its roseate petals. A fly, gnat, or even a little worm attracted by the luscious food becomes entangled; the petals, moved by vigorous springs, close upon it, and it is stifled." (And slowly devoured by this carnivorous plant thru a process of absorption. H. W.)

The distillation or secretion of the substance designed to entrap any chance passers-by devolves upon the subminds; the selection of the bait pertains to the office of the supra-mind which alone can be intuitively cognizant of the likes and dislikes of the intended prey. The sensory department (which is operative without any anatomically

differentiated sensilla), taking cognizance of exterior objects, is also, in connection with the use of the masticating device, under the exclusive control of the still diffused supra-element. This, not being localized, as in the higher animals, cannot correctly be termed the Central soul, tho identical in essence with the corresponding element of animals.

"The Naturalist Pouchet," I quote further, "goes far in his enthusiastic appreciation of these phenomena, but the ancient writers exceeded him. . . In modern times Adamson gave plants not one, but many diverse souls. Hedwig, the profound botanist, Bonnet and Edward Smith claimed that plants have a sentient life. Camille Debans compares a fading rose to a dying beauty, conscious of her approaching dissolution."

Both plants and animals contain, in reality, as many different "souls" as they have cells of which they are composed, as may be seen from the fact that all are engaged in different kinds of labor, according to what part, organ or function they are operating. It is only by viewing those cell-souls which pertain to the inner life of the organism, and those which relate to the outer world, *collectively*, that we may say an organism has a double consciousness or two souls.

CHAPTER 24

ANALOGICAL EVIDENCE FOR THE SOUL OF PLANTS.—RESPIRATION, NUTRITION, REPRODUCTION.—THEIR MARVELOUS ADAPTIVITY TO ENVIRONMENT.—TRANSFORM THEIR LEAVES INTO HOOKS OR HANDS.

"After all", comments our student of plant life, "perhaps it is not in these exceptional phenomena of the vegetating world alone that we should seek for proof that plants possess an instinct which impels them to such or such an act or movement."

Would observe that an exceptional case neither proves nor disproves a general rule. It is in tracing the history of all the phases of plant- (and animal-) life that we may arrive at a true conception of the forces that govern its internal and external activities.

"The first point of approximation that exists between plants and animals is the process of respiration. Life, says Boscowitz, is known by the breathing process. (Still more by its exhibition of consciousness, H. W.) Plants breathe like men and animals, absorbing oxygen and throwing off carbonic gas.

"Under the action of the sun's rays, plants absorb a great quantity of carbonic acid at the same time they are

exhaling oxygen. But this is the effect of another operation of life, namely, nutrition. The plant is at that time decomposing the acid in order to feed on the carbon. The work of nutrition does not prevent that of respiration, and these two acts are performed simultaneously.

"Then there is the same analogy between the two kingdoms in the successive periods of growth and decay, and in the laws that control their reproduction.

"The faculty of sensation (i. e., consciousness), being in the animal kingdom as closely linked with life as the faculty of growing, taking nourishment, propagating etc., are we not singularly inconsistent in refusing the faculty of feeling to the plant, when we see that it grows, feeds, reproduces, and in fine, lives like the animal?"

The above points are so self-evident that they admit of no comment or criticism.

"Numerous experiments and close observation have shown that plants diversify their mode of growth according to their nature, their requirements and their relations to outside influences. Sometimes they hasten it, sometimes they slacken it, but above all, they are seen to direct their growth to this side for a point of support, or to that in order to get more light, to take root in nutritious soil, or to clasp some other plant in order to get or absorb more nourishment. They exert themselves to reach their object; they feel their way; if needs be they will change their direction, not once, but often; they will even modify their organs. Thus climbing plants will make abortions of their leaves and flowers in order to transform them into hooks or hands."

This transformation of superfluous leaves into claws with which to cling to walls, trees, buildings or other adjacent objects for support, demonstrates, first, that they are conscious of their own existence, hence the instinct of fear or self-preservation is strong within them, they being under the impression that by climbing they can escape marauders. (Would here note that the judgment of the subminds of plants and animals is as fallible as our own, hence arise "all the ills that flesh is heir to" which will be duly considered in Part V on "Malformations.") Second, that both the sub- and supra-elements are involved in these functions, and third, that they exercise full control over the psychic element of their atomic and molecular constituents—the inferior element naturally obeying the superior forces in control of the organism. Thus is the judgment and ideation of plants as diversified in nature and quality as our own—an analogy the most significant of all.

Concluding, the above quoted writer says: "In a

word, activity and variableness of growth in plants do not appear to be either the effect of chance, nor always that of the vitality of the individual, but the result of an impulse communicated by a sort of *intelligent combination*, and consequently possessing the characteristics of spontaneous and voluntary action."

"Intelligent combination" is about as "happy" a synthesis of two words as can be found to describe the source and nature of our sub-consciousness or biological mind, seeing it consists in its ultimate analysis of a coalition of inummerable sentient atoms, molecules and cells, all acting in conjunction to produce what we call the "life" of a plant or animal.

In the above cited facts, of which an indefinite number of similar ones could be produced, we have conclusive evidence that plants possess the power of conscious ideation of varying degrees, and that their mind-forces are similar in character to our own, tho of a much inferior grade, and will always remain so, since the opportunity of self-development is denied them owing to the curtailment in the freedom of their movements which places them forever at the "mercy" (?) of man or beast—perhaps for a beneficent purpose from our self-interested viewpoints.

CHAPTER 25

THE ENTITY OF THE VITO-PSYCHIC ENERGY OF PLANTS AND ANIMALS. KINETIC AND POTENTIAL FORMS OF MIND. MEMORY THE POTENT FACTOR OF HEREDITY. MODE OF OPERATION. MECHANICISM NECESSITATES A MECHANIC. NERVE-SYSTEM OF PLANTS. BUDDING AND GRAFTING. THE PHENOMENON OF "DEATH."

Exception to the passages last quoted can be taken only in the remark that the activity of plants may not always be the effect of their vitality, but rather the result of an impulse communicated by an intelligent combination possessing the characteristics of spontaneous and voluntary action. This is a fair conception of the subminds of plants and animals, the only objection thereto being in the writer dissociating vitality from the intelligent combination (which he does not define), he regarding the two as distinct properties or entities. The position herein taken is, however, that vital force or vitality is but one of the attributes of the intelligent combination of cell-souls of plants and animals, and therefore one and the same entity, that is, vito-psychic force which operates and manifests itself in the life and intelligence of cells and congeries of cells.

The vital element is pre-eminently of a dynamic character, and the psychic element of an exclusively mental nature. Both are subject to conversion from potential to kinetic states, and again from kinetic to potential. The latter phenomenon in both plants and animals we call "death." Whenever the dynamic element becomes prepotent thru a certain concatenation of circumstances it appears chiefly as the physical form of energy we call "life", as, for example, in the life of plants in which its associate mind-element is revealed only in the activity of their individual cells; while whenever the psychic element gains the ascendency thru its centralization into special organs of cerebration it manifests itself as the potent working force we call mind, intelligence, consciousness etc., hence these forms are as indestructible as the dynamic element with which they are inalienably associated, and as the physical forms of force in which the psychic attribute is reduced to a minimum. The fact, then, that the vito-psychic energy of plants and animals is reducible from an active or kinetic state to a latent or potential one has given rise to the false idea that mind is but a transient phenomenon—a product *de novo* of neurological or physiological processes.

Since there can be no mechanicism without a mechanic, it follows that in the "skilled manipulations" of atom, molecule and cell which result in the wonderful structures of the organic kingdom, the "hidden artist," *Intelligence*, is revealed. The comparatively high degree of intelligence the up-builders of organic structure (both animal and vegetal) have attained is the result of a gradual accumulation of ancestral experiences and memories acquired during past ages and which are preserved for the special use and benefit of future generations by means of organisms specially designed for that purpose. In Nature this sum of mnemonical ideations is transmitted or impressed upon the reproductive germs, and in Art it is conveyed from one generation to another thru tradition, education and literature which are but aids to memorized knowledge.

The potent factor of Heredity, memory, is thus as active in the rearing of the arts of civilization, as it is in the evolution of the Organic Kingdom. Its modes of operation are identical in both domains. The only difference between them is that in the case of Nature memory operates thru the subminds, and in the case of Art thru the supra-consciousness.

In every part or member of a plant, the ideas of the cell-souls which devised and constructed it, are expressed, each idea having for its sole aim and object the welfare of the individual organism. To the great diversity of ideas

based on their ancestral experiences and memories is due the almost infinite diversification of organic structure.

Some vegetal cell-souls, for instance, conceived of the idea of protecting themselves with thorns against marauders; others distilled and impregnated themselves with what is sure death to their enemies; others again recognized in climbing up trees or similar means of support the desired safety for themselves and offspring; others perceived the advantage of weaving films over their sensitive procreative organs to protect them against the rude insect-world, and so on to innumerable other devices the advantage of which gradually "dawned upon" the cell-souls of their primogenitors whose descendants elaborated the ideas pertaining thereto until they assumed tangible form in the now perfected parts, members or "characters" of the plant (or animal.)

In the processes of budding, the grafter artfully introduces the ideas of one kind of plant to the ideas of another kind, the result being that the product partakes of the characters of both.

Every variation in the morphological structure indicates that the cell-souls involved, conceived of what they regarded as an improvement on the lines laid out for them thru hereditary transmission by their predecessors.

That the subminds of plants run in about the same main channels with those of animals is seen in the above mentioned means of offense and defense having their counterparts or homologues in spines, bristles, horns, poisons, etc. of the more favored animal organisms.

Unquestionably the main objection to the acceptance of a mind-element in plants is the presumed absence of a nervous system, but would say that traces of these "differentiations" were first discovered in the roots of onions, and afterwards in various domesticated flowers. But the whole bioplasm of plants and animals serves in the capacity of a nerve-system as has been shown and will be further considered in the concluding Part.

CHAPTER 26

THE VITO-PSYCHIC ENERGY OF PLANTS AN ENTITY. VITALITY DEFINED. THE MOTOR OF MOTION. PSYCHIC AFFINITY THE SOURCE OF ATTRACTION. HAECKEL'S RECOGNITION OF PSYCHIC ENERGY. GRAVITATION THE EXPRESSION OF WILL WHICH MUST BE OBEYED. ATTRACTION AND AFFINITY.

Vitality has been defined as the "sum of the activities of an organized being." But as this reduces it to a nonentity (activity being, like process, movement, func-

tion etc., an abstract concept having no veritable existence in itself), I would define it as the sum of vito-psychic energy of an organic being, whether plant or animal. That is to say: vitality is identical with life, soul and mind-force (including both sub-and supra-minds of the higher animals) and since these terms represent the actual working-forces of psychic energy, this must be placed in the category of entities, however imponderable and impalpable (or incorporeal) it may be.

In all purposive movements—and as such the phenomena of plant-life with their processes of growth and development must be regarded—an impellent and directive force is clearly operative and discernible, even as it is in all animal functions, hence intelligence can not be rationally dissociated from either animal- or plant-life.

The same phenomena of sex-attraction being observable in vegetal organisms as in the higher orders, it appears that in their last analysis all forms of attraction, whether they operate as cohesion, gravitation, magnetism, sexuality or as any other type of coalescence, are reducible to psychic affinity, that is, to a conscious will or desire of congenial particles or bodies to enter into closer relations which can only be effected thru unification. Haeckel thus says correctly on page 129: "Even in the plants and lowest animals these inclinations or tropisms seem to be the joint outcome of the inclinations of all the combined individual cells." And the analogue of these inclinations of the lowest forms of plant-life with those of the highest orders of animal life is expressed in these words on page 128: "Yet a connecting chain of all conceivable gradations (of love and hatred) unites the most primitive elements of feeling in the psychoplasm of the unicellular protist with the highest forms of passion that rule in the ganglionic cells of the cortex of the human brain."

On page 127 Haeckel says: "Attraction and repulsion seem to be the sources of will, that momentous element of the soul which determines the character of the individual." Would reverse this by saying: Will is the source of attraction and repulsion, because the act of volition necessarily precedes the phenomena we designate either as attraction or as repulsion, hence these have their source or root in the will which is an expression of the conscious force we call "mind." In other words: Attraction and repulsion are but the manifestations of an intelligent antecedent power which exerts its will to produce these psychic phenomena in both organic and inorganic bodies of matter, manifesting themselves in the former in what we call "love" or "hate."

Another correct view of the soul or mind is expressed by Prof. Haeckel in these words on page 24 of "Last Words on Evolution": "The idea of evolution scientifically applied . . . conceives of the soul as a special immaterial entity."—But not as an unconscious one, as he asserts in other parts of his works, thereby invalidating what would otherwise be above criticism.

In the various physiological functions of a plant, its conscious vito-psychic energy is as clearly revealed as in those of animals, purposive design being as much in evidence in the former as in the latter.

On page 128 the Professor says: "When we examine the will in the light of comparative physiology and evolution, we find—as we do in the case of sensation—that it is a universal property of psychoplasm." But on next page he partly repudiates this by saying: "In the lower animals, however, this will remains unconscious."—Since sensation is but an affection of consciousness, and the will an exercise or expression of this faculty, and these all admittedly a universal property of psychoplasm, the lower animals and plants cannot be excluded therefrom.

Conscious volition, then, being also an universal property of psychoplasm, all the phenomena of attraction and repulsion observed in and characteristic of its movements as well as in all complex bodies must be inspired by this pre-existent conscious force.

These observations here have special reference to the physiological processes of plants to show that they are under the control of intelligent will, even as are all other bodies of the Cosmos wherein some remote or proximate purpose is expressed.

To the diversified methods employed by this universal will pervading infinite space in its endeavors to attain higher planes of existence may be ascribed the endless variety of organisms which emerged from the simplest self-evolved vegetal cells and culminated in the genealogical tree of man—the sum of these methods of creation being preserved in and perpetuated thru the marvelous systems of reproduction.

Haeckel recognized the entity of psychic energy or mind in these words on page 221: "The most elaborate and most perfect forms of energy that we know is the psychic life of the higher animals; the thought and reason of man."

Scientists "know" only entities! The analogy between the vito-psychic life of plants and animals has been shown and will be again reviewed from new standpoints in other chapters.

CHAPTER 27

LINNAEUS' SEX-DISTINCTIONS. THE NATURE OF PLANT-LIFE. UNITY OF ORGANIC NATURE. THE HALF-WAY STATION BETWEEN THE ORGANIC AND THE INORGANIC KINGDOMS. VISUAL ORGANS OF VEGETAL BIOPLASM. BINET'S AND BALBIANI'S OBSERVATIONS.

If any one were to endow vegetal organisms, even in this enlightened age, with individuality, same as we do animals of high or low degree, or claim they had any rights we are bound to respect, he would be regarded by many well-meaning people as **non compos mentis.**

This in view of the fact that the nature of plant-life was so little understood even as late as the end of the eighteenth century, that the works of the great Swedish botanist, Carl Von Linnaeus, who first noted the sex-distinctions of plants and their analogy to those of animals, and based his nomenclature upon these generic analogues, were at one time ruthlessly destroyed by a mob.

To obtain a true conception of the nature of plant-life, it is essential that we descend to its very fundamentals (equipped with a compound microscope) and note by the movements of the simplest protist-cells that all distinction between the "elementary units" (as single cells have been termed) of the animal and vegetal kingdoms is to all intents and purposes obliterated, thus demonstrating the unity of organic life.

That is to say: while it is impossible to determine by the behavior of various species of micro-organisms which kinds would, under favorable conditions, develop into plants, and which into animals—impossible to distinguish by any known modes of procedure certain low forms of vegetal cellules from animal cells,—this fact reveals that all organic life, no matter under what form it appears, is virtually of the same identical nature and derivation.

The corollary to these propositions is two-fold: first, that the vito-psychic forces which thus manifest themselves in vegetal as well as in animal **psychoplasm** in their earliest incipiency, must necessarily persist with

them thruout their entire career (since an element or property essential to their very existence at one time, cannot possibly be dispensed with for one moment at any other), and second, that if we concede souls to man and the lower animals, we are also by every rule of analogy forced to concede them to plants.

While, then, no distinct line of demarkation can be found between animal and vegetal life, (it being well known that many complex organisms, such as the sponges, for instance, possess characteristics pertaining to both domains, thus constituting them the links between the two chief divisions), vegetal organisms may be regarded as the "half-way station" between the organic and inorganic kingdoms.

That the distinction generally made between plants and animals is of an artificial and superficial character may be seen from the fact that the vegetal bioplasm is not only as susceptible to the stimuli of light-waves (besides being responsive to other irritants), but also that among various Protozoans, the Peridonia (unicellular vegetal organisms) are equipped with rudimentary organs of vision in the form of crystalline lenses, and of choroids consisting of pigmentary corpuscles.

The sense of sight being thus given to the lowest orders of plant-life (tho only to a very limited extent), it must also necessarily exist in a commensurate degree in more complex vegetal structures.

In confirmation of this view M. Binet says on page 29 of his "Psychic Life of the Micro-Organisms" (speaking of the ocular spots discovered in ciliated vegetal Infusoria): "It is impossible to believe that these organs are not eyes, for they have the same structure as the eyes of comparatively higher classes of animals, such as certain worms, rotifers, etc. All these organs are similarly formed of a small crystalline globule enclosed in a small mass of pigmentary matter. This identity of structure naturally leads to the assumption of the identity of functions."—And also, analogically, to the existence of a commensurate faculty of conscious perception of objects, for without this faculty, of what utility would be the organs?

"So far as the vegetal Micro-Organisms are concerned," continues M. Binet, "we have already mentioned that a large number of the algae (vegetal zo-oespores) exhibit ocular spots of a beautiful ruby color. . . More-

over, it is probable that certain microphites—(primitive vegetal cells) possess more complex visual organs. M. Balbiani has recently testified to this fact in the case of the Pandorina Morum. In each colony of cells there exists a certain number of individual cells which possess a red circular spot. If this be examined under a glass of high magnifying power we can easily see that it is formed of a small spherical globule covered on a portion of its surface by a cap of red matter. This observation is all the more interesting because it is made on a being the vegetable nature of which is today no longer doubted."

Note the anomaly (not to say, antithesis) of beings having eyes, yet are unconscious of what they see! Yet this is Haeckel's "unalterable conviction," and with Binet: "a question we are obliged for the present to forego." P. 61. Does seeing or feeling not imply consciousness?

CHAPTER 28

THE "HIGH MENTAL CAPACITIES" M. ALFRED BINET SEES IN ANIMAL AND VEGETAL CELLULES — THEIR VISUAL AND OTHER ORGANS OF SENSE. CELLULAR IRRITABILITY INADEQUATE TO EXPLAIN THESE PHENOMENA. CANNOT BE DISSOCIATED FROM CONSCIOUSNESS. MECHANICAL vs. PSYCHICAL AGENCIES. HAECKEL'S MONISM.

Experiments made upon vegetal infusoria indicate that in addition to rudimentary visual organs they are also endowed with a distinct faculty of feeling or touch.

M. Binet concedes to simple cells the following "high mental capacities" considering the minute quantity of bioplasm involved: "1; The perception of external objects. 2; Choice between a number of objects. 3; Perception of their position. 4; Movements calculated to either approach a body or flee from it."—Yet he adds: "We are not in a position to determine whether these various acts are accompanied by consciousness, or whether they follow as simple physiological processes. This question we are at present obliged to forego."—Would these mental capacities not be all-sufficient to prove consciousness in the highest orders of life? Then why not also in the lowest?

If a highly organized animal cannot perceive external objects or choose between a number of objects, or re-

cognize their position, or decide to approach an object or to flee from it without being cognizant of all these acts—is it reasonable to assume that a single cell could do all these things unconsciously? This would be like saying that a weak-minded person would be able to accomplish mentally what the highest intellect would be unable to attain. The attendant physiological processes are but the media through which consciousness operates.

That M. Binet recognized the weakness of the materialistic position may be seen from the following paragraph on page 64: "The movements made by the micro-organisms as if in response to an excitation are not simple reflex motions; they are movements made to an end. We cannot repeat it too much: these movements are not explained by the simple phenomenon of cellular irritability" —as has been shown by ingenious experiments described in his next paragraphs. These phenomena are therefore due to the "high mental capacities" mentioned above, even as the same unquestionable evidence of conscious psychic action is found in similar manifestations of the highest orders of life. If the former are reflex movements caused by mere cellular irritability, then must all of our own mental processes be placed in the same category.

In corroboration of which Binet says on page 114: "It is quite important to note that even of organisms made up simply of protoplasm and nucleus, the psychology is extremely complicated." So where is the difference?

Thus he says on page IV of Preface: "Note that the Difflugia urceolate (whose movements will be further analyzed in concluding chapters of this volume) does not act differently from animals possessing highly complicated organizations and endowed with differentiated nerve-systems. . . There is not a single infusory that does not manifest its fear by a rapid flight."—Conceive of a cellule feeling and exhibiting fear unconsciously if you can!

On page 109 he concludes that "We may resolve all the foregoing into the statement that every (vegetal and animal) micro-organism has a psychic life the complexity of which transcends the limits of cellular irritability since it possesses the power of selection, it choosing its food, as it likewise chooses the cellule with which it affiliates and copulates." (All this without being aware of what it is doing?!)

Cellular irritability is but a primitive psychic state which is aroused into action by the application of exter-

nal stimuli. This state is as pronounced in vegetal as it is in animal cells and cannot be dissociated from consciousness, the indispensable basis of all forms of mentation.

"As regards the act of copulation itself," says M. Binet on page 68, referring to both animal and vegetal cellules," it too is of exceeding interest to the Psychologist who can admire the precision with which the two individuals assume the attitude necessary for fecundation."

Why particularly interesting to the psychologist, if the learned savant of the French Academy of Science is "unable to determine whether these acts are accompanied by consciousness, or whether they follow as simple physiological processes" as he declares on page 61? Prof. Haeckel expressed himself precisely to the same effect, he also regarding these phenomena as of special interest to the psychologist who knows of no unconscious cerebration. It seems that the truth will force itself intuitively upon these gentlemen's conviction despite their efforts to resist it from utterly incompetent materialistic premises.

Haeckel thus says again on page 138: "The psychological information which is afforded by these remarkable facts of impregnation which have only been properly observed during the last twenty-five years, is supremely important. Its vast significance has hitherto been far from appreciated".—Binet's and Haeckel's positions on these points would be impregnable if the former did not weaken it by questioning the consciousness of the mind-force he so clearly recognizes, and the latter did not positively deny this essential faculty to the psychological factors engaged in the fecundating processes.

For where does the "psychological information" come in, if, as he says on page 259: "Mechanicism (in the Kantian sense) alone can give us a true explanation of natural phenomena, for it traces them to their real efficient causes, to blind and unconscious agencies which are determined in their action only by the material constitution of the bodies we are investigating."

What has Psychology to do with blind causes and unconscious agencies—if such there be? And if these are determined only by the material constitution of the bodies in which the alleged blind and unconscious causes operate, we are justified in inquiring what is the nature of their material constitution and mechanicism? for one who has investigated them, as claimed, ought to be able to give us, in detail, the result of his observations.

If, as he again says on the preceding page, "Darwin gave us the key to the monistic (materialistic) explanation of organization in his theory of Natural Selection forty years ago it has become possible for us to trace the splendid variety of orderly tendencies of the organic world to mechanical causes," then it is but a farce to ascribe them to psychical factors or agencies.

CHAPTER 29

HOW THE SUBMINDS OF PLANTS PROPAGATE THEIR SPECIES. THEIR MODE OF FECUNDATION ANALOGOUS TO THAT OF ANIMALS. BALBIANI RECOGNIZED AN "INTERNAL VOLUNTARY IMPULSE."

The artificial distinction between plants and animals is still further obliterated when we turn our attention to the remarkable similarity that obtains between their respective modes of reproduction of which M. Binet says that "the erroneous idea which prevailed until 1858 to the effect that copulation never takes place among Infusoria (of which the Bacteria are the simplest vegetal organisms) was dispelled when Balbiani addressed a communication to the French Academy of Science wherein he showed that sexual reproduction, preceded by copulation, is found among Infusoria". ("The Psychic Life of the M.O., p. p. 65-66.)

In freely using "M. Balbiani's descriptions the exactitude of which has since been confirmed by Prof. Gruber, of Freiburg" of whom M. Binet also quotes extensively, he compares "the course of psychical phenomena thru which the ciliated Infusoria (also mostly vegetal cells) pass when making ready for copulation, to that of the entire animal kingdom, wherein the act of coition is invariably preceded by introductory manifestations of psychical activity which may last for quite an extended length of time."

Before pointing out these activities would say that in their analogy to those of the higher orders of life the **Memory** of the cell-souls is distinctly expressed, for only thru this conscious faculty can this and other archetypal features of organic life be perpetuated or preserved.

Note ,then the almost identical mode of procedure of even the simplest plant-cells in propagating their

species and compare it with the forms still in vogue with the highest evolved beings, and ever will be.

"The female, when pursued by the male, seems to be animated by two conflicting desires, that of yielding to the male, and that of repelling his approaches. This show of unwillingness, which is but temporary and more seeming than real, has the effect of inciting the male to attempt an exhibition of powers calculated to captivate the female. (Her submental heart's desire, H. W.) · According to M. Espinas, who has thoroughly studied this subject,there are five classes of phenomena which assist in preparing the way for sexual union: firstly, provocative contact, the lowest of all these phenomena—that is, the one which most approximates to the physiological order. Second, odor. Thirdly, color and form. Fourthly, noise and sound (i. e., cooing, H. W.) Fifthly, play, or every variety of movement. It appears to us that all manifestations of love in human beings could be classified into these five categories."

The "courting season" of the Micro-organisms is stated by Binet to last from one to six days, (67-69) it differing with various animalcules.

In describing their preliminary proceedings, Binet states on pages 69 and 70.

"We shall mention particularly, but briefly, the curious phenomena that accompany fecundation among the Vorticels. Even more than in the instances just cited do these phenomena resemble the process of conjugation in higher animals, for in this instance fecundation is effected between two differentiated individuals, one of which acts as the male and the other as the female.

"The Microgonida (male Vorticels) have exactly the same mode of locomotion as the mammalian spermatozoids. After having come into the vicinity of a Vorticel they abruptly change their manner of movement.capering around the female like a butterfly flitting about a flower, touching it, retreating, and then approaching again. Coition is not effected without a show of resistance on the part of the Vorticel. It hastily contracts the peduncle to which it is attached, at every touch of its suitor, while the latter, in order to save itself from being thrown back by these rapid shocks, and keep in touch with its Inamorata fastens itself by a filament to the latter. Thus attached, it finally succeeds in effecting a junction with it."

On page 83 M. Binet says: "The simplest forms of

vegetal reproduction are those where the male and the female cellules are quite the same and advance to meet each other equally; thus possessing not only the same form, but also the same properties. In the Ulothrix serrata the interior of certain cellules divides into two parts which separate, then come together again and mingle anew into a minute mass which, when set at liberty, reproduces the plant entire. (The essential temporary separation or dissociation of the positive or male and negative or female elements in Nature enacted for purposes of reproduction, as will be explained in other parts, H. W.) In the Sphaeroplea (a plant-cell or Alga) the protoplasm breaks up into male and female cellules, the latter remaining in a passive state while the males ply briskly about until they succeed in fixing themselves to the zoospores or female cellules."

Now no one questions the mechanical or physiological processes attending these operations. The question is: what is the nature of the force or forces that instigate, direct and control them, as they must needs be in view of the fact that they are employed as certain means to accomplish definite ends?

"The psychological phenomena attending this mode of conjugation," says Binet on page 84, "may be still more complicated as shown by the observations that Berthold has made upon the conjugation of the zo-ospores of the **Ectocarpus** which belongs to a group of vegetal algae, the mobile (male) spores of which reproduce the plant. These zoospores are little pear-shaped cellules of which the tapering end is colorless and has a depression which appears to be an eye. Every zoospore is equipped, in addition, with two flagella, one of which points forwards and the other backwards. When the zoospores are set at liberty they pass each other unnoticed. The female does not yet draw about her the male cellules from which she differs by no morphological mark. But at a given moment the female becomes distinguished from the males by passing into a state of rest, whereat the anterior flagellum...contracts and presents at its free end a protuberance which allows the zoospore to fix itself upon some immobile point. When thus fastened the males hitherto indifferent, are seen to make towards the female and to surround it in a half-circle. The number of males that thus meet is quite considerable; it frequently exceeds a hundred. They let their flagellum fly loosely behind

them while directing their anterior filament towards the female cellule. This filament they draw backwards and forwards over the body of the zoospore, performing upon it real acts of feeling, their object evidently being to provoke a genital excitation, as what follows will prove... Upon the expiration of a certain time one of the males leaves the half-circle and approaches the female. The two unite and having presented a series of changes the fusion is complete. The fecundated zoospore, now called "zygote", "cytula" or "stem-cell" is then set free."

The male and female cell-souls having become amalgamated into one submind, then commence the process of segmentation which is naturally very simple in the case above cited, nothing but another primitive vegetal organism being the result of the union—a duplicate of the lowly beings from which they descended.

In the higher orders of life a mnemonical impress of the genitors' entire characteristics is made upon the submind of the stem-cell which then proceeds in its work in accordance therewith, it knowing of no other. These cognitions constitute the "plan" of Huxley's "unseen artist" who enters upon the labors thus assigned to him by his predecessors. And too much stress cannot be placed upon the analogy between the modes of conjugation of the lower and the higher forms of life, since that most important function of all mental processes, memory, upon which the persistence of type depends, is clearly revealed therein.

It is also worth noting that the male and the female cellules exhibit the same degrees of psychic faculties before as after fusion, evidence that these are their inherent property regardless of future affiliations.

If new characters or modifications of structure should appear in offspring—and upon this contingency rests the whole superstructure of Organic Evolution—it is an indication that certain changes in the environs have suggested to the cell-souls of the embryo just what alterations would be needed to conform it to the new requirements. Whatever new ideations occur to, and are accepted by the subminds as available, are carefully preserved thru the reproductive systems for the future use and benefit of the progeny. Both the principles of Heredity and of Adaptation are embodied in the latter propositions.

CHAPTER 30.

FURTHER ANALOGUES BETWEEN ANIMAL AND VEGETAL LIFE. THE FUNCTIONS OF THE NUCLEUS AND NUCLEOLUS. CARYO-KINESIS (HEART MOTION.) THE NUCLEUS "THE POTTER WHO FASHIONS THE PROTOPLASMIC CLAY." THE PREFORMATION THEORY. THE CHARACTERS OF PARENTS IMPRESSED UPON MEMORIES OF STEM-CELLS. MENTAL IMAGERY THE DETERMINANT OF HEREDITARY TRANSMISSION.

Another important analogy between plants and animals, showing that both are identical in their nature and ultimate constitution, is found in the fact that their "elementary units" (as all cells have been aptly termed) contain the so-called nucleus with its nucleolus from which all physiological processes are directed, for which reason they have been designated "germinative vesicles." In other words: the nucleus of an animal or vegetal cell is the special seat of its subconsciousness which governs the functions of growth and development. M. Binet has expressed a similar idea as follows on pages 92 and 93:

"The significance of the nucleus lies in the division of the cellules. When a cellule divides, the nucleus comes into action, it exhibiting certain movements and passing through complicated stages to which have been given the name of caryo-kinesis. (Heart motion.)"

It would seem from this that cell-division is the result of this caryo-kineiss; that the nuclear movements precede the division, instead of these preceding the movements, from which it follows that the nucleus must be regarded as both the heart and the brain of the cell—heart in so far as it serves as the vital motor of these processes, and brain in as much as it intelligently directs them for the purpose of growth and development. The nucleole is probably the "hidden artist's" special organ of cerebration.

How felicitous, then, Binet's allusion on page 102 to the nucleus, saying: "If to use an old comparison of Aristotle's, we compare the protoplasm to the clay, so must we compare the nucleus to the potter that fashions it."

Another fair conception of the functions of these

central organs of animal and vegetal cells is presented in this form on page 103: "Thus, it is through the intermediary office of the nucleus that all the faculties, all the properties possessed by the parents—the forms of their bodies as well as their psychical faculties—are transmitted to the embryo; all these properties must be comprehended in the nucleus in order to pass into the embryo."

The above approximates the principle of Heredity quite closely, tho it is incorrect to say that the forms of the parents' bodies etc., are transmitted to the stem-cell, since this, by reason of its diminutive size, would be totally inadequate to contain them. A similar idea was involved in the, at one time generally entertained, preformation theory, which held that all the parts, or the whole form, of a plant or an animal existed in a greatly reduced size in their seeds or ova and that the growth of any organism consisted simply of an unfolding of these parental forms.

Now while the whole form of its genitors cannot possibly be contained in the nucleus of a stem-cell even in a greatly reduced state, (which proposition implies an exclusively physical process , and can, therefore, not account for the psychical phenomena or functions connected therewith) we may readily realize that the mind-force resident in the nucleus and nucleolus and the surrounding bioplasm conceives of the various characteristics which distinguish the individuality of its genitors, and that these conceptions constitute the determinants of the resultant processes of segmentation.

No matter how minute the space in which mind-force may be confined, it possesses the capacity of almost unlimited expansion thru its very versatile memory, as seen in our ability to picture within the narrow compass of a small portion of our cerebral cortex a multitude of past events, sceneries, persons and even the vast expanse of the starry heavens. How readily may the characters of a plant or an animal therefore not be impressed mnemonically upon the cell-soul of a cytula—not all at the same instant (which would be a useless performance) but rather in the order of their embryological succession. That is to say: while all characters of the parents may be impressed upon the memory of a stem-cell in a latent, yet potential form, each one of these distinguishing features asserts itself during the gestatory period and becomes operative in the consecutive processes of cell-formation until all have fulfilled their mission and exe-

cuted their respective labors in the up-building of the organism upon which they are engaged. In this Mental **Imagery,** then, lies the potent factor of Hereditary Transmission ;the principle of the Persistence of Type ;it explains by what a perfectly simple mode the perpetuation of the diversified morphological structure of plant and animal life may be effected. This will be further elucidated from different viewpoints in other parts of this volume.

CHAPTER 31

BINET SEES A REASON FOR A CERTAIN MODE OF PROCREATION. INSURES THE SURVIVAL OF THE INFERIOR TYPES OF LIFE. A RELAPSE INTO MONISM. CENTRALIZATION OF NUCLEAR ELEMENTS. THE MARCH OF EVOLUTION FROM MONER TO MAN.

Referring to "the most general mode of reproduction among the lower orders of plant and animal life called fissi-gemmation," M. Binet states on page 104 that "The reason for this mode of multiplication by nuclear elements will be comprehended if we consider the matter in the light of experiments made upon the formative properties of the nucleus." These processes of cell-formation, commonly called "budding," consist, however, of nothing but multiplication by division, and, therefore, embody the archetypal feature of reproduction in more complex organisms. The vastly greater simplicity of these processes in the inferior types renders them comparatively more prolific, hence better adapted,in the aggregate, to survive in the struggle of life. But for this provision, they would be apt to annihiliate each other, thereby precluding the Evolution of higher orders.

It is significant that Binet recognized a "reason" in any mode of reproduction, since this acknowledgment is equivalent to a recognition of consciousness without which no reason is conceivable. That is to say: he concedes to the cell-souls the power of conscious ratiocination, tho he questions on page 61 whether their "perception of external objects; their choice between a number of objects; the cognition of their location in space, and of their movements calculated either to approach a certain body or flee from it," was accompanied by consciousness or not. "This question," he said, "we are not in

a position to determine''—(despite the above palpable evidences of their consciousness, H. W.)! Well; it's one thing to feel inclined to grant it to them, and another thing to declare it as his ''unalterable conviction that all these intensely purposive and advantageous movements are unconsciously performed.''—Haeckel's position.

But after having come so near to a correct concept of the nature of the cell-souls, M. Binet relapses into his materialistic attitude by adding: ''The nucleus comprehends all the physiological properties the totality of which constitutes life''. With ''one fell blow'' (of his pen only!) he has reduced sentient life to a mere physical process! Note the anomaly, the antithesis, the glaring contradiction of terms: All the physiological properties of the nucleus constitute what operates and manifests itself as sentient, intelligent life!!! With equal validity could we claim that the sum of **psychical** functions constitutes chemism or mechanism.

In the above quotation ''the potter who fashions the protoplasmic clay'', that is, Prof. Huxley's ''unseen artist who strives with skilled manipulation to perfect his work'' is summarily dismissed and all is again relegated to the crass Materialism of blind mechanical agencies, purely physical processes and hap-hazard concourses of atoms!

If the totality of the physiological functions of the nuclei constitutes life, as held by M. Binet, then would all psychical functions be superfluities; instances would be known where organic life would appear without mental faculties being associated therewith, which, however, we know is not the case, from which it follows that organic life is not a purely physiological or neurological process, and that mental properties must operate in connection with physical functions within the cellular components of an organism. And since we know by our daily observations that mind governs the purposive movements of the higher orders of life, it follows that it also determines the character or tendency of the physiological functions of the nuclei, the totality of whose physico-psychical (or vito-psychic) properties constitutes organic life.

Where no nuclei have been differentiated, the cell-soul of the homogeneous bioplasm serves in the capacity of the ''unseen artist,'' since the simplest chromacea exhibit sensibility and judgment in all their movements. Hence the nuclear elements are in a disseminated state

therein, they being endowed with the potency to coalesce into these primitive organs of cerebration and caryokinesis of animal and vegetal structure thru whose instrumentality the evolution of more complex forms was propitiated.

Hence it appears, firstly, that the cell-souls of the simplest self-evolved Monera recognize the advantage or necessity of assembling a certain portion of their molecular constituents into nuclei for the purpose of facilitating development; secondly, they must necessarily be endowed with the mental and physical capacity to gather the needed elements into the organs we call nuclei which capacity naturally involves an adequate degree of judgment to be exercised in the execution of these labors, and thirdly, consciousness must be the essential pre-requisite of both these purposes and the resultant functions, hence anteceded these, showing that this mental faculty is the actual instigator, promoter and determinant of all processes of growth and development.

With these premises established, the **March of Evolution** from Moner to Man was a comparatively easy task in view of the additional fact that a goodly slice of Eternity was at the disposal of the teleo-mechanics of Nature during which they were enabled to reach the highest possible planes of physical and mental perfection as witnessed in the gradually ascending scale of organic life.

CHAPTER 32

THE MENTAL CAPACITY OF THE GERMINAL VESICLES. THE GENITAL ELEMENTS ENDOWED WITH THE HIGHEST PSYCHICAL PROPERTIES. THE INFINITESIMAL SPACE WITHIN WHICH MIND-FORCE CAN BE RESIDENT AND OPERATIVE. FACTS TRANSCEND THE LIMITS WITHIN WHICH THE PSYCHOLOGY OF THE CELL HAS BEEN CONFINED. CHOICE ANALYZED. THE CHEMICAL THEORY REVIEWED. MIND ANTECEDES CHEMISM.

On page 101 M. Binet says: "We certainly cannot regard the protoplasm as inert matter; but what appears probable is that the protoplasm receives from the nucleus the communication, the delegation of physiological pow-

ers. The nucleus is in a certain sense the focal seat of life in all its forms."—Correctly interpreted this means that the cell-soul of the nucleus intelligently directs or governs the physiological functions of the cell or congeries of cells.

If, then, Binet had stated that the physical and mental faculties of the parents were comprehended by the germinative vesicle called nucleus (instead of "in" the nucleus), and that these properties were thus communicated telepathically to the subminds of all the daughter-cells, which thereby became cognizant of the "plans" that had been made to govern their processes of cell-formation, how lucid, comprehensive and incontestible this proposition would have been! How pregnant with import this little word "by" in the sentence "comprehended by the nucleus and nucleolus"! For these recognized, comprehended and understood the parental characters that had to be transmitted to their daughter-cells in order to build up exact duplicates.

In these nuclei lies hidden the unseen artist who fuses the male and female elements of the sperm and ovum-cells into one potent creative force. He it is who extracts the very quintessence from the physical and mental features of the genitors and transfers them to the subminds, first, of the germinative (sex-) cells of plants and animals, and secondly, to their derivative or daughter-cells who thus receive the cue that will govern their future up-building processes, i. e., the gradual unfolding of their genitors physical and mental characteristics, thereby producing, with perhaps but slight morphological modifications, exact fac-similes of their predecessors.

The following vital admission is made by M. Binet in his **Conclusion** on page 106: "The sexual elements of all unicellular organisms are certainly the ones which show the most highly developed psychical functions. . .By the aid of exact data we have shown that in both vegetal and animal micro-organisms phenomena are encountered which pertain to a highly complex psychology, and which appear quite out of proportion to the minute mass that serves them as a substratum."

This latter fact shows in what an infinitesimal space potent mind can be and is resident and operative. Is this fact any more incredible than that single atoms are able to make vibratory motions at the rate of many millions of times per second, as has been scientifically demonstrat-

ed? Yet we cannot see them, but what the cell-souls accomplish we can and do see with our own eyes. What further demonstration is required?

A very significant idea is expressed by Binet in these words on page 108: "The numerous facts which we have cited in the foregoing essay, transcend the limits within which it has been attempted to confine the psychology of the cell. We will mention but one of these phenomena to show the complexity of the psychic life of micro-organisms: it is the existence of a power of selection, exercised either in the search for food or in the maneuvers attending conjugation. This act of selection is a capital phenomenon; we may take it as a characteristic feature of functions pertaining to the nervous system. As Romanes has, indeed, observed, the power of choice may be regarded as the criterion of psychical faculties."

But must the "psyche" not necessarily be conscious of the objects of its choice, so that by virtue of this consciousness it will be able to discriminate between them?

On next page M. Binet says: "Scientists have endeavored to explain the mechanism of this choice. They have pretended to solve it by saying that it was dependent upon the relation between the chemical composition of the cellule making the choice and the chemical composition of the body selected".

If the cellule makes a choice upon which the action and the relation of the elements involved on both sides depends, then it is evident that the psychic faculty of the cellule instigated the whole processes, hence must have anteceded them. This explodes the above theory that the act of choosing is the result of certain chemical relations of the cell and certain objects with which it comes in contact. The very admission that "the cellule makes the choice" concedes judgment to it, and with it, consciousness.

Commenting on the above quoted position of scientists (of the materialistic school) regarding this subject, M. Binet observes: "Such explanations are purely verbal. Undoubtedly, the faculty of selection, of which protoplasm seems to be possessed, is founded in the character of its chemical composition. (Yes, in the sentient character of its chemical components. H. W.) Chemistry lies at the basis of physiology, but does not explain it, and it is quite evident that the property which protoplasm

possesses of making a choice between several excitations. is a physiological property."

But this is not so much in evidence as a mental one, hence the preponderance of evidence is all on the side of mind.

CHAPTER 33

IRRECONCILABLE PROPOSITIONS. CONSCIOUSNESS ESSENTIAL TO RATIOCINATION. CEREBRAL GANGLIA THE MEDIA THRU WHICH MIND IS INTENSIFIED, DIVERSIFIED AND EXALTED. THE SOURCE OF ORGANIC MIND AND OF INORGANIC FORCE. NATURE NEEDS AN EVOLVER AS WELL AS THE ARTS AND THE SCIENCES.

But how can M. Binet reconcile the last quoted proposition with his admission that the numerous facts cited by him transcend the limits within which the psychology of the cell has been confined; that is to say, that its mental capacity is greater than generally supposed; that its power of selection is a capital phenomenon, and that he agrees with M. George J. Romanes that this function is a true determinant or criterion of psychic faculties? Now he would reduce these to physico-chemical phenomena in which mind plays not even the remotest and most insignificant part! Verily, which of these antipodal positions are his readers to choose?

But "rising superior" out of the slough of Materialism in which he was thus momentarily engulphed, he concludes by saying: "However that may be, we may resume all the foregoing into the statement that every micro-organism has a psychic life the complexity of which transcends the limits of cellular irritability (and of chemical reactions as well, H.W.) from the fact that it possesses a faculty of selection and chooses its food as it likewise chooses the animal or vegetal cellule with which it copulates."

These psychic properties being identical in their nature with those of the higher animals, require consciousness to render them operative, even as we find this faculty essential to the ratiocinative processes of our principal mind or super-consciousness.

Binet's contention that the power of choice is a function of the nervous system or brain, is untenable in view

of the fact that beings possess this capacity in whom not even a single rudimentary nerve, nor even a nucleus for a nerve-system, or any other differentiation, has appeared, as, for instance, in the simplest self-generated Chromacea. The nervous or cerebral system of complex organisms operate however, as the media or instruments thru which the mind-element resident in all matter—organic and inorganic—is intensified, diversified and exalted. Brain matter does not produce or generate conscious mind **de novo**, but it only develops and modifies that which is under its immediate control, and which indeed, evolved cerebral organs for its own advancement, even as a mechanic devises his own tools or implements with which to do more efficient work.

The nuclei contain the vito-psychic germs of nerve, heart-and brain-action in potential form, hence must be regarded as the organic root of the nerve-systems, these emerging therefrom. The nuclear elements have their source in the congeneric or cognate properties of inorganic matter. And these? — — — science postulates as being self-existent and eternal, even as are its associate dynamic elements.

Thus M. Camille Flammarion said under the caption "Mysterious Psychic Forces: There exists in Nature, in myriad activity, a psychic element the essential nature of which is still hidden from us."

The psychic and the dynamic elements always combine (under varying conditions) in different proportions. When the dynamic elements greatly preponderate in the combination over the psychic element, it or they manifest themselves in the various forms of physical force. When the psychical element preponderates over the dynamic element it becomes able to manifest itself in the various forms of vito-psychic energy we call conscious mind which comes under our observation in different degrees of intensity in animal and vegetal organisms.

No one questions the chemical or physiological processes associated with the mental phenomena observed in organic life; the question is: What is the nature of the force which instigates and maintains these movements; what controls or governs them, as controlled they must be in view of the fact that they are the means employed to accomplish certain definite ends? Thus even the inorganic forces governed by a minimum of psychic energy which under abnormal conditions result in all manner

of violent commotions of the elements have for their ultimate object the restoration of disturbed equilibria.

"What caused inorganic matter to run into organic forms?" was from Prof. John Tyndall's materialistic premises an "unsolvable problem". Evolution? Well, what governs Evolution? Canon Kingsley answered this question by saying: "Where there is an Evolution there must be an Evolver".—Why should Nature not need an Evolver as much or more so than all the Arts and Sciences?! Well, we hear it objected again: What caused the Evolver? This is not a legitimate question, since both science and Religion are agreed that the **Great First Cause**, that is, the "Infinite Source from which all (temporal) things proceed" has always existed. this postulate being based on the axiom that "from nothing, nothing can arise." Hence the very existence of the cosmos proves that it and its essential Evolver are eternal. But the nature of this Great First Cause is the problem which has defied the perspicuity of the world's thinkers from time immemmorial.

As for natural phenomena, neither blind mechanical agencies nor exclusively psychical factors can satisfactorily explain or account for them, but the key to these problems will probably be found in the unification of both these elements, for in the purposive mechanisms of matter or force the "mechanic" or teleological factors are clearly revealed.

CHAPTER 34

PHENOMENA ATTENDING FECUNDATION TRUE CRITERIA OF CONSCIOUSNESS. WHY THESE SUBJECTS ARE FRAUGHT WITH OBSCURITY. CAN SKILLFUL LABOR BE UNCONSCIOUSLY PERFORMED? PRIMITIVE ORGANS OF CEREBRATION. WHAT THE CELL-SOULS ACCOMPLISH INDIVIDUALLY AND COLLECTIVELY. INTENSITY OF THEIR CONSCIOUS ACTIVITIES.

The Messrs. Binet and Romanes very truly regard, as we have seen, the ability of the micro-organisms to choose between two or more different objects, as a "most capital determinant of psychic activity," but can these gentlemen form the slightest idea of how these activities can be unconsciously performed, or how the faculty of judgment which is essential to, and involved in, the act of selection, can be dissociated from a conscious percep-

tion of the objects from which a choice is to be made? Do they suppose, for instance, that the hundred or more male zo-oespores who had gathered in a half-circle in front of a female Vorticel to make their primitive love to her, were not as fully conscious of her sex, as she was of theirs?

Note that the female cellule which, as M. Binet expresses it," differs from the male cells by no morphological mark" seemed to make no effort to draw the males around her, or to entice them in any way, but that she simply "passed into a state of rest," after which the males, hitherto indifferent to all appearances, were "seen to make towards her", the sequel to which has been described. All these proceedings prove that there was a difference between the actions or behavior of the males and females; that it was this difference by which the former recognized the sex of the latter, and that in this **recognition** lies the positive proof of the **conscious judgment** and **capacity of discrimination** of the males.

And why did the female Vorticel "pass into a state of rest"? Simply because she **knew** that the males would take this as a sign that she was now ready for their advances, and that the pacific and submissive attitude she thus assumed would spur them to the action she desired them to make. This demeanor proves that she was fully cognizant of their sex, which evidence was further emphasized by her selecting for her mate the one who had surpassed all others in physical prowess. Are the same preferences not shown by the females of all higher orders of life, and must they therefore not all be of the same **conscious nature**?

M. Binet states at the very beginning of his chapter on **Fecundation** that"we now enter upon a subject fraught with obscurity." Why? Simply because in their efforts to explain these phenomena, Binet, Haeckel, Carus, Weismann and other Monists start from the false premises that because the Micro-Organisms are devoid of a well-developoped brain they are unconscious of all their acts. Hence the difficulty these Biologists experience in understanding the perfectly natural ways of the elementary units of plant and animal life—the ways of the up-builders of the Organic Kingdom.

Let us suppose that it was generally believed that in a certain factory making a great variety of useful appurtenances very skillful but totally unconscious work-

men were employed; would we not cudgel our brains in vain trying to comprehend how they accomplish their work? That is the predicament we are in, owing to the failure of Biologists to recognize the consciousness of the workers in the laboratory of Nature. We see them produce most wonderful products of Art; yes, I repeat it: they are masters of the various works of Art in which they are engaged; some devising and constructing plants of various designs, while others—a superior class of mechanics—produce the manifold bodies of the animal kingdom; such artful contrivances as no human being will ever be able to devise and construct with his principal mind.

But because a certain school of modern science has laid it down as an axiom (before the advent of the compound microscope and its revelations) that a well-developed brain is the essential condition of consciousness, they deny to these up-builders of all forms of organic life the only faculty thru which intelligent action is possible and which alone (if conceded to them) would "dispel the obscurity and confusion still prevailing in these momentous problems of Science and Philosophy" like mists before the rising sun. (Quoting Haeckel.)

But have the teleo-mechanics of the Organic Kingdom, that is, the individual cells of plants and animals, or even the simplest self-evolved cellules, any organ of conscious cerebration? Certainly they have; their nucleus serves in that capacity with some, and their entire plasm constitutes the "brain" of others. In these, their nucleus is still in an undifferentiated state—diffused thruout their entire physical substratum, its elements ready to be assembled by the cell-soul into a special organ of cerebration.

Thus individually, they can accomplish but very little—just what we see them do under the microscope: differentiate a heart and brain, that is, a nucleus and nucleolus, and daughter-cells thereafter—but collectively when with the aid of their gradually accumulating funds of experiences, memories and judgments (aquired in the course of many generations) they diversify their functions thru the evolvement of specialized organs as exemplified in the known principle of the "**Division of Labor**" they are able to build up the wonderful complex structures of plant and animal life.

Concede to the recognized psychic faculties of the

cell-souls **consciousness,** and the nature and object of their labors will be as clear to biologists and to the world at large as the simplest problem in arithmetic.

Why, then, cannot these scientists, equipped as they are at present with fully adequate appliances for studying the life of animal and vegetal cells, have a little more confidence in the evidence of their own senses and less in an axiom that was inflicted upon mankind before these latest appliances of modern research were placed at their command? Why this unaccountable adherence to a dictum their very eyes prove to be an unmitigated fallacy?! Unmitigated because the movements of the Micro-Organisms these scientists are investigating do not differ in the minutest detail (psychologically considered and insofar as the intensity of their exhibition of conscious activity is concerned) from those of the highest forms of life, the only difference being in the **kinds** of labor the teleomechanics of Nature and the supraminds of man are performing. If, then, our labors prove our consciousness to the entire satisfaction of every intelligent person, why should those of the lowest orders of life not prove theirs?

CHAPTER 35

AN ILLUSTRATION AMONG VEGETAL CELLULES OF NATURAL AND SEXUAL SELECTION. HOW THE SUBMINDS UNWITTINGLY PROPITIATE EVOLUTION. REACHING THE SUMMIT OF PERFECTION IN NATURE AND IN ART THROUGH SAME MEANS. WHAT BEARING CAN ABSTRACT CONCEPTS HAVE UPON DEVELOPMENT?

Returning in our deliberations to the preferences shown by the female Vorticel to the single male who had shown his superiority over all others, we may behold in this incident an object-lesson of how the Darwinian principles of Natural and Sexual Selection operate as auxiliary factors of Evolution. Of this favored male cellule M. Binet states that "it was more speedy in its movements and outstripped all others"—a common enough observation to make among all orders of life, yet is pregnant with import, for upon this simple fact rests the whole Darwinian theory of Natural and Sexual Selection as factors of evolutionary development upon which the whole materialistic or monistic Philosophy is based.

That among a hundred aspiring male Vorticels one was bound to outstrip all others thru his superior physical and mental qualities and thereby gain the favor of the object of his devotion to the discomfiture of his rivals was a perfectly natural and inevitable circumstance, yet it constitutes the sole principle of the **Survival** of the **Fittest** in the **Struggles of Life,** for whether this principle assumes the phase of the proper selection of mates by both sexes for the object of reproduction, or asserts itself in the cruel strife for means of subsistence in which the stronger must survive at the expense of the weaker or unfit, the principle involved holds equally good in both cases, and being continued from generation to generation it cannot fail to aid evolutionary development to quite a noticeable degree.

Again, the selection by the female of that individual for her mate who had shown his superiority over his rivals contributes considerably to the advancement of their species in that his surpassing qualities will be transmitted to his offspring and thereby preserved and this selection by the female of the best male stock continuing for generations must contribute its share to the improvement of their race. Both sexes in exercising choice thus unwittingly propitiate Evolution. I say unwittingly because they are principally under the guidance of their biological minds or sub-consciousness of whose existence they are in total ignorance, but which alone are qualified by virtue of their ancestral experiences and natural predilection to exercise the proper judgment in the premises, and must, therefore, be regarded as the real factors of organic development, altho they are prompted in all their acts by no other motive than to advance their own individual interests and well-being and that of their offspring.

Of Evolution in the abstract or of its relation to or bearing upon the welfare of all organic life they have not the slightest conception. That phase of thought is the exclusive prerogative of those human supra-minds who cudgel their brains about the nature of things just to satisfy their curiosity in regard to them. Now, altho the principle just pointed out operates but to a slight degree in each individual case to facilitate development, yet with the countless myriads of cell-souls of plants and animals constantly working in the same direction the almost infinite aggregate of these individual motives of

the sub-minds culminated in the up-building of the Organic Kingdom even as the same individual incentives towards the betterment of man's general conditions in life resulted in the various arts of civilization.

As between "Natural" and "Sexual" Selection, the latter is by far the most potent and efficient factor of development.

The claim, then, that the principle of the **Survival** of the **Fittest explains** what Herbert Spencer has defined as "Changes from an indefinite incoherent homogeneity to a definite coherent heterogeneity through continuous differentiations and integrations" is as obvious a fallacy as that twice two makes five. Evolution may be correctly in**interpreted** in the above terms, but accounted for or explained—never! For they totally fail to note what **produced** the changes referred to! True, our attention has been drawn to the modifying and, admittedly, evolutionary tendencies of Natural and Sexual Selection to the extent above noted, but the principle involved is only an abstraction; Evolution, as such, is a nonentity; it has no existence in itself, and therefore cannot have had nor ever will have the remotest influence upon the **actual work** which effected the changes summarized and expressed in the term "Evolution". As a mere idea existing only in learned men's brains the principles of Natural Selection could never have so determined and controlled the physiological functions of the lowest orders of life and their processes of segmentation as to produce those modifications of morphological structure which culminated in the evolution of the highest. What bearing can Aristotle's, Lamark's, Darwin's or Wallace's ideas have had upon the cellular activities of beings millions of years before even primitive man appeared on Earth? It was ages prior to man's evolvement that the ideas gradually dawned upon Huxley's "unseen artists" which caused them to so modify their "skilled manipulations" of atoms, molecules and cells that the summit of organic perfection was reached.

What we then call "perfection" in both Nature and Art is the result of experiences constantly accumulated by slow degrees in the case of the subminds on one side, and by patient research by man's supra-minds on the other, the principles involved in the transition from imperfect to perfect states being alike in both domains.

But most wonderful to contemplate is the fact that

the vast fund of ideas which were accumulated during the evolvement of the higher orders of life was impressed in concentrated form upon their reproductive cells. Is there anything within the sphere of the highest cultivated intellect of man that even approximates the judgment, prescience and perspicuity manifested in the purposive design of even the simplest vegetal procreative systems?

CHAPTER 36.

HAECKEL RECOGNIZES THE ENTITY OF MIND UNDER THE NAME OF "PSYCHIC LIFE," BUT REPUDIATES IT UNDER THE NAME OF "VITALISM". HIS DEFINITION OF "SOUL". PLANTS FEIGNING DEATH LIKE SPIDERS, OPPOSSUMS AND OTHER ANIMALS.

We have seen that to the infinite **variety** of mind-forces resident in atoms, molecules and cells of plants and animals may be attributed the corresponding diversity of organic structure which had its root in the most primitive self-evolved cells and culminated in the genealogical tree of man, and that the sum-total of the gradually accumulating fund of submental experiences, memories and ideations was preserved thru the marvelous systems of reproduction. From these premises me may infer that the impulses which instigated the mechanical or physiological processes connected therewith must have had their source in some cognate mental energy, and of what other such impellent have we any knowledge or conception than that which is generally known as vital force or vitalism, identical with the "life" of plants and animals?

Yet this seemingly self-evident proposition or predication is contested by Prof. Haeckel in these words on pages 42 and 43: "In postulating a special sensitive force or sensibility for neural action, Haller gave strong support to the erroneous idea of a specific vital force.... Not only the **distinctly psychical** activity and the sensibility of the nerves, but even the phenomena of sense-activity, of reproduction and of development seemed so wonderful and so mysterious in their sources that it was impossible to attribute them to simple physical and chemical processes. As the activity of this vital force was **purposive** and **conscious** (a candid admission) it led

in philosophy to a complete teleology. Especially did this seem indisputable when even the critical Immanuel Kant had acknowledged that the mind's authority to give a mechanical interpretation of all phenomena is theoretically unlimited, yet its actual capacity for such (physical) interpretation does not extend to organic life. Here we are compelled to have resource to a purposive, therefore **teleological** principle,"—or force.

Thus Truth will assert itself despite etc., etc., etc.

Of Descartes' narrow materialistic conception that "the body of man, like that of other animals, is merely an intricate machine and that its movements take place under the same mechanical laws as the movements of an automaton of human construction" Haeckel says on pages 44 and 45 that "these rational tendencies towards a mechanical explanation of the phenomena of life during the Seventeenth Century did not attain to a universal acceptance and application. In the course of the Eighteenth Century they fell away entirely before the advance of a teleological vitalism. The final return to mechanicism (i.e., ancient error revived by Haeckel and his school in the last century—barring his recognition of a psychic element in Nature, for which he deserves due credit) became possible only with the happy growth of the new science of comparative Physiology in the present (Nineteenth) century."

Happier, tho, as a **Psycho-Physiology.** And did the automaton not also require intelligence in its construction? So where is the analogy in Descartes' and Haeckel's efforts to explain life from mechanical premises?

On page 258 the Professor admits that "Modern metaphysics continues to regard the telic forces to which the scientist has had recourse, as indispensable, and the mechanical causes as inadequate."

But this candid admission is rescinded in these words on next page: "Modern science gives a purely mechanical interpretation of the **inorganic** world. Mechanicism alone can give us a true explanation of natural phenomena, for it traces them to blind and unconscious agencies."

There are various schools of Modern Science. To which one in particular does he refer?

But the above fallacy is again mitigated by the foling assertion on pages 262 and 263: "Only two branches of the life of an organism, mental action and reproduc-

tion, retained any element of mystery and seemed inexplicable without assuming a vital force, but"—(now note the relapse) "such important discoveries were made in these two branches that the uneasy phantom of vital force was driven from its last refuge."—An uneasy phantom only to those whose "unalterable conviction" it is that all mind and all which indicates purposive design in Nature is due to unconscious mechanical causes! Think of a machine grinding out mind in all its forms! But whence the machines that do such marvelous work?! Are they also the result of blind mechanical agencies, or of a hap-hazard concourse of atoms, or of a **Survival** of the **Fittest** in the **Struggles** of **Life?!**

Another source of uneasiness is the fact noted by him on same page that "a teleological mechanicism has become more and more accepted of late years." As the "uneasy phantom of vital force" is very closely related to this "ghost," it may be interesting to note that he has not tried very hard to drive them from their alleged "last refuge" (wherever that may be) for his volume is replete with passages, of which many have been quoted showing that he still regards them worthy of consideration. Thus he calls attention on page 116 to the following fact:

"We have now discovered five filaments of protoplasm which join the cells of vegetal tissue (formerly believed isolated from each other), enabling them to maintain a **psychological** communication (with each other) or between their living plasmic contents."—That means, of course, that the cell-souls of the plants have joined their individual cells together with these filaments for the purpose of entering **en rapport** with each other thru a telepathy they alone understand, their object being to preserve the integrity of their organization for its natural tenure of life. But can this object be attained unless they establish a **Teleological Communion** among themselves? Is in Haeckel's presentation not a living force associated with psychic energy distinctly implied, and that this vito-psychic entity operates and controls the physiological functions of the plant for the teleological purpose of enabling it and its progeny to enjoy a conscious living existence?

Continuing, he says: This is the explanation of the Mimosa: when the tread of the passer-by shakes the root of the plant, the stimulus is immediately conveyed to all

the cells and causes a general contraction of its tender leaves and a drooping of the stems."

But in this explanation the "**psychological communication**" is ignored which he recognized in, and conceded to the cells of the living vegetal tissue in the foregoing paragraph. Accepting this in preference to his mechanical interpretation of the manifestations of intelligence in the movements of the sensitive plants, would say that they seem to be prompted by the same instinct of self-preservation which induces spiders, opossums and other animals to feign death at the approach of marauders, knowing that these rarely touch dead bodies, hence they trust to this deception for their safety. **No conscious judgment in this?**

Haeckel partially endorses the above in these words on page 177:

"Fechner, in particular, has endeavored to prove that the plant has a soul in the same sense as an animal is said to have one; and many credit the vegetal soul with a consciousness similar to that of the animal soul. **In truth,** the remarkable stimulated movements of the sensitive plants (the Mimosa, Drosera and Dionaea), the clover and the wood-sorrel, the movements of the 'sleeping plants', etc., are strikingly similar to the movements of the lower animal forms: whoever ascribes consciousness to the latter cannot refuse it to such vegetal forms."

Admitting their movements to be strikingly similar to those of animals, **where is the difference?** They are not only **stimulated,** but also **simulated.**

Even Binet admits, on page 65, that "The explanation of the **physical** nature of these associations appears to us totally impossible," in proof of which he cites on page 64 the case of "the Amoeba which, when it seizes a nutritive particle, always emits its pseudopods at precisely that part of its body where the foreign body causes the irritation."

Can conscious sensation and judgment be more unmistakably revealed by the highest orders of life?!

CHAPTER 37

HAECKEL'S ENDORSEMENT OF THE CELLULAR THEORY OF CONSCIOUSNESS. RECOGNIZES THE ENTITY OF PSYCHIC ENERGY. MIND STANDS IN THE RELATION TO FUNCTION AS CAUSE AND EFFECT. UNCONSCIOUS CEREBRATION A FALLACY.

Another correct view is expressed by Haeckel in these terms on page 177 under heading: **"Cellular Theory of Consciousness.**—It is a vital property of every cell. The application of this theory to every branch of biology involved its extension to psychology. Just as we take the living cell to be the elementary organism in anatomy and physiology and derive the whole system of the multicellular animal or plant from it, so, with equal right, we may consider the cell-soul to be the psychological unit, and the complex psychic activity of the higher organisms to be the result of the combination of the psychic activity of the cells which compose it. I gave the outlines of this cellular psychology in my General Morphology in 1866 and entered more fully into the subject in my paper on Cell-souls and Soul-cells. I was led to a deeper study of this elementary psychology by my protracted research into the unicellular forms of life. Many of these tiny, generally microscopic protists show similar expressions of sensation and will, and similar instincts and movements to those of higher animals; that is especially true of the very lively infusoria. In these sensitive cell-organisms we seemed to have clear indications of **conscious** psychic action."

The above is fully endorsed in these words on page 3: "The cellular theory which has been founded on that discovery (that all pluricellular plants and animals are developed out of one simple cell) has given us the first **true** interpretation of the physical, chemical, and even the psy**chological** processes of life."

But best of all, he recognizes life, mind, soul, thought and reason, etc., with which vital force is inalienably associated—they constituting one and the same identical form of force, as will be further shown in last part of this volume—**as an entity** in these words on page 221: "The most elaborate and most perfect forms of energy that we know,(is) the psychic life of the higher animals, the thought and reason of man".—As an **energy,** psychic life, (which manifests itself in the vital and purposive func-

tions of plants and animals,) must be placed in the category of entities with the physical forms of force, this view being sustained by his statement that "**we know**" the psychic forms of energy referred to, it begin an axiom that scientists **know** only such bodies of matter or force of whose realistic existence they have obtained satisfactory evidence.

Yet the above strong position of the Professor is again shaken in these words on page 198: "The soul itself is the sum-total of the **physiological** functions of the psychic organs".

A function of any kind is a nonentity like all other motions or processes, they having no realistic existence in themselves, that is, they cannot be analyzed and resolved into any constituent elements. Or, like the realistic forms of physical or mental energy, nonentities cannot set bodies in motion, as does the cell-soul, for instance, in building up from the material it absorbs from its environs, a grand organic structure, or like the skilled mechanic who designs and constructs with vito-psychic energy a work of art. Whatever is capable of doing work, or producing some function or process, must be regarded by virtue of these potencies as a veritable entity. Thus the **body** that moves and the **force** that impelled it are entities, but the **motion** produced is a nonentity—a mere concept.

Hence the soul or the vital force of a plant or animal is not the sum-total of its physiological functions, but it is that potent power which sets their physical substrata or machinery into the motions we recognize as their physiological processes, from which it follows that life, mind, vitality, soul, etc. stand towards all functions in the relation of cause and effect—the cause naturally anteceding and existing independent of the effect, which is in strict accordance with the postulate of science that all forms of energy, whether they manifest themselves in a dynamic form, or as vital force, are indestructible, hence eternal, but subject to transmutation from potential to kinetic, and from kinetic to potential states again.

Even Haeckel recognizes the verity of the above in the following statement on pages 119-120: "The impressions in the bioplasm which the stimulus produced as sensations, and which became presentations in remaining, are revived by memory; they pass from potentiality to actuality. The latent potential energy of the psychoplasm is transformed into kinetic energy."

In this connection the following correct and important statement should be noted which appears under heading of **Cellular Memory** on page 120: "The elementary memory of the unicellular Protist is made up of the molecular memory of the plastidules or micellae of which its living cell-body is constructed."—This is in line with my contention that our supra-mind is the sum of the originally diffused supra-element (still diffused thruout plants and un-nucleated cells); the subconsciousness the sum of the psychic force resident in the individual cells of a plant or an animal, and the cell-soul the sum of the mind-forces resident in its plastidules, molecules and atoms.

But the validity of Haeckel's position is again impaired by the statement in same paragraph that he has "attempted to show that **unconscious** memory is a universal and very important function of all plastidules; that is, of those hypothetical molecules or groups of molecules which Naegeli has called micellae, others bioplasts, and so forth."

'Unconscious memory" is as great an antithesis, as palpable a contradiction of terms as "unconscious cerebration","insensate sensation","motionless motion", etc. all utterly inconceivable propositions which but confuse the reader and leave the subjects they were intended to elucidate in greater confusion and obscurity than ever.

In concluding this part would say that the consciousness of both animal and vegetal cellules has been tentatively demonstrated by rendering them temporarily unconscious with narcotics.

PART V

MALFORMATIONS

(MORPHOLOGICAL IRREGULARITIES)

CHAPTER 38

THE GREAT STUMBLING-BLOCK OF SCIENCE TO THE RECOGNITION OF MIND IN OR ABOVE NATURE. HERBERT SPENCER'S GREAT UNKNOWABLE. HAECKEL'S SCIENCE OF DYS-TELEOLOGY. WHY MALFORMATIONS PROVE, INSTEAD OF DISPROVE, PSYCHIC FACTORS IN THE UP-BUILDING OF ORGANIC LIFE.

We will now consider the objection to the "telic idea" often made that the irregularities of morphological structure called malformations and monstrosities, including all other "ills that flesh is heir to", are incompatible with the theological or teleological doctrine of intelligent design.

That these and other vicissitudes of life constitute a formidable obstacle to the recognition of a Providential interpretation of cosmic phenomena "goes without saying". Indeed, but for these infractions upon the established order of Nature, Atheism or Materialism (now called "Monism") would never have reared their hydra-heads.

Thus to Herbert Spencer the trials and tribulations to which all organic life is subjected appeared of such magnitude that "they barred the acceptance of the God-idea", altho he resented the imputation of being a Materialist, with scorn, he contenting himself with regarding "the Infinite Source from which all (transient) things proceed" as a "**Great Unknowable**" entity.

To Prof. Haeckel these aberrations of "Dame Nature" from the path of morphological rectitude assumed such proportions that he considered it worth while to assemble the "extremely interesting and highly significant biological facts" relating thereto into the material for a foundation to his new "**Science of Dysteleology**" with which to vanquish that "uneasy phantom of **Teleology**" and its sister-spook **Vitalism**, forever and bury them beyond all danger of resurrection.

But, alas! "like Banquo's ghost, they will not down!" despite his referring to them (with unutterable contempt) on page 264 as "curious teleological hypotheses", and as "the ancient phantom of a mystic vital force", he preferring to ascribe all cosmic phenomena (including "plants and animals which seem to be controlled by definite design just as clearly as we see in the machines which man constructs", as he admits on page 261) to purely physical processes, or blind and unconscious agencies, or physico-chemical reactions, or haphazard concourses of atoms, or to the Survival of the Fittest in the Struggles of Life, or any other mechanical explanation (?) that may happen to come within convenient reach.

What a formidable array of **Nonentities**—each and every one of them—with which to explain **"the marvels of the Universe with all that therein teemeth"!**

But, beg pardon! Has he not also given to the world the hypotheses of "unconscious mind; unconscious memories, unconscious cerebrations and unconscious presentations"?

Verily, with such **lucid** propositions the **Ultima Thule** of scientific research ought to be reached!

But let us examine the data upon which his new science that is to vanquish the alleged "curious teleological hypotheses" is built.

"Thirty-three years ago", he says on same page, "I gave the title of Dysteleology to the science of those extremely interesting and significant biological facts, which in the most striking fashion, give a direct contradiction to the teleological idea of the purposive arrangement of the living organism. This science of rudimentary, abortive, distorted, atrophied and cataplastic individuals is based on an immense quantity of remarkable phenomena which were long familiar to zoologists and botanists, but were not properly interpreted and their great significance appreciated until Darwin.

"All the higher animals and plants, or, in general, all organisms which are not entirely simple in structure, but are made up of a number of organs in orderly co-operation, are found, on close examination, to possess a number of useless or inoperative members, sometimes, indeed, hurtful and dangerous. In the flowers of most plants we find, besides the actual sex-leaves that effect reproduction, a number of other leaf-organs which have no use or meaning, (arrested or miscarried pistils, fruit, corona,

and calix-leaves, etc.). In the two large and variegated classes of flying animals, (birds and insects,) there are, besides the forms which make constant use of their wings, a number of species which have undeveloped wings and cannot fly. In nearly every class of the higher animals which have eyes there are certain types that live in the dark; they have eyes as a rule, but undeveloped and useless for vision."—I see in this fact the very strongest evidence of intelligent design.

"In our own human organism we have similar useless rudimentary structures in the muscles of the ear, in the eye-lid, in the nipple and milk-glands of the male, and in other parts of the body; indeed, the vermiform appendix of our caecum is not only useless, but extremely dangerous, and inflammation of it is responsible for a number of deaths every year."—All due to ignorance, as we shall see.

"Neither the old mystic vitalism, nor the new, equally irrational neovitalism can give any explanation of these and many other purposeless contrivances in the structure of the plant and the animal; but they are very simple in the light of the theory of descent. It shows that these rudimentary organs are atrophied owing to disuse. Just as our muscles, nerves, and organs of sense are strengthened by exercise and frequent use, so on the other hand, they are liable to degenerate more or less by disuse or suspended exercise. But, although the development of the organs is prompted by exercise and adaptation, they by no means disappear without leaving a trace after neglect; the force of heredity retains them for many generations, and only permits their gradual disappearance after the lapse of a considerable time. The blind struggle for existence between the organs determines their historical disappearance, just as it effected their first origin and development. There is no internal purpose whatever in the drama."

Doesn't the blind struggle for existence between the sub-minds who built up organs which wanted to become useful, but failed, and thereby became atrophied, aborted and what not all, imply, nay, show that purposive design was involved both in their origin and their discontinuance as useful members? vestiges of them being preserved thru the force of the submental memory—the active principle of hereditary transmission, as will be explained in other chapters.

A partially correct view is expressed by Haeckel in

these words on page 266: "Even if the organism does perfectly adapt itself to its environment at a given moment (by which is meant, of course, a period covering several successive generations) this condition would not last very long; the conditions of existence of the environment are themselves subject to perpetual change, and they thus necessitate a continuous adaptation on the part of the organism."

But when a change of conditions and circumstances suggests to the subminds affected thereby corresponding modifications of structure, does the learned author of World-Riddles not suppose that they are loth to part with or relinquish members that have been of great utility to the organism in the past, and that they, therefore, are inclined to preserve them in an atrophied state as mementos of by-gone ages? And right here their **conscious memory** comes prominently to the front and asserts itself by transmitting their conceptions of the now neglected parts to the few remaining cell-souls who are deputed by the sub-consciousness to guard against their total obliteration, since new changes in the organism's environs may necessitate a restoration to their former spheres of usefulness.

It would seem that the Professor failed to assure himself of the soundness of his premises before starting on the elaboration of his Science of Dysteleology. He should, first of all, have familiarized himself with the nature, functions and possibly also with the shortcomings of the cell-souls to which the arrested, aborted or other imperfect members of a plant or an animal might be traced and which significant biological facts seem to militate against purposive design in the estimation of superficial observers. He should have judged the works of the teleomechanics of Nature as he does the works of man, bearing in mind that the bible adage: "**By their fruits shall ye know them**" holds as good in the domain of the former as it does in that of the latter.

It should be noted that there are as many different kinds and qualities of mind-forces in the Cosmos as there are different kinds of bodies in which they are resident and operative, and that both mind and matter are constantly retroacting upon each other, thereby producing the incessant metamorphoses to which all are subject. Hence when inimical agencies attack the plasmatic substratum of the subminds, their judgment and memory

must necessarily become impaired in a corresponding degree.

In other words: mind is as dependent for its temporary nature upon its physico-dynamic concomitant as this is subordinate for its transient properties upon the immanent mind-element with which it is inalienably associated. Upon this mutual retroaction hinge all physical and mental phenomena of the Universe. To this rule there is no exception. It constitutes the primary law of the Cosmos to which the ever-varying transmutations of mind, "matter" and force may be traced.

Thus all organic disorders of any kind are due to certain derangements of the cell-souls and of the plasma in and thru which they are operative, rendering them as amenable to infirmities and mental aberrations as is the supra-mind of man under similar adverse pathological conditions. Instead, then, of distorted, arrested, aborted or atrophied parts of a plant or an animal being incompatible with the telic idea, they prove mind to be the potent and active factor of the "purposive contrivances" of which all organisms are composed.

In elucidation of these views I will endeavor to outline from these abnormal premises the embryonic disorders which resulted in the production of the greatest **lusus naturae** known to history, namely, the **Monster of** Ravenna, a female born of human parents in the sixteenth century and which pseudomorph presented in its structure characteristics pertaining to the five principal divisions of the Organic Kingdom, that is: Radiate, Fish, Reptile, Bird and Mammal, and yet was endowed, despite this annulment of all biological laws, with the tenacity to live to adult maturity. Yet even under these adverse conditions, Haeckel would have found it utterly impossible to discover a single part in her physiological constitution which had not a special function to perform or that did not exhibit "definite design in combination and co-operation with other parts as clearly as do the machines which man constructs."

CHAPTER 39

WHY THE HISTORY OF ORGANIC EVOLUTION REPEATS ITSELF IN THE EMBRYOLOGICAL LIFE OF EVERY INDIVIDUAL OF THE HIGHER ORDERS. WHAT DETERMINES THE TYPE OF THE INDIVIDUAL AT ITS BIRTH. HEREDITY FROM NEW VIEWPOINTS. THE CAUSE OF STRUCTURAL IRREGULARITIES. THE PRINCIPLE OF SELF-DEVELOPMENT.

That greatest of all "freaks of Nature" referred to in our last, i. e., the **Ravenna Monster**, was, indeed, a personified epitome of Organic Evolution from Moner to Man. It seemed in fact to be another object-lesson furnished for man's edification designed to reveal to him in mature perfection some of the ontogenetic stages thru which he has to pass during his embryonic career. But before entering into an analysis of this subject we will briefly outline from teleo-mechanical premises the processes of development under normal conditions, since this will better enable the reader to realize why the slightest deviations from the established course is bound to result in all manner of morphological irregularities and physiological anomalies.

As is well known to all who have but the least knowledge of Embryology, the pre-natal life of every human being (and **a forteriori**, also of the lower orders to a certain extent) may be regarded as an exact objective recapitulation of the entire history of Organic Evolution, the embryo presenting at the various stages of development the more pronounced characters which distinguished its predecessors during their phylogenetic and ontogenetic career from the first self-evolved Monera up to that particular plane of development they attained at maturity.

My interpretation of these phenomena is that the memories of the sub-minds or cell-souls engaged in building up a new organism assert themselves in their consecutive order, or in regular line of succession from the most primitive forms of organic life up to the stage of evolutionary development the individual attains at adult age. In other words: upon the cell-soul of the cytula and consequently also upon its daughter-cells are mnemonically impressed not only all the physical and mental characteristics of its entire ancestry, but also the manner of rotation in which these characters were acquired or

evolved during the past generations. Now since the first cognitions of these ancestral characters pertained to the Protozoan and earliest Metazoan (pluricellular) stages, these memories assert themselves, by virtue of their priority and consequent prepotency, in advance of all others, these following later, becoming operative in their regular order of succession.

Thus upon the cell-soul of a human stem-cell or fecundated ovum (cytula) are impressed in a latent, yet potential form all the characteristics of the individuals of the lower orders of life from which its genitors descended, the forms pertaining thereto being revived and becoming operative during the course of development of the embryo whose individual cell-souls received their impressions of how to proceed in their processes of segmentation from their predecessors, these from theirs and so on down to the stem-cell again (or its successors as the case may be) which started them on their career of development.

To be more specific: after the primary impressions have left their imprints upon the embryo, the second set of memories relating to the next higher stage of development begin to assert themselves, resulting in a transformation corresponding with the new images impressed upon, and now in force within, the slowly developing sub-consciousness of the embryo. These impressions also gradually lapse after having been in operation for a certain period, to be succeeded by a still later set of memories, that is, by those pertaining to the still higher order of organic development which in their turn leave their imprints or characters on the growing organism. After these mnemonical impressions have performed their functions, they become inoperative or dormant in their turn, retiring for the next set of cognitions to assert themselves by modeling the embryo in accordance with their own inherited conceptions, resulting in a form which still nearer approaches that of the highest achievements of the teleo-mechanics of Nature—man. In this way one after another of the various phases of evolution thru which his primogenitors had to pass, is superseded by others until the last set of memories of their distinguishing features has accomplished its mission, and the result of their labors represents, at its birth, the highest type of characters of which the individual's cell-souls were cognizant.

The history of Organic Evolution has thus been reenacted by virtue of the innumerable memories relating

thereto having been aroused from their semi-lethargic state by slow degrees until all have fulfilled their respective missions in the field of Procreation by ushering the now perfect, tho miniature prototype of their predecessors into a comparatively independent existence.

Yet, until the child has attained its full maturity, other still latent memories of its constantly expanding sub-consciousness continue to assert themselves, as is seen in the metamorphoses incident to its growth and development, during which new physical characters appear, and new mental traits become more prominent with its advancing age, until the entire set of inherited impressions has become exhausted—no new ones remaining to put in their work by still further diversifying its morphological structure.

The organism has then attained its maturity, but owing to the invaluable services the supra-mind has (unknowingly) rendered the subminds during their gestatory labors (by serving as the guardian over, and provider for, the organism, these being the two chief offices of the supra-consciousness, as has been shown) the cell-souls continue to devote special attention to the development of the brain-proper (so-called in contradistinction of the whole nerve-system which is the brain of the subminds), as will be seen in the fact that the supra-mind continues to increase in vigor (in the majority of cases) long after the body has attained maturity, and further development has ceased.

We have now shown the processes of embryological development in connection with the principles of Heredity from normal viewpoints, i. e., that the cell-soul of the cytula, being cognizant of both the physical and mental traits of its genitors (present and ancestral) governs its modes of cell-formation by virtue of this awareness. If not interfered with in its work and that of its daughter-cells who receive their "cue" of how to proceed in their proper order of succession, the result will be in accordance with the parental impulses imparted to the cytula, that is, a duplicate of the parents will be produced, while if the cell-souls of the embryo are disturbed or diverted from their tasks, malformations are the inevitable result.

In this connection it should be noted that the purpose and definite design Haeckel recognizes in the parts or members of plants and animals, and which members, like everything else, are vaguely attributed by Monists to

Evolution and blind mechanicism (both nonentities, i. e., abstract concepts existing only as mere ideas in learned men's brains) are the result of a gradual dawning upon the cell-souls that first conceived of and originated (designed) them, of the advantages such members will be to the cell-community in its and its progeny's struggle for existence. The mere conception of a new idea of that nature assumed during countless generations definite form thru the sub-minds so governing their processes of cell-formation as to result in a practical "materialization" of the idea in the production of the additional member. Being evolved in conformity with its environs, we may also see herein an exemplification of the law of Adaptation.

And while thus engaged in perfecting their multifarious lines of labor, the teleo-mechanics of Nature are enabled to reach higher planes of existence even as the supra-mind of Man develops thru his efforts to perfect his various works of Art, both gradually advancing from the most inferior stages of existence until they have attained their present comparatively high altitude.

This tendency to perfect themselves is due to the peculiarity of all mind to develop itself, of which tendency any one will become cognizant during a few moments of introspection, that is, of observing the drift of his processes of ratiocination which will show him that his mind solely aims to improve its condition in life. Now the lower this condition is, the more forcibly will the necessity of improvement present itself. This admitted, then that which is the characteristic feature of our minds, must also be the distinguishing trait of all the minds beneath us in the scale of life, including the subminds or cell-souls of all animals of high or low degree, and also the plastidules, molecules and the very constituents of matter to which the monistic Haeckel concedes mind of the most inferior order. To this innate principle of self-development may all organic evolution be traced. Thru the evolution of organic life, the evolution of the mind in Nature was effected until it reached its culmination in the subconsciousness and supra-consciousness of Man.

CHAPTER 40

THE MONSTER OF RAVENNA AND OTHER PSEUDOMORPHS. CHILDREN WITH A MULTIPLICITY OF HEADS, ARMS, EARS, LEGS, AND FEET. TWINS WITH BODIES GROWN TOGETHER. CLEAR CASES OF SUBMENTAL DERANGEMENTS. RADIATE, FISH, BIRD, REPTILE AND MAMMAL IN ONE INDIVIDUAL. CYCLOP-EYES.

Having thus briefly outlined the normal conditions prevailing during gestation which give rise to healthy and well-formed offspring, we will next consider the abnormal states to which all irregularities of morphological structure can be traced.

We shall take in illustration of this subject the most remarkable **lusus naturae** on record, namely, the **Monster of Ravenna,** since the same agencies which were instrumental in producing this strangest "freak of Nature" known to Man, are also responsible for the minor ones, hence the principles involved in the causation of the former case apply with equal force to the latter, they covering, indeed, all structural deformities which are generally attributed, for the want of a better explanation, to "natural causes", but which we shall endeavor to show in our next chapters to be due to derangements of the pseudo-forms' subconscious minds.

Of the minor malformations on record, the following deserve special notice:

In the year 1597 a male child was born in France which was covered with hair like a beast. Its navel was in the place where its nose should be, and its eyes were set in the chin.

A boy was born in Germany (time not recorded) with four ears, four arms, four thighs, four feet and four legs. The child lived for several years but never learned to walk. Its vital force was dissipated among its superfluous members, hence was insufficient for its locomotor functions.

In the time of King Henry III a female child was born with two complete bodies up to the navel, that is, it had two heads, four arms and hands, all other parts being normal. She lived to womanhood.

In Uthaton, Flanders, two girls were born whose bodies had grown together. They had two separate heads, also two feet, but one's left arm, and the other's right arm were forced to remain lifted over their heads. They lived several years.

A dog-faced boy was exhibited in Barnum's circus in Europe and America. He was born in Kastroma, Russia, and died January 31, 1904.

A news item from Ulm, Germany, of Dec. 31, 1905, states that a three weeks old girl-baby died there—the offspring of normally developed parents of good moral habits. The freak about this child was a cyclop-eye which sat exactly in the center of the forehead, being made up of the two eye-apples with the two pupils grown together. The nose was flat, but above its solitary eye it had a filmy protuberance thru which it breathed. A doctor Brand preserved its body in alcohol for scientific examination.

But the strangest of all strange freaks of deranged subconscious minds was born in the Sixteenth Century of human parents and lived to an adult age. Under the heading: **"An Early Description of the Horned Italian Monster of Ravenna"**, the St. Louis Republic of Sept. 1894, says:

"In the writings of both Licetus and Zahn may be found descriptions and illustrations of a monster born at Ravenna, Italy, in the year 1511 or 1512. This monster had a body and shoulders like those of a young woman. There was but one leg, gradually tapering from the hip down, and terminating in an immense scaled claw, like that of a turkey-buzzard. There were four toes, each tipped with a horny nail, three of them pointing to the left and one to the right. The creature had wings in place of arms and always held them in an erect position as though ready to take flight at the slightest provocation. From the knee-joint to the foot the leg was scaled like that of a common barn-yard fowl, the spot where the feathers left off and the fish-scales commenced being marked with a large lidless eye which seemed incapable of voluntary motion. The neck, head and outlines of the face were those of a woman, but the ears were large and sat very low, almost on the neck. The head was covered with a queer mixture of scales, feathers and hair, but the oddity of the whole 'upper-story' was a pointed horn which rose out of the center of the forehead. This horn was three inches in length, and according to Zahn, even a farmer would have mistaken it for the horn of a three year old heifer if it had been removed and shown him.

"The old-time wonder-mongers all gave descriptions

of this horned Italian monster but no one told how long it lived or what was done with the body after death.

"There is a splendid tinted picture of it in John Ashton's 'curious Creatures', page 173."

Another writer claimed that it had eyes over various parts of its body—a reminiscence of the Polyp stage of Evolution, numerous visual organs being distributed over the bodies of certain species of these animals, denoting an acute sense of self-preservation for which these organs were especially evolved.

CHAPTER 41

OUTLINE OF THE RAVENNA MONSTER'S PRE-NATAL LIFE. THE "INSTINCTS" WHICH CAUSED ITS BEING COVERED WITH FEATHERS, SCALES AND HAIR. BRAIN-CELLS IN INFERIOR GANGLIA. A CLEAR CASE OF SUBMENTAL DEMENTIA.

If the subminds of this morphological abnormity had "gone stark mad" while moulding its protoplasmic clay, they could not have produced anything more erratic in a being capable of exercising the ordinary functions of organic life. Representing in its structural formation the five chief divisions of the animal Kingdom, the cognitions pertaining to the first four inferior ones continued in force during its entire gestatory period, that is, even after the memories relating to the human characters had become aroused and operative. Under normal conditions the earlier impressions would have lapsed, one after the other, into a semi-dormant state, thereby giving the last ones in the line of succession full control in the elaboration of the embryo and enabling them to absorb or eliminate all that remained of the reptile, bird, fish and radiate phases until not a vestige of them remained at birth.

But in the present case many of the cognitions and memories pertaining to these inferior orders of life remained in active operation not only during this freak's entire embryonic life, but also until it had attained its full maturity as was seen in the fact that they continued in full control of the processes of development while life lasted.

Thus in its incessant attempts to fly at the slightest provocation, we see that the submental instinct of the feathered tribe was still prepotent and operative on every occasion. The scalp being covered with a strange mixture

of scales, feathers and hair indicated that one set of cells was cognizant of the peculiar covering of the finny tribe; another set was aware only of the downy robe of birds, while yet another set recognized the advantages of a hirsute protection against the inclemency of the weather.

Those cell-souls which brought forth its solitary horn, had, no doubt, received from some ancestral line of descent an impress of the benefits derived from these particular means of offense and defense. Thus in any given part or member of a plant or animal the functional activities which constructed it were the product of active memories or conceptions of the corresponding members of their ancestors, including the modifications which experience may have suggested to their subminds during each generation. The sum-total of these modifications of structure we term "Evolution".

Thus each cell-soul involved in the production of the abnormal ancestral characters was mentally deranged just to that extent. The memories which should have lapsed after they had performed their normal functions, remained prepotent until the characters pertaining thereto had become permanent features.

One of the most remarkable freaks about this pseudomorph was its tapering lower limb (instead of two legs) with its immovable eye, said limb possessing all the appearance of an arm of the starfish, (Radiata). Thus many low forms of life have visual organs distributed over their bodies (some polyps having one in the tip of their tail), and as these organs are invariably located in close proximity to the seat of the supra-consciousness in the higher animals, we may analogically infer that some forms of consciousness are centered near these visual organs of the inferior beings. In fact, a substance resembling the "gray matter of the brain" has recently been discovered in the inferior nerve-ganglia of many animals, which can serve only in the capacity of a cerebral organ for their subconsciousness which becomes intensified thereby.

The presence of a rudimentary eye in the radiatal arm or limb referred to, indicates that ancestral memories pertaining to the visual organs of the Radiata had in some manner become revived and operative to a limited extent.

Certain it is that if the entire submental forces of this abnormity were during its embryological life in a

state of **dementia**, the result could not have been more subversive of all the principles governing hereditary transmission.

CHAPTER 42

Prof. Henry James Clark's (of Harvard University) Theory Of Malformations And Monstrosities Reviewed. Budding, Fission, Fissiparity. Negation Of Aphorism "Omne Vivum Ex Ova." (All Life Comes From An Egg.) Submental Aberrations Responsible For All "Freaks" and Other "Ills That Flesh Is Heir To." Evidence Of Conscious Memory In Hereditary Transmission.

Henry James Clark, Professor of Zoology in Harvard University, in his volume on "**Mind In Nature, Or The Origin Of Life And The Mode Of Development Of Animals,**" (D. Appleton and Company, New York, 1865), which excellent work I have taken the liberty to quote from in other chapters, presents on pages 85 and 86 the following theory in regard to malformations and monstrosities:

"I have not, by any means, begun to exhaust the numerous instances in which individuals originate without passing through the condition of an egg which is a negative of the old aphorism: 'Omne vivum ex ova. All life comes from an egg.' The process of budding prevails not only among the lowest forms, but we have it even in Vertebrates, especially among the fishes, as Lereboullet has shown. Sometimes, according to this observer, an egg divides into two fishes; sometimes the division was only partially carried out and the result was a fish with two heads and two tails. ... It is not a rare thing to find full-grown snakes with two heads or two tails. Dogs, calves, cats, etc., have been born, and have grown up with an increased number of heads or legs, and even Man seems not always to have been contented with one head. Isidore St. Hilaire has recently published a work in which he has given a great number of examples of this kind of human duplicity, not only of the head, but also of the heart. (?) ... The Siamese twins are probably an example where the egg did not altogether separate into two parts. This phenomenon most frequently occurs among the lower animals. As we ascend in the scale we find that it happens rather as an exceptional rule and its appearance amongst the highest is looked upon as a **monstrosity.**

"Now it is a noticeable fact that these duplications

and buddings which occur among the highest animals make their appearance by far most frequently among the lowest and diseased classes where the qualities of life are in the most degraded condition. It would seem as if the individuality of the healthy, natural man loses its power of concentration and tendency towards a higher life when disease ensues and especially when it is propagated from parent to child and from child to grand-child, and that Nature then reverts more or less toward the lower, more degraded kinds of existence and naturally reproduced herself according to a method which corresponds to this reduced condition in which there is an approximation to the state of vitality and grade of the lower creatures on this Earth. This, I am inclined to believe, is the true explanation of the phenomenon called **monstrosity** among the highest kinds of animals."

On page 109 Prof. Clark says that "What is called **Monstrosity** may be explained as an abnormal recurrence to the lower modes of reproduction consequent upon a low state of vitality in disease or hereditary degeneracy."

This theory is hardly held out by a case that came under the writer's own observation of a child resembling, both physically and mentally, a brute more than a human being whose parents were healthy, refined and moral. The child lived to maturity. In neither the father's nor the mother's family was an instance known wherein such alleged reversion to the modes of the lower orders of life had taken place, or wherein any traits of hereditary degeneracy had appeared or had even approximated thereto. I can attribute all anatomical abnormities and physiological infirmities only to the aberrations to which all mind in Nature is subject—from which none is exempt.

Neither is there any trace of irregular fission perceptible in such pseudomorphs. Only the unusual duplication or triplication of parts, as in the instances cited by Prof. Clark, may be ascribed to defective fissi-parity, while in the Ravenna monster even the law of Bilaterality was inoperative, as seen in the creature having had only one lower limb instead of two, and only one horn on its head where two generally appear. Hence other causes must have conspired to produce these anomalous results.

It should also be noted that this "freak" reached an age rarely, if ever, attained by the offspring of parents of low vitality, hence the fact that it lived to full maturity despite the physiological disadvantages under which it must have labored, goes to show that a degeneracy of vital forces could not be charged against its parents as

the cause of the phenomenal irregularity of structure of their offspring.

The physical causes pointed out by the learned Professor of Harvard University being, therefore, inadequate to account for these biological phenomena, we are necessarily forced to resort to the realm of **Mind** for the solution of these problems. This leads us, first of all, to a fact well known, namely, that undue mental excitation of the prospective mother is one of the most prolific sources of malformations.

Now since the struggles for existence are much fiercer in the lower ranges of life than in those with which we are familiar, it follows that the causes which led to irregularities of structure among these inferior beings must be of essentially the same nature, that is, produced thru some violence sustained by the sub-consciousness of the mother. And since we know of no mental shocks that are not caused by a conscious perception of the objective or irritating cause, if this be of such a nature as to produce a violent impression upon the mother's sub-consciousness which transmits it to that of the embryo, these mental impressions may operate as determinants of cell-formation in the same manner as tho they had been imparted by hereditary transmission.

The psychic activities of simple cells reveal that their mind is, comparatively, as intense in their circumscribed spheres as in our own, hence as liable to "run riot" under undue excitation and with the same prejudicial effect upon their progeny as in the higher ranges of life.

Likewise may disease or loss of vital force of the mother so impair the judgment and memory of her and her offspring's cell-souls as to seriously retard its normal development or cut short its life.

Again, since the subminds are cognizant of all impressions made upon the sensorium, it follows that all exterior influences which occasion more or less perturbation in the mother's supra-consciousness are deflected upon her sub-mental fund of memories, cognitions and ideations, turning them into entirely different channels than are those into which they were primarily directed, thus leaving a permanent impress upon the developing organism. And since all inimical agencies capable of producing such effects cannot fail to lower the vito-psychic forces of both mother and child to a proportionate degree, the tendency of the embryonic processes of development must necessarily be towards a return or a reversion to the lower types of life, it being far easier to descend than to

ascend in any sphere of activity. Hence the irregularity of morphological structure thus occasioned must necessarily terminate in the development of members pertaining to the lower orders, of which effects the Monster of Ravenna furnished us an extraordinary example if we assume that its mother's supra-mind was during an early stage of her pregnancy shocked with the appearance of animals that left their impress in the manner described upon her unborn child.

From the fact, however, that all of its physiological functions operated normally during its life, it is evident that its subminds could not have been deranged in the ordinary meaning of this term. All of its anomalous features may probably be traced to their memory relating to their line of succession being destroyed, thereby impairing the harmonious co-operation of the subminds thru which alone a normally developed organism can be reproduced. The direct cause of the malformation may have been a serious disturbance of the mother's supra-mind retroacting upon her subconsciousness which in its turn disturbed the train of ideations of the cell-souls directly engaged in the development of the embryo.

Other morphological irregularities may result either from an excess or from a want of proper attention on the part of the subminds to certain parts of the developing organism—excess of attention producing an abnormal growth of the part affected owing to the amount of building material sent to it far exceeding its requirements, while a lack of attention results in an insufficient supply being deposited for the use of the cell-souls located in that quarter, thereby leaving the parts in a dwarfed state.

Other sources of pseudoforms may be found in the abnormal revival of long-dormant memories relating to discarded or useless members, that is, of characters pertaining to our ancestors in our phylogenetic line of descent which parts our subminds have cast aside as superfluous to our present organisms (tho they missed it in not leaving us wings!) Being revived, as they were partly in the Ravenna Monster, these memories operate as the determinants of the processes of cell-formation in the parts affected until these abnormal characters are to a certain extent incorporated in the embryo.

Summed up, we may regard the infirmities and aberrations of the cell-souls of plants and animals responsible for all the freaks and other "ills that flesh is heir to."

CHAPTER 43

Deductions And Analogues. The Fallacy Of The Belief That The Subminds "Supervise" Or "Preside Over" The Functions Of The Organism. The Relation Of The Subconsciousness To The Cell-Souls. Sane And Sound Vs. Unsound Subminds. Phylogenesis Illustrated In The Ravenna Monster Ontogenetically. The Conscious Memory Of Its Cell-Souls Preternaturally Expressed. How The Mind In Nature Conceives, Thinks and Memorizes.

Having seen that the subminds of the greatest **lusus naturae** on record proceeded in their work along lines greatly diverging from those laid out for them by the laws of Heredity, with the result that a personified epitome of the various evolutionary stages thru which every human being has to pass during its embryonic career was produced, it is next in order to draw from this most erratic of all organic phenomena certain deductions and analogues which are hereby presented as follows:

First.—The generally entertained notion that the subconsciousness "**supervises**" or "**presides over**" the physiological processes of a plant or an animal must be discarded as a fallacy since the subminds of the normally developed human parts of its body evidently operated independently and normally without the interference or guidance of any other mentality, while those cell-souls which built up the members representing the lower divisions of the Organic Kingdom, must have labored under some kind of mental aberration or delusion which facts preclude the idea that a single mind controls all the physiological processes of the body.

Thus if a sane and sound subconsciousness had directed its pre-natal functions, no irregularities would have appeared, while if they had been directed by a deranged mentality, not one sound member would have been constructed, not one vital organ would have been able to perform its function, with the result that this abnormity would never have seen the light of day. Its development would have been arrested at the very start. This probably accounts for abortions—miscarriages.

Yet in the sense that the sum-total of the cell-souls' vito-psychic energy which animates a plant or an animal co-operates to build up a certain kind of an organic structure, we must recognize this entire body of mental force as one mind, its relation to the individual cell-souls being such that these retain a semi-independence in all their functions as was shown in the Object-Lesson we present-

ed to the reader under heading of the "Siphonophore Republics." Since the sub-consciousness, then, maintains but a subordinate or subjective relation towards its cellular constituents, we must regard these as directly responsible for all anatomical irregularities and physiological disorders, tho the cell-souls are in a great measure dependent for all their actions upon exterior influences or agencies in conformity with the law of Adaptation.

Second.—From the above premises we may divide the cell-souls which were engaged in the up-building of the pseudomorph under consideration into two classes, to wit: one class which was engaged in constructing the exclusively human parts of the organism, namely, the main body and part of its head, were in all respects sane and sound, while those which produced its abnormal characters labored under false impressions relating to their functions to such an extent that we cannot regard them as anything less than mentally deranged. As there are different degrees of **dementia,** from the mildest to the most severe forms, all other abnormal conditions of organic life which come under our observation may be attributed to the same causes.

Third.—Of the various faculties that were operative in the creation of the Italian monster, **Memory** stands forth in bold relief as the most prominent of all, since in the abnormal development of those parts which represented the ancestral phases of mollusk, fish, bird and reptile, as well as those which pertained to the normal human characters, the conceptions or **mental imagery** of the cell-souls of all these various parts were distinctly expressed. Even as the Colonial Sea-nettles furnish us an exquisite illustration of the operation of the principle of the **Division of Labor,** so was the Monster of Ravenna a vivid exemplification of the great biological law that the **Force of Conscious Memory** to which all hereditary transmission may be traced, is the determining factor of the transformation stages typical of the phylogenetic history of the Organic Kingdom which repeats itself in the life of every individual of the highest orders. It was, indeed, a living model of Phylogenesis illustrated ontogenetically.

Fourth.—We find that the cognitions pertaining to the ancestral features of the abnormity under consideration remained mnemonically impressed, or were memorized upon its subminds to such an extent that they could not fail to leave their permanent outlines upon the developing organism. Thus were the memories relating to the principal characters of the lower divisions of the Ani-

mal Kingdom continued in force long after their normal period of activity had expired with the result that their distinguishing features were developed at the expense of many of the distinctly human ones, showing that the **Mnemone** had been preternaturally active during gestation. All mind in Nature conceives, thinks and memorizes in images.

And **fifthly** we find the analogue to these mental delinquencies of the sub-conscious minds in the infirmities and shortcomings to which even the highest cultivated supra-intellects of man are amenable. This is but another exemplification of the biogenetic law of Heredity that "Like begets like; as the parent, so the offspring. The stream can rise no higher than its source."

As a "timely suggestion" it may be well to add that a morbid imagination of the mother while **enciente** may also, if persisted in, be of such force in its reflex action upon her offspring's subminds as to stamp the characters of the unseemly images upon the body of her child. Any undue excitation of any kind or nature exerts a retroactive influence upon her own subconsciousness which in its turn transmits the impressions received to the cell-souls of the embryo whose "plans" may thereby become more or less deranged with disastrous results. All violent disturbances of the prospective mother's supra-mind may, therefore, produce pre-natal markings reflecting the objective cause of the perturbation.

Conversely, well-proportioned bodies indicate that equal attention was bestowed by the embryo's cell-souls upon all parts and organs, nothing having occurred during maturation to divert their labor in any way. All the memories relating to their ancestral line of succession were thereby enabled to assert themselves in their regular order and become operative for their allotted period as established by the hereditary laws of Philo-and Onto-genesis.

CHAPTER 44

Haeckel Recognizes "The Orderly Arrangement of Organic Structure." Darwin Sees "Grandeur In a Divine View Of Life." Atrophied Members Relics Of a Departed Glory. Confutation Of Haeckel's "Science Of Dysteleology." Rehabilitation Of Disused Organs.

We have quoted Haeckel to the effect that "the highly interesting and significant biological facts upon which his Science of Dysteleology is based were not prop-

erly interpreted and their great philosophical significance appreciated until Darwin." To this observation we would remark that whatever interpretation Darwin may have placed upon these seeming irregularities of structure, they did not shake his faith in the necessity of postulating a divine Mind for all that is good, grand and glorious in the universe, as the following peroration on last page of his epoch-making work on "The Origin Of Species" clearly attests:

"There is grandeur in this view of life with its several powers having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful have been evolved." Because all things were not in accordance with his notions, Darwin did not see therein a valid reason for doubting the Creator's intelligence. Haeckel's "dysteleological facts" could not obliterate the overwhelming mass of counter-evidence of purposive design in Nature with the elaborator of the principle of "Natural Selection."

Even Haeckel admits on page 264 that: "All organisms which are not entirely simple in structure, are made up of a number of organs in orderly co-operation." This not only implies purpose, but also necessitates the exercise of judgment during the orderly co-operation carried on between the parts involved. As for the exceptional parts for which no special use appears, they, no doubt, filled a certain want at one time in the animal or vegetal "Economy." If the majority of the members of a "colony of cells" co-operate for the purpose of building up an organism in accordance with the lines laid out for them by their genitors thru the cognitions transmitted to their stem-cells, that fact alone outweighs all dysteleological arguments.

The atrophied, rudimentary or cataplastic members upon which Haeckel's "new science" is based, may, indeed, be regarded as the ruins of a departed glory, as relics of antiquity, as individuals who have outlived their usefulness, as the remains of actors who have disappeared from the stage of Life. To the memories of the remaining cell-souls, these souvenirs of Antiquity owe their survival. Their preservations after they were retired into "innocuous desuetude" indicates the potency of the inherited impressions their subminds retain of the purpose for which their predecessors designed and constructed them. And since they may be called into requisition

again whenever a change of environments necessitates their resuscitation, this affords an additional and very substantial reason for preserving the now discarded members for future generations.

Each and every one of the significant biological facts upon which Haeckel has based his Science of Dysteleology, analogically proves, instead of inferentially disproves, the telic idea of the intelligent and purposive construction of every form of organic life, for let the reason for their disuse be what it may, they must have had their inception and conception in a recognition of their utility in the struggle for existence at a time when the organism's conditions were different than they are now. Hence we can no more delete conscious intelligence from the minds of those who first conceived of their advantage, than we can deny sound judgment to the artisans who first designed and constructed the now obsolete contrivances we consign to the junkshop. Tho superseded by vastly more practical apparatuses, the antiquity, at least, of the remains of a former era of usefulness, deserves our respect for the primitive judgment of their designers as much or more than we bestow on those who brought them, or their substitutes, to a state of perfection.

And is Haeckel's Dysteleology not also confuted by his own words on page 261 as follows:

"But the idea of design has a very great significance and application in the organic world. We do undeniably perceive a purpose in the structure and in the life of an organism. The plant and the animal seem to be controlled by a definite design in the combination of their several parts just as clearly as we see in the machines which man constructs. As long as life continues, the functions of the several organs are directed to definite ends just as is the operation of the various parts of a machine."

Against this unimpeachable testimony in favor of the purposive arrangement of organic structure, Haeckel pits his few insignificant biological facts upon which he has erected his science of Dysteleology because it did not occur to him that the cell-souls preserved these remains of former useful members for the good they have done, as well as for the possible contingency that occasions may arise for rehabilitating them into their former station to again subserve the purpose for which they were originally designed.

CHAPTER 45

The Analogy Between The Minds in Nature And In Art. The "Psychological Metamorphoses" Of Virchow, Wundt, Du Bois Reymond, Kant, Von Baer And Other Eminent Scientists. Freedom Of The Will.

We will next consider the similarity of the nature and functions of the sub- and supra-minds. Both having the same plasmatic base, they must necessarily possess many features in common. Of these we will note, first, that they adapt their ways and means to certain definite ends. **Second,** they both exhibit the faculty of conscious judgment in connection with memory, (of which we find the strongest evidence in observing the activities of the lower orders of life.) **Third,** both manifest purposive design in even the most insignificant of their works. **Fourth,** all are endowed with the capacity of self-development by reaching higher planes of existence with and thru their own individual efforts, i. e. evolving **pari passu** with the bodies they design and construct. **Fifth,** all are subject to lapses of memory and consequent errors of judgment to which may be traced all "the ill's that flesh is heir to." **Sixth,** these may assume the extremes of dementia, resulting in monstrosities, epileptic fits and other violent mental or nervous disorders (the entire nerve-system being the brain of the sub-consciousness, as has been shown.) **Seventh,** both have advanced along the same lines and in the same manner from the simplest to the present comparatively high states of perfection, and **Eighth,** both have acquired their respective mental capacities thru a gradually accumulating fund of experiences, the comprehension of how to fashion the material at their disposal into the marvelous works of Nature and of Art having "**dawned upon**" them by infinitesimal stages until from the simplest beginnings forms most beautiful and grand have been and are still being evolved —forms each one of which is a step in advance of its immediate predecessor, the sum and substance of which progression we call "Evolution."

And thus it will continue until absolute perfection is reached. It has been, no doubt, reached in other worlds than ours long ere this. The teleo-mechanics of Nature and of Art on our little planet are as yet but in their infancy, both striving in their own way to reach higher ideals; both having their own aspirations and their own mission to perform. And is not every effort an aspiration, whether it be in the assembling of two or more

atoms into molecules, or these into plastidules (the links which join inorganic to organic matter, furnishing the material for the bridge which spans the hiatus that separates the inorganic from the organic mind in Nature,) or these into cells, and these into flowers, birds, apes or men? Does not every such effort—no matter how insignificant in itself—lead to something more complex and more potent, to something more surpassing and more elevated, to something broader and grander, and finally to something that transcends them all!

The above parallels in Nature and in Art show that both classes of minds are essentially identical in their native state, and that however they may err and their aims and objects be interfered with by inimical agencies or crossed by unpropitious circumstances (antagonism being rampant in both domains); however the minds of man may have blundered in those works of Art that are now consigned to oblivion or the junkshop, behold the results of their endeavors that now amaze us with their beauty, their complexity and their evidences of intelligent design—those of Nature causing those of Art to "dwindle, by comparison, into utter insignificance."

Could all this have been accomplished without their designers having been conscious of the objects they sought to attain? To say, then, that no form of mind can "aspire" without consciousness, seems a self-evident proposition, yet it is not at all clear to the learned author of **World-Riddles.** And why! Because he has declared it as his "unalterable conviction" that the sensations and movements of the lower orders are of an unconscious character, and from this decision there can be no appeal! It must be adhered to tho the heavens fall! Monistic Materialism must not be jeopardized by yielding a hair's-breath from the unchangeable attitude taken by its champion!

Would he follow that leader of German Philosophy, Immanuel Kant, who in his youth repudiated God and the **Freedom of the Will,** but in his maturer judgment found that they were postulates of sound reason and, therefore, indispensable to a correct conception of cosmic phenomena? Or that famous scientist, Prof. R. Virchow, "the eminent founder of cellular pathology who was a pure Monist about the middle of last century, defending the fundamental principles of Monism which I (Haeckel) am presenting here with a view to the solution of the world-problem, but later represented the diametrically opposite view?" (p. 94.) Or that no less eminent

physicist, Prof. Emil du Bois Reymond, "the distinguished orator of the Berlin Academy of Science, who had also defended the main principles of Monism during his earlier years, but later declared in his famous Ignoramibus-Speech that consciousness is an insoluble problem, he opposing it to the other functions of the brain as a supernatural phenomenon." (Ib.)

Consciousness is not opposed to, but associated with, the molecular mechanicisms of the brain, governing them as intelligently as it does all other movements made for some definite purpose, whether they appear in plant, animal or cell.

Finally, would Haeckel follow in the wake of Prof. Wilhelm Wundt, "considered the ablest living German Psychologist who has the great advantage of a thoro zoological, anatomical and physiological education and contended for 'unconscious souls' in his earlier years, but thirty years later, in 1892, published a book in which he repudiated his former position, declaring that: 'consciousness and psychic functions are identical; all psychic action is conscious. The province of psychic life is co-extensive with that of consciousness.'" (p. p. 101, 102, 171.)

On page 172 Haeckel says: "We can never have a complete objective certainty of the consciousness of others; we can only proceed by a comparison of their psychic condition with our own." But since the psychic condition of simple cellules is almost identical with that of the higher orders can he not find in these comparisons and analogies the "complete objective certainty" of the consciousness of the inferior beings who manifest it in the same way as we do ours and he does his?

CHAPTER 46

An Object-Lesson in Horology As Applied To The Evolution of Man. The Genealogical Tree of Life. An Elucidation Of The Universal Principle Of Self-Development. The Mode Of Progression.

Having briefly alluded in other chapters to the shortcomings of the cell-souls of plants and animals to account, in a great measure, for the trials and tribulations to which all organic life is subject, these limitations of their functional capacities will be better understood when we consider that each cell has an individuality of its own, and that it can be cognizant under normal conditions only

of its own particular function. Thus the cells of the heart are cognizant only of their own special functions; those of the brain only of theirs; those of the lungs only of theirs and so on to every other part or member of the organism. But since they all co-operate towards a definite end, when one individual set of cells called "organ" fails to perform its proper function, the others must necessarily suffer in consequence, often seriously retarding the development of part of the organic complication.

In illustration of the principle involved, and also to serve as an object-lesson in showing the great analogy that exists between the teleo-mechanics of Nature and those of Art, let us suppose that the mental capacities of the employes of, we will say, a modern watch factory, are of an inferior order, devoid of artificial accomplishments save one. Such advantages, it must be admitted by the way, the minds in Nature are deprived of, or rather, they were never accessible to them. Yet said employes have become quite proficient in certain lines of labor; what knowledge has been imparted to them they comprehend to perfection.

Thus one group of operatives in a certain department has become experts in the making of wheels; another group has learnt to perfection how to turn out pinions; another group has become quite proficient in the making of jewels; another in the making of springs; another set knows just how to make dials, and so on down to all the minor parts of the mechanism. Outside of these there is a special department devoted to assembling the parts together, tho none of the operatives may have the slightest inkling of how to produce them. When the movements are finally completed and handsomely cased (which requires the skill of another group of artisans) we marvel at the superior intelligence of their designers, altho, as stated, their mental faculties may be of an inferior order, and none of them capable of producing one of these works of Art complete—his or her entire labors being limited to their particular line. But this they are, **by virtue of these very** limitations (!) enabled to execute to perfection.

Now to what is the production of the modern "timepiece" of even the most exquisite workmanship reducible in its last analysis? Not to the judgment and experience of its actual makers alone, **but rather to the tens of thousands of skilled mechanics who lived and labored before them** to devise these means for measuring time and

bring them to a state of perfection.

In like manner was Man evolved by the teleo-mechanics of the Organic Kingdom. If we then place the entire credit for his creation upon the biological minds who are or were engaged in the up-building of the modern types of the **genus homo** we would obviously commit the same blunder we would be making if we credited the operatives of a watch-factory wholly with the products of their labor. Even as we have to trace these useful devices back to those who first conceived of the advantage of dividing the time of day into hours, these into minutes, and these into seconds, and divide the honors for the accomplishment of their endeavors with their successors who added their mite to the gradually increasing fund of horological lore, so must we go back to the first evolved Monera for the crude idea that grew and developed with each generation until it culminated in the "**highest achievement**" of the cell-souls.

Yet the creation of Man could have been no more connected with this incipient idea than the thought of a chronometer could have been associated with the invention of the sun-dial or hour-glass. What, then were the ideas which initiated the movements that resulted in the evolution of Man as well as of the horological Art? It was simply the self-conceived idea of the first-evolved Chromacea to improve their own condition in life—a desire which animates all mind. It is the incentive to all effort in the fields of Art—the inalienable attribute of all psychic force of every degree or quality, as a moment's introspection of your own mind will reveal. What is the object of your thoughts—of your consciousness? Self-improvement; the desire to better your condition in life. No other tendency is conceivable; no other object can be entertained; hence that which is the chief attribute of your own mind must be also that of the simplest living cell. A similar idea was expressed by Montague in these words: "The same desires stir mite and elephant alike." But whenever the cell-souls fail therein, malformations or other "ills that flesh is heir to" are the inevitable result.

Now since all cell-souls must be intuitively aware that "in union there is strength," growth in the form of "multiplication by division" suggested itself as the simplest mode of advancing their condition in life. Hence with each addition their physical and mental capacity was increased—the mind-element resident in their atomic constituents merging into a constantly growing fund of

cognitions and ideations which were carefully preserved thru the organs of Procreation specially designed for that purpose in more complex organisms, the simpler ones transmitting them direct to their offspring without such instrumentality. The progress of organic life thus proceeds thru budding or fission with as great facility (or greater), than thru more complex modes of reproduction.

The first spontaneously evolved Monera, then, prompted by the self-same desire we experience to advance and improve our present condition in life, that is, by a simple impulse of self-development which is the dominant characteristic of mind in all its phases, constitute in their totality the root of the genealogical tree of Man, for altho each cell-soul could not have had the slightest conception of what its successor could produce, by each generation adding its own experiences to those of its predecessors, and each one adapting its organism to the lessons derived therefrom, one destinct type or species after another was evolved. This mode of progression continued for countless generations during which multitudes of different conceptions diverged into the branches of the main "trunk" of the tree of Life which was formed by the most practical ideas converging into a general fund which culminated in the organization of the highest type of the Organic Kingdom—Man.

Thus it will be seen that the mind in Nature develops **pari passu** with and thru the animal and vegetal bodies it builds up, it acquiring all its knowledge and capacities by means of its efforts to better its condition, even as the supra-mind of man developed thru its endeavors to build up the various arts and sciences. Hence we may measure the teleo-mechanics of Nature by our own standards.

Carrying these analogies to their legitimate conclusion, it becomes at once apparent that the cell-souls must be as subject to infirmities of various kinds, (which can manifest themselves only in irregularities of morphological structure), as is the supra-consciousness of man.

CHAPTER 47

Haeckel Places The Vermiform Appendix In The Category Of Useless Structures. Its Recently Discovered Twofold Functions. Appendicitis Pathologically Considered. Views Of Recognized Authorities. Its Cause And Symptoms, Prevention And Cure.

As we have seen in chapter 38, Prof. Haeckel states on page 265 that "the vermiform appendix of our caecum

is not only useless, but extremely dangerous, and inflammation of it is responsible for a number of deaths every year."

That the function of any member of an organism is undiscovered, is no valid reason for condemning it as useless, for the time was when the offices of but few were known. But insofar as the purpose for which the appendix was designed is concerned, we are happy to state that its uses have at last been ascertained, as may be seen in the following extracts from a valuable treatise on "**Appendicitis**" which appeared in the October 1906 number of "**Health Culture**" by its editor, Dr. W. R. C. Latson, with whose kind permission I quote:

"As to the function of the appendix, there has been and still is much difference of opinion among anatomists and pathologists. The impression which prevails among the rank and file of the medical profession is that it is a vestigial organ, which, while of some use in the animal, is quite useless to man. So widely is this fallacy believed that I once heard a well-known surgeon make the monstrous statement that the appendix vermiformis was not necessary to life or health and that every child should have its appendix cut out early in life.

"This vulgar error has been quite refuted by results of actual experimentation. Many years ago, while a student at Columbia College, I became fully convinced that the appendix was a secretory organ, the object of which was to pour into the cecal pouch an antiseptic fluid whose bactericidal action should be like that of the bile. ... Quite recently I have found my views confirmed by a high authority. In his epoch-making work, 'The Internal Secretions', Dr. Charles E. de M. Sajous, in discussing the secretions of the intestines and their appendages, makes the following statement:

" 'The functions of the appendix vermiformis therefore appear to be to supply the cecum with bactericidal cells and their productions, i. e., phagocytic leukocytes and alexocytes—in addition to those supplied by the cecal agminated follicles—an antitoxic blood serum.'

"In other words, Dr. Sajous believes, as I was led to believe many years ago, that the appendix secretes a fluid the action of which is to eat up or otherwise antidote poisons formed at this critical point of the cecum.

"In the light of these researches it is apparent that the good Lord did not put the appendix in our bodies merely as a means of providing fees for enterprising surgeons. The appendix, like the salivary and other

glands, was given to us for a purpose. We need it every hour for the peculiar anatomy of the parts, and the fact that man walks with an upright trunk, together with other factors which need not be mentioned here, as the result of these there is likely to be more or less impaction and stoppage of the food-mass at the large pouch."

Thus the appendix operates both in the capacity of a lubricator for assisting in moving the mass that may otherwise lodge in those parts, and as a bactericide to kill all pernicious baccili which might attack the intestines with fatal results.

Verily, is there "no internal purpose in the drama of Life"?—paraphrasing Haeckel on page 265 of his volume. Just think of "purely mechanical agencies" accomplishing what so palpably indicates beneficent design!

Yes, form a picture in your mind, Prof. Haeckel, of these blind and unconscious factors, and then let us know how they went to work to guard against the contingencies that are liable to arise at any moment in that part of our organism.

Yet who can doubt the providential foresight which recognized the need of such an organ at this locality and had the judgment to elaborate one capable of meeting all requirements? If subject to disease thru ignorance, then may all other organs be condemned for the same reason. But is Science not overcoming these objections as fast as thoro and systematic research will permit?

Another evidence of the sound judgment exercised by the subminds in evolving the appendix is stated by Dr. Latson to be that "owing to man's vertical position the mass of matter poured through the cecal valve into the pouch must from that point pass upwards. This means that instead of its being helped by gravitation, as in the horizontal body of animals, it has to be moved in opposition to that force. Hence we have at the cecum a danger-point at which the food mass is apt to get lodged."

The cell-souls upon whom devolved (and still devolves) the care of that part of our system, realizing the dangers to which it was exposed, recognized the necessity for providing for its safety thousands of generations ago, and they did not rest content until the right kind of a device that would fill the want had "dawned upon" them by slow degrees. Little by little their ideas assumed tangible form until they materialized in the present organ which Haeckel considers a useless structure upon which, and similar other "purposeless contrivances" he based his Science of Dysteleology, saying on page 264 that

"These curious teleological hypotheses do not call for serious scientific refutation."

No indeed they do not! They not only could not be refuted, but the attempt to combat them with valid arguments or tentative demonstration has never yet been made! Not only was the organ under consideration evolved in the manner described and for the purposes specified, and that just as consciously and intelligently as any work of Art ever produced by the supra-mind of man, but also every other part of an animal or vegetal organism. Little by little the need of all their members was conceived by their designers, the cell-souls involved in their construction. Step by step, their ideas assumed tangible form, every trifling gain made during each generation in the developing processes being sacredly preserved in the organisms providentially created for that very purpose, the whole fund of cognitions stored away in the **Conscious Memory** of the Procreative cells who transmitted it to their successors with every additional gain, until each part reached its present state of greater or lesser perfection. Yet Haeckel and his followers can see nothing in all these palpable evidences of intelligent design but blind and unconscious mechanicism, physico-chemical reactions, fortuitous concourses of atoms and the "Survival of the Fittest"—their whole conglomeration of nonentities expressed in the above terms being unable to stir a single atom, move a single molecule, or produce a single cell—and they **know it!!** Here the incomprehensible part of their doctrine comes in,—how they can have any faith in it themselves. Just think of their professing to explain the marvels of the Universe with **absolutely nothing! Yes, nothing!** They can make nothing else out of their "processes" and "Survivals." To return to our subject.

Dr. Latson gives as the cause of appendicitis erroneous diet, (usually excessive in quantity), insufficient amounts of fluids in the body, and constipation. Also lowered vital force, worry, overwork, lack of outdoor exercise etc.

Of the symptoms he says: "The first indication of inflammation of the appendix is a feeling of weight and tenderness in the lower right abdomen, accompanied by a dull or sharp pain which gradually extends up along the right side. The pain is increased by lying on the left side and is relieved when the patient rests upon the back with left leg extended and right one drawn up. In addition the abdomen becomes swollen and tender and there

is chills and fever from the start. Constipation, high colored urine, nausea and vomiting are among the symptoms."

To prevent appendicitis (he derides the idea of its being caused by seeds or other little bodies lodging in the appendix) he suggests that "the first consideration is to insure the normal action of the bowels. The person who has one or two full and thoro evacuations daily, will not have appendicitis.

"In order to insure this, it is necessary to eat simple food in moderate quantities. Two meals are better than three, and never 'snack' or lunch between meals. Keep your children from acquiring the habit. Much water, distilled or boiled if not absolutely pure, should be taken, as all the vital processes are performed through the agency of this precious substance. Ten glasses or two quarts of pure water should be drank every day.

"Few people realize the benefits to be derived from mild outdoor exercise which should involve wide, free movements of the entire body, stretching, yawning, full and deep breathing, rolling on the ground and play."

The physiological function of "stretching" is one of the most beneficial of exercises, it having for its object the sending of sluggish vital forces to the viscera where they are needed to stimulate them to action. Yawning fills a similar want in that it incites the cell-souls operating the lungs to fill them with air to their utmost capacity, thereby re-oxygenizing the blood. But while the proper use of all nutritive and cerebral organs is essential to health, all undue excitation of the genital organs should be scrupulously avoided since this is invariably connected with a corresponding expenditure of vital force for which the system receives no equivalent in return. While all other "calls of Nature" should be heeded, these should be ignored and suppressed to the limit of endurance. This means the conservation of your vital energy for purposes of Procreation which will be of benefit to yourself and offspring.

Dr. Latson also cautions against adverse mental states, such as fear, anxiety, worry etc. These depress the vital activities and consequently impair the working capacities of the various organs.

"As to the general treatment," he says, "the first and most important point is to clean out the cecum. This may best be done by repeated colon flushings. The best deviee for this purpose is the long colon tube. The water should be warm or tepid, and the flushing should

be repeated at intervals varying from one to four hours.

"While taking the enema, (injections), the patient should lie upon the back with both legs drawn up toward the body. The flow of water should be so manipulated as to cause it to fill the entire colon (main intestine) and if possible work into the small intestine. This may usually be effected by gently stroking the abdomen up on the left side, then across above the umbilicus (navel), then gently downward toward the point of tenderness. The value of this treatment is beyond all computation as a means of removing the essential cause of the disorder.

"As to diet, the patient should eat little or nothing. During the acute stages it is imperative that no food should be taken. As the disease abates, the patient may be given a glass of milk at long intervals, say every three or four hours. While there is fever, the liver does not act, hence digestion is impossible. Food taken at such times only endangers the patient's condition."

The right medicines are, however, readily assimilated owing to the subminds intuitively recognizing their virtues.

"Throughout the course of the disease," continues the doctor, "water should be taken freely in large quantities. The patient should take not less than three quarts of distilled water during the twenty-four hours. A gallon is easily borne at such a time, and a patient should drink even this quantity during that time if possible."

If distilled water cannot be procured, use boiled water either cooled or drank quite warm to induce perspiration as this will check fever, aid the circulation and assist in removing the cause of the disease. When hot water is drank, smaller quantities are advisable; still, as much as is agreeable to the patient which should, in all cases, be the criterion of the quantities to be used.

"The temperature," says Dr. Latson, "which is apt to run quite high, may be controlled by sponging the entire body with cool water. This can be repeated as frequently as seems necessary in order to keep the temperature near the normal, say once every two hours."

While sponging the body, the attendant should guard against cold drafts. Still, the room should be kept properly ventilated night and day, since pure air is as essential to the restoration, as to the preservation of health. Also, if constipated, keep bowels active with mild laxatives. Constipation is, in the vast majority of cases, one of the first symptoms of some incipient disease (not the primary cause, as is generally supposed), hence should

be treated before serious results ensue. Here is where the good old proverb comes in: "A stitch in time saves nine"—**doctor-bills.**

Dr. Latson also advises "gentle strokings and manipulations over the point of pain and tenderness excepting where in the acute stages this becomes impracticable owing to the extreme sensitiveness of the patient."—When such sensitiveness does not exist, a gentle massaging of the whole abdomen would probably prove very beneficial in inciting the bowels to action.

"The other phase of the local treatment," says the doctor, "is the reduction of the local inflammation which is best effected by the application of the ice-bag which should cover a space of not less than seven inches in diameter and kept on for half an hour at a time with intervals of fifteen minutes between the applications. . . . . Have not found the painting of the skin with tincture of iodine of much service, although the occasional application of hot fomentations between treatments of the ice-bags have been productive of great relief."

In conclusion, the doctor emphasizes the necessity of an abundance of fresh air; room to be light and cheerful; surroundings pleasant and agreeable, and the patient made to realize that the treatment herein outlined is in every way fully sufficient to effect a cure of this last, most terrible 'bug a boo' of later day medicine. . . . At the same time it is no doubt true that where the case is neglected or improperly treated until the appendix and contiguous structures are in a state of suppuration—then there is no doubt that the surgical operation is the only method by which the condition can be met."

CHAPTER 48

Haeckel's Consignment Of The Mammals Of The Male To The Category Of "Useless Structures." Sex-Determinism. How To Control Or Predetermine Sex Of Offspring. Haeckel Sees A "Provident Arrangement" In The Amneon And Serrolemma.

We will now consider Haeckel's consignment of the nipples and mammals of the male to the category of "useless structures"—one of the "significant biological facts" upon which his science of Dysteleology is based. To this "soft impeachment" of the sense or sanity of the subminds responsible for their evolvement I would reply, in the first place, that there are well-authenticated cases on record wherein said "purposive contrivances" (as he

calls all those parts whose utility is known), served as true mammalian glands, that is, secreted the real lacteal fluid for the nourishment of the young. Now, what if the father's capacity for thus serving as a substitute for the mother in emergencies had been the rule instead of an exception? Why should the father not be provided with these useful adjuncts to assist the mother in the performance of these duties, or take her place entirely if need be? We could regard such "significant biological facts" from teleological viewpoints merely as instances in which the subminds' "**heads were exceptionally level**", to use a pointed and very popular phraseology. That only a comparatively few conceived of the same grand idea, shows that they, like ourselves, do not think alike, to which attention has been called several times.

These providential tho exceptional phenomena are in reality also remotely connected with sex-determination which may be briefly outlined as follows: If the virility of the spermatozoan exceeds that of the ovum after their coalescence, the result will be a male offspring, while if the feminine element preponderates in potency over that of the male, a female offspring will be produced.

The operation of this law of Sex-Determinism (to the enunciation of which I claim priority) has its root in the principle that in all cases the weaker will succumb to the stronger, from which the Darwinian law of Natural Selection or the Survival of the Fittest in the Struggles of Life has been formulated. Bearing this in mind it is apparent that when the male element is prepotent in the newly formed stem-cell or cytula, it naturally assumes principal control over the subsequent processes of cell-division or segmentation with the result that all the male characteristics will be fully developed; while whenever the female element is prepotent, the feminine features will "materialize" in the new organism. The predominance of either male or female element over its coadjutor serves as the determinant of the sex of the new individual.

From these premises it is not difficult to understand how in rare cases the males should be provided with true mammals. We have stated that the subminds conceive, think and remember only in images—they not formulating their thoughts like we do. (By "we" I mean our so-called "higher ego," that is, our supramind.) Now if the female element of a male embryo has sufficient energy or potency to transmit an image of the charac-

ters of the mammals to the cell-souls located in the quarter assigned to these organs, said cell-souls will, under the extra stimulus communicated to them, build up true mammals in conformity with the directions received. In other words: the female influence asserts itself in these exceptional cases to a sufficient extent that instead of only fictitious glands being evolved, (for which the dominant male element generously grants permission to the weaker force) the true mammalian organs are reproduced. Under all ordinary conditions the subordinate element is enabled to transmit from its memory only the crude outlines of the lacteal glands to the male organism.

Hermaphrodites are the result of both male and female generative forces being of equal potency in the cell-soul of the cytula, they standing in an equipollent relation to each other, so that neither can assume exclusive control in the up-building of the new organism. This equipoise of both sex-forces being transmitted to and continued in all the somatic or daughter-cells, cannot fail to result in a partial development of the generative organs of both sexes, which, owing to the want of the proper concentration of boths' attention upon one or the other (as occurs in all normal cases) generally remain in an undeveloped state.

Admitting, then, that the prepotency of either the male or the female vito-psychic energies after their blending into one subconsciousness in the impregnated ovum operates as the determinant of the sex of the resultant offspring, it is not difficult to decide how to proceed in producing either male or female progeny. If, for instance, male children are desired, all that is necessary to do before conjugation, is to increase the father's virility to an extent that will be sure to exceed the intended mother's vital forces; while if female children are desired a like course of treatment must be adopted by the mother in order to make her sexually stronger than the male parent. In either case, strict observance must be paid to the general laws of Health, it being also imperative that the one whose sex it is desired to reproduce in the offspring, guard against and abstain from everything that may lead to genital excitation, since all excitement of any kind or nature is invariably connected with a commensurate loss or expenditure of vital energy. In this way a fund of sex-force is gradually accumulated which, if not exceeded by his or her consort, is sure to produce the desired result. "To make assurance doubly sure" it may be advisable to reduce the vitality of the

parent whose sex is **not** desired in the offspring, below that of his or her consort, which may be accomplished in a manner opposite to that suggested above, tho this should be resorted to with great moderation or under the direction of a competent physician.

As stated, the above rules are to be followed in particular for some time (according to the physical condition of the would-be parents) **before** conjugation, for after "conception" the die is cast that will determine sex of offspring and from this decision there can be no appeal, as the failure of the noted Dr. Schenck who treated the Czarina for boys **after** conception, with the result that girls were born, clearly proved. He should have devoted his entire attention to the **father,** (no matter what the treatment would be,) as a grain of common sense would have dictated.

In glaring contrast with Haeckel's Dysteleology is the following passage on page 66: "All Vertebrates of the three higher classes—reptiles, birds and mammals, are distinguished from the lower classes by the possession of certain foetal membranes, the Amneon and Serrolemma. The embryo is enclosed in these membranes which are full of water, and it is thus protected from injury or shock. This **providential arrangement** probably arose during the Permian period when the oldest reptiles, the Pro-reptilia, the common ancestor of all the Amniotes, (animals provided with an amnion), adapted themselves to a life on land."

But **how** they adapted themselves to these new conditions, and **what** first suggested the need for the aforesaid "providential arrangements," the learned author of **World Riddles** offers no explanation for. He simply stated in so many different words that since the females who lived on the land were more liable to shocks than those who lived in the water certain contrivances had to be devised and constructed for, to protect their tender unborn young against injury. Could the "telic idea," i. e. that all the orderly and purposive arrangements of organic structure are the result of intelligent design, be more clearly expressed and more emphatically endorsed?

How would Haeckel explain all these providential co-ordinations from purely physical or mechanical premises? The attempt has never yet been made by any one owing to its apparent futility. Could "blind Nature" or the nonentity "Natural Selection" have been cognizant of what modifications of morphological

structure were essential to adapt the descendants of the Pro-reptilia to a life on land, or could that which exists only as abstract concepts in learned men's brains have possessed the qualifications to devise these "**providential arrangements?**"

PART VI

PROVIDENCE IN PROCREATION

ITS ETHICAL AND TELEOLOGICAL SIGNIFICANCE

CHAPTER 49

Supernormal Prescience Manifested in Reproduction. The Inadequacy Of Natural Selection To Account For These Phenomena. The Survival Of The Fittest Only Tears Down But Never Builds Up. Can An Abstract Concept Account For Mentation, Nutrition And Procreation?

From a superficial retrospect of the preceding chapters we may have deduced that while the teleo-mechanics of the organic world, i. e., the cell-souls of plants and animals, are inferior in their reasoning faculties to cultivated intellects, yet in their **combined constructive** capacities they immeasurably transcend the highest ingenuity of man. There is one feature in particular which so greatly surpasses our own supra-conscious faculties that it fairly approximates our conceptions of a divine potentiality. I refer to the submental power of **Procreation,** and to this we will now turn our attention.

Organic life consists of, and is maintained by, three principal functions, namely, nutrition, mentation and reproduction. Of these three, only the two first are of any benefit to the organism. Heart, lungs, liver, stomach, brain, etc., were specially designed and constructed for the purpose of building up a complex structure and thereby exalting the immanent mind-forces, as we have seen. They are, therefore, indispensable to its preservation for whatever tenure of life may have been assigned to it. On the other hand, the functions of reproduction are not only absolutely useless to the individual, but even detrimental from pathological viewpoints.

Yet note the anomaly: they are despite their disadvantage to the individual, of such supreme importance to the **race** (of high or low degree) as to totally eclipse in importance and significance the two first mentioned faculties, since without the power of Procreation no complex organic life with its high forms of conscious intelligence would ever have been evolved. Hence the princi-

ple of Reproduction must be regarded as the means thru which the mind in Nature effected the Evolution of Man.

Thus while the nutritive and the cerebral faculties were designed only for the exclusive benefit of each individual, the procreative functions were devised for the object of elevating conscious life to the highest possible planes of perfection.

Do you, dear reader, comprehend the full significance of these distinctions? First consider that organic life is sustained thru the exercise of the two former functions for a limited time only, and then, that from some motive, entirely different in its nature and relations, tho with the same beneficent design, provision is made to guard against its eventual extinction. Would such provision be made if the limitations of individual organic life were not fully realized by some form or forms of intelligence cognizant of them? Can we fail to recognize a **Supernormal Prescience** in these remarkable biological phenomena or coincidences—a Prevision and Forethought which is fully aware of the evanescence of organic life, and realizes just what means are essential to its perpetuation?! Do these facts not point with almost absolute certainty to teleological factors in or above Nature fully adequate to cope with these sublime problems of life?

Now what has Materialism to offer in explanation of these three potentialities of organic life: nutrition, intellection and reproduction? It has given us the nonentity "**Natural Selection**", a principle defined by Herbert Spencer as the "Survival of the Fittest in the Struggles of Life"! What is the nature of this principle? It is a principle which is based upon all that is evil in Nature; it is a principle bent upon the destruction of the weaker that the stronger might survive; it is a principle which only tears down, but never builds up; it is a principle which antagonizes all the good there is in Nature, which cares for nothing but self, self, self; a principle which is as remote from providing for the wants of man or beast or plant as a hyena is from providing nourishment for its quarry; a principle as foreign to the **idea of Procreation** as our conceptions of hell are opposed to our ideas of Heaven!

CHAPTER 50

Haeckel Sees Supernatural Causation In Reproduction. Henry Drummond's Views Of Procreation. His Critique Of Haeckel's Position. God Is Love.

That the author of World-Riddles held at one time diametrically opposite views than the ones entertained by him at present, may be seen from an extract quoted by Henry Drummond in his work on **The Ascent Of Man***. After showing that "Nature had to imbed Love in the most ancient past, so organizing and endowing protoplasm that life could not go on without it, and compelling its continuous activity by the sternest physiological necessity", Drummond says in next paragraph:

"Even Haeckel, in contrasting the tiny rootlet of sex-attraction of two microscopic cells with the mighty after-efflorescence of Love in the history of mankind, is staggered at the audacity of the thought, and pauses in the heart of a profound scientific investigation to reflect upon it. After a panegyric in which he says: 'We glorify Love as the source of the most splendid creations of art; of the noblest productions of poetry, of plastic art and of music; we reverence in it the most powerful factor in human civilization, the basis of family life and of the state,' he adds, 'So wonderful is love and so immeasurably important is its influence on mental life, that on this point, more than in any other, supernatural causation seems to mock every natural explanation' . . . Haeckel has spoken, and rightly, from the standpoint of humanity; yet he continues, and with equal right, from the standpoint of the naturalist: 'Notwithstanding all this', he says, 'the comparative history of evolution leads us back very clearly to the oldest and simplest source of love, to the elective affinity of two differing sex-cells.' "◆

Elective or **selective,** either term carries with it the implication of choice, of judgment, of will and memory, which combination constitutes the psychic affinity of two germinal cellules, male and female, their combination resulting in a determination to propagate their species, or, as Drummond very forcibly expressed it: "compelling its continuance by the sternest physiological necessity;" a determination of the up-builders of organic life which manifests itself in what we call "sexual affinity."

* James Pott & Co., New York, p. 223.

◆ Evolution Of Man, Vol. II p. 394.

Note. In quoting rather extensively in the following pages from Henry Drummond's copyrighted work on "The Ascent Of Man", (for which the kind permission of its publishers, James Pott & Co., New York, was obtained) my only excuse is to be found in the felicitous way in which its author has elaborated and presented subjects that appear specially adapted to illustrate the principles herein elucidated.

Commenting on Haeckel's version of these principles, Drummond says: "It is not in Haeckel's elective affinity of differing sex-cells that we must seek the physical basis of Love or Altruism. That may be the physical basis of a passion which is frequently miscalled Love; but Love itself, in its true sense of Self-sacrifice, Love with all its beautiful elements of sympathy, tenderness, pity and compassion has come down a wholly different line. It is well to be clear about this, for the function of Reproduction suggests to the biological mind a view of this factor which would limit its action to a sphere which in reality forms but the merest segment of the whole. The Struggle for the Life of Others (i. e., the principle of Procreation) has certainly connected with it sex-relations . . . but so far from its chief manifestation being within the sphere of sex, it is in the care and nurture of the young, in the provision everywhere made throughout Nature for the seed and the egg, in the endless self-sacrifice of Maternity that Altruism finds its main expression." (p. p. 224-225.)

From which it would appear that the teleo-mechanics of Nature are altruistic in character, a disposition which manifests itself in the phenomena everywhere apparent thruout the entire Cosmos in the form of psychic attraction, affinity, endosmosis, etc., which are but the crude, outward expressions of the fundamental force we call in its most exalted state, **Love.** To the love or affinity of the constituents of so-called matter all these phenomena of gravitation, that is, of a "**drawing**" towards each other, are traceable and due. Love holds all material bodies of the Universe together. **God is Love,** even as Love personified is **God.**

CHAPTER 51

Love The Supreme Factor of Evolution. Crude Conceptions Materialize, In The Course of Generations, Into The Distinct "Characters" Of Plants And Animals.

In the facts of Procreation the Teleo-Mechanics of Nature have found one of their most potent agents in diversifying organic structure and determining their respective "characters" or distinguishing features. No other processes are, indeed, conceivable thru which the progression from simple to complex forms of organic life could have been effected. Speaking of Love, the impellent in the processes of Evolution, Henry Drummond says on page 217: "As the story of Evolution is usually told, Love, the evolved form of the Struggle for the Life of Others, has not even a place. Almost the whole emphasis of Science has fallen on the opposite—the animal Struggle for Life. . . . No words can be thrown away if they serve to restore to honor what is in reality the Supreme Factor in the Evolution of the world."

Even as a highly complex work of Art had its inception in an extremely simple idea, so was the conception of the idea of reproduction, (and of all other organs, members and functions as well) primarily of the crudest character. Yet it was adequate to start the development of what has now attained its highest perfection in the human Procreative systems. In both domains of Nature and Art, thru the exercise and cultivation of mind, loftier ideals are constantly reached—all forms of intelligence developing **pari passu** with and thru what they accomplish or build up.

"Taken prophetically," says Drummond on page 222, "the function of Reproduction is as much greater than the function of Nutrition, as the Man is greater than the Animal, as the Soul is higher than the Body, as Love is stronger than Hate. If it were ever charged against Nature that she was wholly selfish, here is the refutation at the very start. And if the morality of Nature is impugned on the ground of the universal Struggle for Life, it is, at least, as relevant to refute the charge by putting moral content (or intent) into the universal struggle for Species. . . . Almost the whole self-seeking side of things has come down the line of the individual Struggle of Life; almost the whole unselfish side of things is rooted in the Struggle to preserve the Life of Others."

In thus striving to provide for future generations after the existing ones had passed away, the teleo-me-

chanics of Nature have revealed a beneficence far transcending that of man. Yet the former was also of inconceivably slow development, and in view of the great diversity in kind, quality and degree between their minds and ours, the analogy is again complete. Thus the mental caliber of a Spencer, Goethe or Whitman transcends that of a Hottentot even as the sum-total of the intelligences which designed and constructed the genital organs of the highest Mammals surpassed that of the Monera who, during their first appearance of organic life on Earth, conceived the idea of perpetuating their own life by a process of self-division, or rather, of multiplication by division, upon which mode their descendants improved until the various forms of Procreation now in vogue among the different orders of organic life were produced.

In like manner were the simplest and most natural (i. e. unavoidable) ideations relating to the advantages of nutrition and cerebration conceived by our earliest evolved Protozoan primogenitors, which conceptions were the initiatory steps towards the formation of the essential organs of greater or lesser physiological value which now distinguish the innumerable branches of the Organic Kingdom. The persistence with which these crude ideas were elaborated by the simpler forms of organic life during countless generations culminated in their "materializing" into the various functions of vegetal and animal life. All parts and members are thus the result of the cell-souls realizing the advantage they would be to themselves in their struggles for existence.

CHAPTER 52

The Moral Element Of Reproduction. The Provision Plant-Cells Make For Their Progeny. Self-Sacrifice In Flowering Plants. The Marvelous Accomplishments (?) Of The Materialist's Nonentities: Nature And Evolution.

In exemplification of the principles underlying the phenomena of Procreation, Henry Drummond says on page 227: "Pass from the unicellular plant to one of the higher Phanerogams—the flowering plants, and the self-sacrificing function is seen at work with still greater definiteness. To the physiologist a tree is not simply a tree, but a complicated piece of apparatus for discharging, in the first place, the function of Nutrition. Root,

trunk, branch, twig, leaf, are so many organs—mouths, lungs, circulatory system—for carrying on to the utmost perfection the Struggle for Life. But this is not all. There is another piece of apparatus of a wholly different order. It has nothing to do with Nutrition. Nothing to do with the Struggle for Self. The more its parts are studied it becomes more clear that this is a construction of a unique and wonderful character. So important has this extra apparatus seemed to science that it has named the great division of the vegetable kingdom to which this and all higher plants belong, the **Phanerogams,** and given them the place of honor at the top of the vegetable creation.

"Watch this flower at work and behold a miracle. Instead of struggling for life, it lays down its life! After clothing itself with a beauty which is itself the minister of unselfishness, it droops, it wastes, it dies. . . . But search among the withered petals, and there, in a cradle of cunning workmanship, are a hidden progeny of clustering seeds—the gift to the future which the dying mother has brought into the world at the cost of leaving it. The food she might have lived upon is given to her children, stored around each tiny embryo with lavish care so that when they waken into the world, the first helplessness of their hunger is met. All the arrangements in plant-life which concern the flower, the fruit and the seed are the Creations of the Struggle for the Life of Others."

How barren of results is "the Survival of the Fittest in the Struggles for Life"—the sole Darwinian interpretation of the facts and phenomena of Evolution—when compared with the glorious fruition of Nature's teleo-mechanics to build up organic life thru Love which culminated, first, in the harmonious adaptations of the Organic Kingdom, and last, in all that is good, grand and noble in man, and in which successful endeavors beneficent design is as clearly revealed as in the provision parents make for the welfare of their children.

"With endless variations in detail," continues Drummond, "these are the closing acts in the Struggles for the Life of Others in the vegetable world. We have illustrated the point from plants because this is the lowest region where biological processes can be seen in action, and it is essential to establish beyond dispute the fundamental nature of the reproductive function. From this level onward it might be possible to trace its influence throughout the whole range of the animal kingdom until

it culminates in its most consummate expression—a human mother." (p. 229.)

The lowest penetrated region is that of the Micro-organisms wherein we see substantially the same biological processes pertaining to the reproductive functions as are those which characterize the higher orders. After tracing these processes from the very Portals of the Organic Kingdom, it was found that the archetype of these functions runs thru and is maintained in all its branches, and what but **Conscious Memory** could preserve this or any other feature from one generation to another?

Viewed from the materialist's stand-points—great headway would "blind mechanical agencies" have made in producing among the withered petals of a flower a cradle of cunning workmanship wherein lies imbedded a living progeny of clustering seeds, the gift to future generations a dying mother has brought into the world at the cost of leaving it!

Great success "exclusively physical processes" would have had in constructing the exquisite beauty called a yellow primrose and endowing it with the ability of providing for the maintenance of its species by packing into a delicate casket specially provided for this purpose a number of objects upon which are mentally impressed the entire physical and mental characters of their genitors which memories only await their time and opportunity to unfold in all their native glory!

Great progress would the nonentity "Evolution" have made in effecting the changes in fecundated ova which are so purposive in their nature as to be comparable only to those of a "hidden artist who as with his plans before him strives with skilled manipulation to perfect his work"!

Great ingenuity "physico-chemical reactions" displayed in assembling mindless matter and insensate force into the wondrous structures of the universe!

Marvelous perspicuity and prescience the nondescript "Nature" manifests in recognizing the limitations of individual organic life and providing for its perpetuation thru the wonderfully complex means of Reproduction!

CHAPTER 53

A Panegyric On The Sublimity Of Love. Submentally Inspired Eloquence. Teleo-Mechanics Strive To Reach Higher Planes Of Existence.

After having shown that the fountain-head of the Procreative functions is to be found in the Vegetable Kingdom, Henry Drummond continues in the following inspired strain on page 230:

"Consider what the world owes today to the **Struggle** for the **Life** of **Others** in the world of plants. This is the humblest sphere in which Procreation can offer any gifts at all, yet these are already of such magnitude that without them the higher world would not only be inexpressibly the poorer, but could not continue to exist. All the arrangements in plant life which concern the flower are the creations of the principle of the Struggle for the Life of Others. For Reproduction alone the flower is created. This miracle of beauty is a miracle of Love. Its splendor of color, its variegations, its symmetry, its perfume, its honey, its very texture, are all notes of Love—Love-calls or love-lures or love-provisions for the insect-world whose aid is needed to carry the pollen from anther to stigma, and perfect the development of its young. The flower, botanically, is the herald of the Fruit. The Fruit, botanically, is the cradle of the Seed. What are these fruits and these grains and these seeds? Stores of starch or albumen which, in the perfect forethought of Reproduction, plants bequeath to their offspring. (An exquisite, tho vague and undefined allusion to the Prescience and Beneficence of their biological minds. H. W.) The foods of the world are the foods of the children of plants, the foods which unselfish activities store round the cradles of the helpless, so that when the sun wakens them to their new world, they may not want. Every plant in the world lives for Others. It sets aside something, something costly and cared for—the highest expression of its nature."

Tho this something cared for is the fruit itself which decays ere the seed can germinate, yet it furnishes in that state the very elements best adapted to the seed's requirements. But marauders like men, beasts and birds, fatten and flourish on the foods the subminds of plants have prepared for their prospective young, appropriating them ruthlessly to their own individual use, regardless of the havoc they create with the cell-souls of the seeds they thus destroy. In anticipation of which apprehended calamities, some subminds have surrounded their

germs with an almost impenetrable crust to serve as a protective shield; others render them unpalatable or poisonous for the same purpose, while others again, less provident, leave their seeds exposed to every danger that may lurk about.

Continuing, Henry Drummond says: "The seed is the tithe of Love, the tithe which Nature renders to Man. When Man lives upon Seeds, he lives upon Love. Literally, scientifically, Love is Life. If the Struggle for Life has made Man, braced and disciplined him, it is the Struggle for Love that sustains him. Pass from the foods of Man to drinks, and the gifts of Reproduction all but exhaust the list. The first and universal food of the world is milk, a product of Reproduction. All malted liquors are made from the embryos of plants. All distilled spirits are products of Reproduction. This may be mere coincidence, but a coincidence which involves both food and drink is worth noting. The factor of Reproduction is thus seen to be fundamental.

"To interpret the course of Evolution without this factor, would be to leave the richest side of material Nature without an explanation. Retrace the ground even thus hastily travelled over, and see how full Creation is of meaning, of anticipation, of good for Man, and how far back begins the undertone of Love. Remember that nearly all the beauty of the world is Love-beauty—the corolla of the flower and the plume of the grass, the lamp of the fire-fly, the plumage of the bird, the horn of the stag, the face of a woman; that nearly all the music of the natural world is Love-music—the song of the nightingale, the call of the mammal, the chorus of the insect, the serenade of the lover; that nearly all the foods of the world are Love-foods—the date and the raisin, the banana and the bread-fruit, the locust and the honey, the eggs, the grains, the seeds; that all the drinks of the world are Love-drinks—the juices of the sprouting grain and hop, the milk from the udder of the cow, the wine from the Love-cup of the vine. Remember that the family, the Crown of all higher Life, is the Creation of Love; that Co-operation, which means power, which means wealth, which means leisure, which therefore means Art and Culture, Recreation and Education, is the Gift of Love. Remember not only all these things, but also the diffusions of feelings which accompany them; the elevations, the ideals, the happiness, the goodness, and the faith in more goodness to come, and then ask if it is not a world of Love in which we live."

And this universal Love has its root in the general tendency of the teleo-mechanics of Nature to reach higher planes of existence—realize higher ideals of Life which is Love even as Love is Life. In thus "**making for righteousness**", as Matthew Arnold expressed the same idea, they initiated the processes of Evolution, fostered and propitiated them until they culminated in the Creation of Man.

CHAPTER 54

The Solicitude Manifested By The Subminds For Offspring. Store Nutritive Substances Around Their Prospective Young. Marvels Of Ingenuity For Propagating Their Species. The Subminds "Time" Parturition and Lactation With Chronological Precision.

Procreation dwells in anticipation and glories in Providence. Hence the foods and the drinks the subminds of plants store up in them; hence the bewitching colors and the enticing odors with which they lure the insect-world to serve as carriers for the fertilizing pollen; hence the charm and grace of a woman's face and the stateliness of her consort's frame; hence the provision made in anticipation of her approaching maternity and for the needs of her offspring—all "timed" with chronological precision. Pre-ordination and adaptation in all cosmic events, even so-called "death" being but a precursor to the genesis of new life. No Prescience, no purpose, no judgment, no beneficence in all these things? Yet Materialism claims that in its "purely physical processes, blind mechanical agencies and physico-chemical reactions" the key to the solution of these mysteries has been found!

But Henry Drummond's suggestive and felicitous reference to "the stores of starch and albumen which plants in the perfect forethought of reproduction bequeath to their offspring" deserves further analysis.

Plants, as the world knows them, can "bequeath" nothing in the general acceptation of this term. They are not credited with forethought, nor with the capacity to make provision for the future, **yet they do these very things!** What, then, is the inevitable inference? Simply that they do possess the very attributes and potencies which we, in our ignorance of their true nature, deny them; that they **are** endowed with physical and mental faculties commensurate with what they are able to ac-

complish and build up. To these capacities, then, may all the various phenomena of plant-life (and of animal-life as well) be traced. Whatever manifests purpose in its movements or activities, even tho it be but a defaced crystal which restores its symmetry before it proceeds with its normal growth, must be endowed with the judgment and potency essential to execute the desired end. These activities are the criteria by which we determine the consciousness and mental caliber of animals, and why should they not be as applicable in determining that of the lowest orders of life?

Even Haeckel concedes sensation and will to their atomic constituents, tho he denies them the essential basis of all psychic states, namely, **consciousness,** thus tearing down with one hand what he had built up with the other, for mind without consciousness is no mind at all. It is Materialism in disguise, tho we will admit, a step in advance of ultra Automatism.

All beings, from moner to man, to whom sensation, perception and will or other psychic states are conceded, must be **aware** of what they perceive and will, and this awareness is consciousness.

From the foregoing premises we cannot fail to recognize certain forms of Prescience in the so-called "instincts" (subminds) of plants in providing means for guarding against the extinction of their race; that they anticipated the eventual dissolution of their organisms or the disintegration of the "houses they live in" and resorted to various expedients to insure the perpetuation of their kind; that they exercise judgment in storing nutritive substances around their embryos called "seeds" that they may not want when entering upon their life's work and career of development. Nor can we fail to admire the self-sacrificing disposition of the mother-plant (or of her subconsciousness, rather,) in thus turning over for the exclusive use of her prospective offspring a portion of her own means of support which would otherwise have prolonged her own existence.

Now what **hindered** her from appropriating the nutrition she drew from soil and air and water and using it for her individual benefit? If "dumb Nature" had had its way, not a particle of these means of subsistence would have been set aside for others—all would have been utilized to build up her own stem and limb and branch and foliage. What, then, would have remained with which to build up the reproductive organs? Who or what would have furnished the stores of starch and albumen

reserved for the special use of her prospective young? No forethought, no love, no solicitude, no **intelligence** in these facts and phenomena of plant life? Nothing but "physico-chemical reactions"?

Some force unrecognized by Science, yet evidently of a vito-psychic nature, must have actuated the parent plant from withdrawing a certain proportion of the elements derived from her environs and manufacturing them by a metabolic process known only to herself into food specially adapted for her offspring. This force, it need hardly be said, is identical with that which provides nourishment for the progeny of the highest orders of life —akin to the human mother's love for her child; it is the same force (in essence) which provides for the infant's means of subsistence. Who can fail to marvel at the prescience manifested by the cell-souls of plants in providing for the wants of those who are still reposing in the "Womb of Time" by making timely preparations for their arrival? Who can fail to admire the skill of the teleo-mechanics of Nature (the cell-souls) in constructing various kinds of devices of exquisite workmanship designed to insure the safety and welfare of the coming generation? For it is not the germs alone that are miracles of Love and Forethought, and marvels of ingenuity in compressing within such minute spaces the very quintessence of her being, the entire cognitions of her physical and mental idiosyncrasies, the very potentialities of her "soul"! For note in connection with these wonderful achievements the following complication of intricate mechanisms—of "purposive contrivances," as Haeckel correctly terms the various parts of organic structure—which are specially designed to call these embryos into active life and send them on their mission of Procreation upon which all organic life depends.

CHAPTER 55

Co-Operation Among The Subminds Of Plants. The Supreme Labor Of Their Life. Spreading Banquets Of Nectar And Honey For The Insect-World.

Under the heading: "Co-operation In Nature," Henry Drummond says on pages 232-235:

"For illustrations of the principle in general we may begin with the very dawn of life. Every life at first was a single cell. Co-operation was unknown. Each cell was self-contained and self-sufficient and as new cells budded from the parent they moved away and set up

life for themselves. . . . But soon we find the co-operative principle beginning its mysterious integrating work. Two, four, eight, ten cells club together and form a small mat, or ribbon—the humblest forms of corporate plant-life—in which each individual cell divides the responsibilities and the gains of living with the rest—a veritable commune. The colony succeeds; grows larger; its co-operations become more varied. Division of labor in new directions arises for the common good; leaves are organized for nutrition and special cells for reproduction. All the organs increase in specialization (each part assuming a special function); and the time arrives when from cryptogams the plant-world bursts into flowers."

In the above paragraph Mr. Drummond presents both the Phylogeny (Evolution) of a flowering plant, and its Ontogeny, or history of its individual life. From the concluding sentence it appears, however, that Mr. D. had the whole Phylogeny of the flowering plants in view.

"A flower," he says, "is organized for co-operation. It is a commune, a most complex social system. Sepal, anther, petal, stamen, each has its separate role in the economy, each is necessary to the life of the other and to the life of the species as a whole. To attract the insect with its fertilizing pollen and recompense it for its trouble, a banquet of honey is spread in the heart of the flower, and to enable the visitor to find the nectar, the leaves of the flower are made showy or conspicuous beyond all other leaves. To meet those insects which love the dusk, many flowers are colored white; for those which move about at night and cannot see at all, the night-flowers load the darkness with their sweet perfume. The loveliness, the variegations of shade and tint, the ornamentations, the scents, the shapes of flowers are all the gifts of co-operation. The flower in every detail, in fact, is a monument to the co-operative Principle."

And note this marvel of mechanical ingenuity described on page 228 and 229: "No one, though science is supposed to rob all the poetry from Nature, reverences a flower like the biologist. He sees in its bloom the blush of the young mother; in its fading, the eternal sacrifice of Maternity. A yellow primrose is not to him a yellow primrose. It is an exquisite and complex structure added to the plant for the purpose of producing other primrose plants. At the base of the flower, packed in a delicate casket of exquisite workmanship, lie a number of small white objects, no larger than butterflies' eggs. These are the eggs of the primrose. Into this casket, by a

secret opening, filmy tubes from the pollen grains—now enticed from their hiding place on the stamens and clustered on the stigma—enter and pour their fertilizing fovilla through a microscopic gateway which opens in the wall of the egg and leads to its inmost heart. Mysterious changes then proceed. The embryo of a future primrose is born. Covered with many protective coats, it becomes a seed. The original casket swells, hardens, and is transformed into a rounded capsule opening by valves or a deftly constructed hinge. One day this capsule, crowded with seeds, breaks open and completes the cycle of reproduction by dispersing them over the ground. There, by and bye, they will burst their enveloping coats, protrude their tiny radicles, and repeat their parents' sacrificial life."

One would suppose that these and similar observed facts would convince even the most skeptical of the existence of certain forms of mind in Nature analogous to our own, but such is not the case. The materialistic dictum "no brain, no mind" bars the acceptance of what would have been, without this great obstacle to the advancement of modern science, recognized as a self-evident truth long ere this. What seems incomprehensible is that this ancient fallacy should still find adherents after the microscope revealed the truly marvelous emotional and intelligent activities of utterly structureless beings, simple cells in which not a trace of a differentiated or localized cerebral organ resembling a nerve-center can be found. Yet Professor Haeckel considers, in spite of these manifestations of intelligence, "a centralized nerve-system the essential condition of consciousness!"* And this in face of the fact that, as M. Alfred Binet, the eminent member of the French Academy of Science has expressed it, the micro-organisms exhibit the majority of the emotions characteristic of the higher mammalia. Conceive of emotions devoid of consciousness, if you can. This faculty and their constructive ability recognized by biologists, furnishes the evidence for regarding all living cells as the actual and intelligent up-builders of every form of organic life.

* World Riddles, p. 175.

CHAPTER 56

The Materialist's Bald Assumptions. His Whole Category Of Nonentities Unable to Stir A Single Atom, Molecule or Cell. The Male and Female Element of Plants.

It is a significant fact that all plant- and animal-life can be properly defined only in terms of mind. Notice that in every act and movement of plant-life described in preceding chapters a distinct purpose is clearly implied. Any attempt to explain such activities from purely mechanical premises would prove a dismal failure. Materialists rest content in offering such "bald assumptions" like the following quoted from page 263 of **World Riddles** in lieu of explanations of these phenomena:

"The theory of Selection solved the great problem that had mastered Mueller—the question of the origin of orderly arrangements from purely mechanical causes."

How the nonentities called "Natural Selection", "Evolution", "Mechanicism" or other "purely mechanical causes" can arrange matter into the wondrous structures of the Organic Kingdom, is a question which neither Haeckel nor any other champion of Monism has ever attempted to answer. All the abstract concepts conceived in learned men's brains are unable to stir a single atom, molecule or cell. Well has Prof. John Tyndall defined such concepts as "products of the scientific use of the imagination." He was a sincere truthseeker, however strongly imbued with Materialism he may have been. How can men's ideas affect the processes of Nature?

That the "orderly arrangements of purposive contrivances in Nature" (paraphrasing Haeckel's definition of organic structure) should require less intelligence to produce than the simplest artificial device, is one of the innumerable pitfalls into which ignorance and speculation has led the human mind.

Haeckel's above quoted proposition that Natural Selection or the principle of the Survival of the Fittest in the Struggles of Life "mastered the problem of the origin of orderly arrangements", was analyzed in last part of chapter 35. Returning to Drummond's forcible presentation of the co-operative elements of plants, we find this on page 234:

"With a novelty and audacity unique in organic Nature, the higher flowering plants, stimulated by Co-operation, opened communication with two apparently

forever unrelated worlds (i. e. atmospheric currents and the insect-world, H. W.) and established alliances with them which secured from the subjects of these distant states, perpetual and vital service. The history of these relations forms the most entrancing chapter in botanical science in that they are directly connected with the Reproductive Struggle. For it is not for food that the plant-world voyages into foreign spheres, but to perfect the supreme labor of its life—the **Struggle** for the **Life** of **Others.**"

While in the Procreative system of the higher Mammals the Co-operative principle has attained its most pronounced form, it is also operative in lesser degrees in all departments of Nature, from the concourses of atoms resulting in the bodies we call "matter", up to the revolutions of worlds within infinite space, since in the co-operation of their respective elements, as they enter into communication thru the instrumentality of the ether, lies the potency of organic evolution. Co-operation everywhere, but note, that **the term carries with it an implication of purposive design!**

In next paragraph Mr. D. comes to the point in these words: "The vegetable world is a world of still life. No plant has the power to help itself at the most critical moment of its life—the fertilization of its stigma. It is through this very helplessness that these new Co-operations are brought forth. The fertilizing pollen grows on one part of the flower, and the stigma which is to receive it, on another part, or it may be on a different (or male) plant. But as the male and female parts cannot move towards, or approach each other, the (subminds of the) flower calls in the aid of moving things. The butterfly and the bee, unconscious of their vicarious service as they flit from flower to flower, or the wind as it blows across the fields, carry the fertilizing pollen to the waiting stigma and complete that act of fecundation without which in a generation the species would become extinct.

"Now note the Co-operation among flowers themselves to attract the attention of the insect world. Many flowers are so small and inconspicuous that insects might not condescend to notice them. But Altruism (i. e., the subconscious minds, H. W.) is always inventive. Instead of dispersing their tiny florets over the plant, these club together at single points so that by their multitude an imposing show is made. Each of the associating flower preserves its individuality and continues to grow

on its own stalk. But in still more ingenious species the partners to a floral advertisement sacrifice their separate stems and cluster close together on a common head. The thistle, for example, is not one flower, but a colony of flowers, each complete in all its parts, but all gaining the advantage of conspicuousness by crowding close together. In the Sunflowers the sacrifice of certain parts to the needs of Reproduction is carried still further.

"But a more difficult problem awaits them in the dispersal of their seeds. If each and every seed fell where it grew, the species would soon be at an end.

"But (the teleo-mechanics of) Nature, working on the principle of Co-operation, is once more redundant in her provisions. By a series of new alliances the offspring are given a start on distant and unoccupied ground; and so perfect are the arrangements in this department of the **Struggle** for the **Life** of **Others** that single plants, immovably rooted in the soil, are yet able to distribute their children over the world. By a hundred devices the fruits and seeds when ripe are entrusted to outside hands. Provided with wing or parachute and launched upon the wind, or attached by cunning contrivances to bird and beast, or dropped into stream and lake and ocean-current, they are transported over the Earth."

The full significance of these ingenious modes conceived of by the cell-souls of plants to perpetuate and disseminate their species will be realized when we consider that not alone their own existence, but also that of the entire Animal Kingdom depends upon them, hence we may recognize therein some ultimate design.

CHAPTER 57

Popular Phrases About Nature And Their Significance. Materialism Struggling Against Truths That Will Not "Down." The Mechanicisms Of Nature Require A Mechanician (Or Mechanics) The Same As The Works Of Art.

Referring to the self-sacrificing disposition of mother-plants to set aside for the use of their progeny a certain proportion of the nutriment which would build up their own bodies, Henry Drummond says on page 222: "If it were ever charged against Nature that she was wholly selfish, here is the refutation at the very start."

Very true, yet if no conscious forethought, no maternal solicitude for her creations, and no judgment commensurate with the magnitude of the problems involved

were conceded to "Nature," would the following expressions not be utterly meaningless phrases:

Nature has made provision for this or that object; in this she is selfish and in that unselfish; Reproduction in Nature means self-sacrifice; the audacity of Nature is remarkable in some things; a plant or an animal is constructed by Nature for the co-operation of all its parts; her purpose in this, that or the other proceeding is apparent; to attract pollen-bearing insects "Nature" makes an imposing show; Nature recognizes Co-operation as sound in principle and avails herself of its advantages; the blessings of Nature fall upon all those plants and animals who utilize this principle; she is redundant in her gifts and liberal in her provisions; by various ingenious devices she gives seeds a start on unoccupied ground; in various ways she entrusts them to outside hands to transport them over the Earth; a more difficult problem awaits her in the Evolution of the human Family, etc. etc.

While the above expressions are quite in line with the position taken by Henry Drummond and other theistical writers, they are quite incompatible with those who ascribe every phenomenon to purely physical processes, blind mechanical agencies and other "products of the scientific use of the imagination," as Prof. John Tyndall called the various nonentities Materialism is based on. Yet the fact that the few surviving relics of this fast expiring "cause" constantly refer to Nature in same or similar terms of mind, shows that they intuitively recognize her true attributes. Truth will assert itself, no matter how they squirm and struggle against it!

To contend that mindless matter or blind force can achieve what requires an awareness of the object to be attained, as well as judgment commensurate with its execution, is on a parity with claiming that a dead architect can design a million dollar palace, or that a promiscuous pile of mineral can arrange itself into a locomotive, sewing-machine or printing press.

Such phrases as the ones just cited, when employed by Materialists in defense of their position, affirm what they are expected or intended to deny. They are literal acknowledgments of Nature's conscious attributes, and but for the still prevalent fallacy that centralized cerebral organs are the essential condition of conscious mentation (which fallacy the revelations of the microscope should have dispelled long ere this) such phrases would have been accepted in their true significance by Monists themselves.

Substituting the term "subminds" for "Nature" we will say: If the subminds of plants and animals were wholly selfish, they would reserve nothing of what they assimilate, for the use of offspring—they would turn every particle of nutriment they acquire into material with which to build up or maintain the "houses they live in." What then? There would soon be no plants, consequently no animals, consequently no men or women, no children, no Evolution—nothing but lifeless planets gyrating in space. See, then, on what a little matter the whole organic world depends!

Having its source in the altruistic element of the Primal Mind-Energy, organic life owes its very exaltation to its innate beneficent tendency to struggle for the life of others, as Drummond has very forcibly defined the Procreative Principle. In this tendency lies the element of self-development which constitutes one of Nature's most essential potentialities, since thru its operation the primarily simple mind-element was evolved into the subminds of the lower Mammalia which eventually became qualified, in the course of the progressive stages of Evolution, to construct the very highest forms of organic life.

The Materialist's abstractions which he designates as physical processes, mechanical agencies, chemical reactions etc., are but the subminds' modes of operation thru which the up-building of plants and animals is effected and maintained, even as an artisan employs the same means to accomplish his ends. Why should the infinitely superior mechanicisms of Nature not necessitate a mechanician (or mechanics) as much or more so than are required in the various lines of Art?

While, then, the Teleologist does not question the potentiality and necessity of the physiological processes with which all biological and psychological functions are associated, the Materialist fails to recognize the nature of the antecedent forces that initiate, determine and control them.

CHAPTER 58

Herbert Spencer Repudiates Natural Selection As Inadequate To Account For The Phenomena Of Procreation And Heredity. Assails Prof. Weismann's Position On The Transmissibility Of Acquired Traits. The Rationale Of The Principles Involved. The Discrimination Exercised By The Subminds Between Serviceable Traits Which Are Incorporated For The Benefit Of Posterity, And Useless Characters That Are Ignominiously Rejected.

Keeping within reasonable limits of our present subject bearing on the relation of Procreation to Evolution, Henry Drummond says on page 5 of "**The Ascent Of Man**": "Herbert Spencer's famous definition of Evolution as 'a change from an indefinite incoherent homogeneity to a definite coherent heterogeneity through continuous differentiations and integrations is simply a summary of results and throws no light upon ultimate causes."—To do so it would be necessary to reveal and explain the nature of the factors which produced the changes we comprehend under the term "Evolution", and such attempt has never been made by Mr. Spencer. On the contrary, he consigned all these problems to the realm of a "**Great Unknowable.**"

That he in no way regarded the **facts** of Evolution (which no one denies) as **explaining** these facts may be seen in his treatise on "**The Inadequacy Of Natural Selection**"* in which he attacks Prof. August Weismann's theory of Heredity in its relation to Reproduction and other phenomena. Thus, after citing the experiments of Prof. Weber on the sense of touch in which it was found that the different parts of the surface of the human body are endowed with widely differing tactual discriminativeness, the greatest perceptiveness being in the forefinger tip, and the least in the breast and middle of the back, he asks:

"What is the meaning of these differences? How, in the course of Evolution, have they been established? If 'Natural Selection', or survival of the fittest, is the assigned cause, then it is required to show in what way each of these degrees of endowment has advantaged the possessor to such an extent that not infrequently life has been directly or indirectly preserved by it. They cannot have become widely unlike in perceptiveness

* D. Appleton & Company, New York, 1897, p. 2.

without some cause. . . Can this, or anything like this, be shown?"

Of course his very question carries with it a negation of Natural Selection accounting for the fact that the sense of touch is strongest where most needed, and weakest where least needed—evidence that judgment was exercised in correctly pro-rating the distribution of this sense over the surface of the human body for purposes of self-preservation. And the exercise of actual judgment not even Professors Haeckel and Weismann have ever had the hardihood to accord to the nonentity, Natural Selection. Of what other intelligence then, or minds qualified to exercise the essential judgment in the premises, have we any direct knowledge than the cell-souls whose operations Prof. Huxley likened to those of "unseen artists who, as with their plans before them, strive with skilled manipulations to perfect their work"?

This kind of "Natural Selection" is a verity, since it selects, judges and determines with the same discrimination the supra-mind exercises, while the Darwinian kind is a sham, a "delusion and a snare," since the originators and apologists for this term by implication endow what they regard as the "blind forces of Nature" with a capacity (of selection) which they deliberately deny to them on all other occasions!

"Is it not then," Herbert Spencer said on page 20, "that the use of the expression 'Natural Selection' has had seriously perverting effects? Must we not infer that there has been produced the tacit assumption that it can do what artificial selection does—can pick out and select any small advantageous trait, **while it can, in fact, pick out no traits!** (Can nothing pick out or select something?! H. W.) Have many biologists not been unawares led to espouse an untenable hypothesis?"

Spencer assails Prof. Weismann's contention that the reproductive cells exist as independent units (upon which assumption his denial of the inheritance of acquired "characters" is based, but are not **all** traits first acquired and then transmitted?) chiefly on the ground that both the somatic or nonsexual, as well as the reproductive cells are connected by fine plasmic fibers upon which fact I commented in a chapter on the soul-life of plants, claiming that by means of these fine protoplasmic threads, which are nothing but nerves, a telepathic communication is maintained between the cell-souls of plants (and of animals as well) for purposes of co-op-

erating in the up-building and maintenance of their respective organizations, besides serving as connective tissue.

"In the presence of these facts, what are we to say?" asks Spencer on pages 38 and 39. "Simply that they are fatal to Weismann's hypothesis. They show that there is none of the alleged independence of the reproductive cells, but that the two sets of cells are in close communion. They prove that while the reproductive cells multiply and arrange themselves during the evolution of the embryo, some of their germplasm passes into the mass of somatic cells constituting the parental body and becomes a permanent component of it."—**Parental** is either an error of Spencer or of the printer, for how can cells building up the embryo pass again into the parental body? It would be correct to say: "Constituting the **principal** body—of the embryo, and becomes a permanent component of it."

Spencer's reply to Weismann's question: "Where are the facts proving the inheritance of acquired characters?" is: "Surely, if not only the general structure of organisms, but also many of the modifications arising in them, are inheritable, the natural implication is that all modifications are inheritable."—My reply is: The fact that no inherited characters can be pointed out that were **not** acquired, proves the inheritance of acquired characters with this proviso: Whenever a new feature is found by the cell-souls involved to be of advantage to the organism, they incorporate it therein as an acquired character, and by transmitting their cognitions of it to the procreative cells, it becomes hereditary.

Conversely, any modifications of structure not recognized as advantageous to the "colony of cells" by the subminds controlling them are rejected as worthless, hence **not** transmitted to their progeny. Instance the mutilation of the Chinese women's feet and the circumcision of the Jews continued for thousands of years without their acquired traits having become hereditary, showing that their subminds have more good common sense than their supra-minds, at least on those points. The corollary is that upon the recognition by the cell-souls of acquired characters that are serviceable, and therefore worthy of being transmitted to posterity, depends the diversification of type which, if continued, eventually results in the Origin of New Species. That's "Evolution."

CHAPTER 59.

How Wind-Fertilized Plants Exclude Undesirable Intruders. The Principle Of Adaptation. Conscious Memory Of The Subminds Revealed In Procreation, Nutrition, And the Persistence Of Type. Tyndall's Version Of Evolution. The Archetypal Feature Of Organic Life.

We have seen in a former chapter to what ingenious devices the subminds of certain species of flowering plants (Phanerogams or Phenogams) resort in order to attract pollen-bearing insects. We will now show how the subminds of other species conceived of a still better mode of fecundation.

It must be evident that the rudeness with which insects flit over the delicate and sensitive reproductive organs of flowers must unavoidably inflict many a pang upon their tender cell-souls, for it is well-known that all cells (vegetal as well as animal) exhibit under the microscope irritability and sensitiveness of a high degree of intensity for the infinitesimal quantity of substratum involved. What more natural, then, than that the unpleasant sensations produced should have suggested to some of the subminds of former generations of Phenogams the feasibility of dispensing with these unwelcome visitors altogether and depending for the essential fructifying elements upon aerial currents wafted towards them.

This idea—an intuitive conception of the simplest and crudest character at first, and which required many generations of cell-souls before it assumed definite form—necessitated several important modifications of structure, to-wit: First of all, the blossoms had to be made less enticing and less conspicuous to the view; second, the attractive odors had to be dispensed with; and third, the "nectar and the honey" need no longer be distilled.

But this was only the first part of the program; the most essential part was yet to come. For it was found that after these once highly prized attractions had been consigned to Nature's "junk-shop", (where they still remain in the form of atrophied structures), that the delicate reproductive organs were still exposed to the annoyance of chance intruders (upon their "privacy") who were drawn thither from sheer curiosity to see whether "something or other" might not be discovered therein wherewith to appease their ravenous appetites. How to exclude these marauders, or at least keep them

at a respectful distance, was, therefore the next and most important problem to be solved.

Now in what more practical manner could this be accomplished than by weaving some kind of a net-work over the parts to be protected—a network of sufficient strength to resist the encroachments of the insective tribe, and yet of the proper texture to admit thru its meshes the pollen wafted towards them by aerial currents? That this idea was actually conceived and carried out is attested by the fact that a shield serving these very dual purposes is found in the form of film-like gauzes spread over the procreative organs of certain kinds of flowering plants. Its absence in others is but an indication that their subminds failed to realize the advantage they afford and are, therefore, compelled to submit to the annoyance of rude, yet indispensable insect-callers with the best possible grace.

It must not be supposed, however, that these modifications of structure were all conceived and designed by the cell-souls or subminds of but a few of the plants provided with these "useful and purposive contrivances", as Haeckel very appropriately terms the various parts of an animal or vegetal organism. Neither were they brought to their present state of perfection by comparatively few generations of teleo-mechanics (said cell-souls) engaged in their unfolding; on the contrary, it required the combined mental efforts (extremely simple as they were in each individual case) of countless numbers of generations to build up this one (or any other) "character" or distinguishing feature of their complex structure. That is to say, each and every one of the myriads of cellules involved in their creation and development contributed its infinitesimal quota of mental impressions to the general fund of ideations embodied in their subconsciousness, which fund was preserved by the memory associated with all mind and transmitted from one generation to another thru the instrumentality of that most wonderful and all-transcending device of the subminds—the procreative system.

Thus innumerable generations of cell-souls lived and passed away before their combined ideations "materialized" into the present forms of wind-fertilized plants, each cell involved in their construction adding its mite to the physiological and psychological heritage bequeathed to them by their predecessors in their line of descent.

Whether a similar thought passed thru some inspired poet's supra-conscious mind the writer knows not

but certain it is that it most profoundly expresses the principle outlined above, to wit:

"All experience became
Consolidate in mind and frame."

A grander and more comprehensive biological truth was never condensed and uttered in such few words. Analyzed into its constituent elements it means that the entire series of original and new conceptions, ancestral experiences and conscious memories impressed upon a consanguineous line of cell-souls engaged thruout past generations in building up a certain type, class or species of organism gradually crystallized into its subconsciousness and incorporated themselves into the body or "frame" of the individual wherein they found expression by manifesting themselves in a concrete form.

Hence, organic Evolution may be regarded as the result of a gradual "dawning" upon the subminds of all plant and animal life in the past, present and future of such modes of construction or processes of cell-formation as they **intuitively** perceived to be best adapted to their conditions and environments, they adjusting their structure to them as far as lay within their limited power and resources. In this tendency lies the basic principle of the law of Adaptation.

Now since their mental impressions are as subject to modification and advancement as is our own supra-consciousness, their entire sum of conceptions which were primarily of an extremely simple nature, gradually branched out and assumed the magnificent proportions of the genealogical tree of the Animal Kingdom—the archetype of the original ideas pertaining to morphological structure persisting with and running thru all the divisions and subdivisions of plant and animal life.

In this characteristic archetype of organic life, principally seen in its modes of nutrition, mentation, assimilation, elimination and reproduction, the **conscious** memory of the cell-souls is revealed—memory being, as we have seen, the chief conservative factor of Heredity, that is, of the Persistence of Type.

Evolution, then, being in its sum-total an abstract concept or nonentity, is but the symbolized outline or image engendered in our own minds of the entire work accomplished by the up-builders of organic life since its first appearance on our planet. Hence Evolution, **per se,** cannot have had the remotest influence upon its creation and development. This admitted, then what warrant is

there for the emphasis placed upon it by Materialism as a factor in the processes of Nature, it existing only as an abstraction in learned men's brains?

This was fully realized by Prof. John Tyndall in saying: "Evolution is the product of the scientific use of the imagination." How, then, can Evolution have any influence upon the **actual work** performed by the forces of the cosmos? Yet the Materialist rests content in the belief that Evolution accounts for and explains all the facts and phenomena of existence.

Can a **nothing** produce the wonderful organic combination thru which this **nothing** is conceived? Materialism answers this absurdity in the affirmative.

Yet what would the Materialist say of a man who would contend that the advancement in the arts, literature and sciences is due solely to the nonentity called "Evolution"? Would he not consider him a fit subject for a **Lunatico Inquirendo?**

If, then, intelligence is the essential factor in the evolution of the arts of civilization, is it not equally indispensable to the evolution of the infinitely grander works of Nature? Nay, of correspondingly **greater** necessity since the mechanic must in all cases and events be equal, if not superior, to the mechanism, of whatever magnitude this may be.

CHAPTER 60

The Telepathy Of The Subminds. Procreation Among Single Cells. The Relation Of The Microcosm To The Macrocosm. The Elements Of Ratiocination. The Faculties Of The Somatic Cells. Why The Conscious Intelligence Of The Stem-Cells Proves The Consciousness Of The Biological Minds.

Attention is next called to the fact that simple forms of mind-transference afford the necessary means of communication between the cells of an animal or a vegetal organism, enabling them to co-operate along the lines the memory of their stem-cells has laid out for them for the purpose of building up and maintaining their respective structures for their natural tenure of life, or as far as lies in their limited power. This telepathy is especially adapted for the transmission of the physical and mental traits of the organism to its progeny thru the instrumentality of the reproductive organs.

Similar forms of mental suggestion proceed be-

tween the sub- and the supra-minds of the higher animals (large areas of brain-ganglia serving as means of communication), altho we are not cognizant of this incessant telepathy between our dual mentalities because there is no physiological need of it, and what there is no necessity for, the subminds do not evolve.

The corollary to the foregoing propositions is that the principle of Procreation in both its physical and mental aspects, as well as in its ethical and teleological phases, is as operative between the individual cells of a plant or an animal as in the relations of the higher sex-organisms towards each other, it covering all branches of organic life from Moner to Man. All processes of growth and development are therefore effected by a form of genital conjugation between the individual cells of living organisms. In other words: segregation resulting in the up-building of organic structure is carried on by the cell-souls in a manner akin to that which characterizes the known functions of the opposite sexes and with the same objective results.

This analogy between the most primitive and the most advanced types of organic life is an exemplification of the principle that in the macrocosm the nature and operations of the microcosm are reflected on an infinitely magnified and exalted scale. Hence by studying the nature of the simple and minute, that of the complex and grand can be approximately determined—the archetypal features of the former (or source of all) necessarily persisting with and being expressed by, the Great. Here again the **Conscious Memory** of the mind in Nature is manifested. In the study of natural phenomena its operations can be more or less distinctly traced. It explains them, because consciousness is one of the chief attributes of mind as we know from experience and observation. In fact, memory may be defined as conscious mind in active operation. Grant memory, then, to single cells, (as does Haeckel, Binet and other Biologists,) and you grant them consciousness. Memory antecedes judgment, this being able to function only from memory based on experience and observation. The exercise of conscious memory, judgment and will carried on consecutively constitute processes of ratiocination, extremely simple tho they be in single cells.

Yet these faculties form the basis for the telepathy proceeding between the cells of plants and animals. Without such means of mind-transferenec there could be no co-operation between their various members and or-

gans thru which alone life can be maintained

The subminds are also governed in a great measure by the perceptions of the supra-mind which thru its sensilla is ever on the alert and **en rapport** with the outside world for purposes of self-preservation and reproduction. These remarks have a special bearing upon the subject treated in the preceding chapter.

From the foregoing premises we may draw the conclusion that thru the co-operation carried on by means of a simple telepathy, the mind in Nature reaches higher planes of existence until it is enabled to build up the most complex organisms. Of this we have tentative evidence in the internal movements of the fecundated ovum-cells which, in conjunction with the activities of their multiple cells, resemble the movements of unseen artists who as with their plans before them strive with skilled manipulation to perfect their work—paraphrasing Prof. T. Huxley's felicitous description of an incipient organism's initiatory processes of cell-formation.

Now when it is considered, in connection with these purposive manipulations of ovum-cells and their derivatives, that they all display under the microscope the same degree of conscious intelligence and the same emotional faculties, yet one stem-cell can build up only a blade of grass, another one only a worm, another only a bird, another one only an ape, and another one only a human being, the inference is irresistible that each fecundated germ-cell can be cognizant only of the physical and mental characters of its genitors, and that these cognitions, confined as they are within the narrow compass of its periphery, constitute the plan of the skilled manipulator of atom, molecule and cell who arranges them in accordance with the impressions telepathically communicated to him by his predecessors.

This leads to the further conclusion that an element essential to and characteristic of the life of a single stem-cell, and which animates any organism during its earliest incipiency, must necessarily persist with it during its entire career, no matter what size or degree of complexity the processes of cell-formation may assume. Hence in the evidences of conscious intelligence of the single cells from which all complex organisms were derived, we have objective evidence of the conscious intelligence, as well as of the conscious memory, judgment and will of the sum of their psychic energy which manifests itself in the life of each individual and which life is identical with its subconsciousness. But this self-evi-

dent proposition is strenuously denied by the author of **World Riddles.** No wonder the world is a riddle!

CHAPTER 61

The Evolution Of Sex. How The Higher Virtues Were Forced Upon Us "At The Bayonet's Point" (According To Drummond.) The Metamorphoses From Brute To Man. How His Elevation Was Effected. Still It Is "But One Step From The Sublime To The Ridiculous."

Returning to the manifold devices the subminds of plants resort to in order to perpetuate their species, Henry Drummond presents still more remarkable facts pertaining to the Evolution of Sex and the development of the procreative element, from which we may glean how the cell-souls operated to bring organic life to its present stage of perfection. Thus he says on pages 243 and 244:

"By a device the most subtle of all that guard the higher Evolution of the World—the device of Sex—Nature accomplished the task of establishing such sympathies between widely separate beings that they must act together or forfeit the very life of their kind. Sex is a paradox; it is that which separates in order to unite. . . Picture the state of primitive Man; his isolation, and think how great a thing was done by Sex in merely starting the crystallization of Humanity. The determination of Nature to lay the foundation for corporate national life, and to imbed Sociability in the constitution of Humanity, is obvious when we reflect with what thoroughness the Evolution of Sex was carried out. There is no instance in Nature of the Division of Labor being brought to such extreme specialization. The two sexes were not only set apart to perform different halves of the same function, but each so entirely lost the power of performing the whole function alone, that even with so great a thing at stake as the continuance of the species, **one** could not discharge it. Association, fellowship, affection—things on which all progress turns, were thus forced upon the world at the bayonet's point."

Drummond's words must be taken in their literal significance. By saying that progress was forced upon the world at the bayonet's point, he meant, of course, that the division of organic life into two separate sexes and their subsequent organic reunion thru conjugation, was designed for, and had its special purpose in, bringing into play the primarily latent germs of love for

mate, and affection for offspring, which have their basis in the very nature and constitution of "matter". These arrangements inspired or forced primitive man to cultivate the Arts, thru which his progression was not only propitiated, but they also inevitably resulted, or will result, in his highest possible development.

To be more explicit. Drummond's figure of speech in intimating that the metamorphosis of brutes into a refined animalism was effected "at the bayonet's point" signifies that the upbuilders of organic life so constituted the more complex forms after introducing the element of sexuality "with all this term implies" into the world, that both male and female were compelled thru sheer physiological necessity to cultivate those affections that are essential to social and moral advancement as well as to material prosperity. That this procedure assisted in producing an intellectually superior race of beings, is seen by the comparatively high plane of excellence Man occupies at the present time.

Sex-separation was thus designed primarily, and sex-affiliation secondarily to effect the physical and mental elevation of a certain favored species thru these compulsory means it was unable to disregard. No matter to what extent this selected race of beings might feel inclined to live for **Self** in its struggles for existence, the "Struggle for the Life of Others," i. e., for offspring, was forced upon it thru the procreative impulse—the only means by which those virtues could be unfolded that placed Man at the head of the Organic Kingdom. In no other conceivable way could this "consummation devoutly to be wished" be brought about. Thus were the higher virtues forced upon Man "at the bayonet's point "thru the principle of Sex.

A similar thought must have passed thru Haeckel's mind when he uttered the following words on page 394 of Vol. II of **The Evolution Of Man**: "We glorify Love as the source of the most splendid creations of Art; of the noblest productions of Poetry and of Music; we reverence in it the most powerful factor in human civilization, the basis of family life. . . So wonderful is Love, and so immeasurably important is its influence on mental life, that in this point, more than in any other, supernatural causation seems to defy every natural explanation." Then taking a strictly monistic standpoint again, he adds: "Notwithstanding all this, the comparative history of Evolution leads us back very clearly and indubitably to the oldest and simplest source

of Love—to the elective affinity of two differing (sex-) cells."

Nevertheless "**elective affinity**" are also terms of mind and can have nothing in common with purely physical agencies. Hence in ascribing what in the above panegyric he glorifies and endows with almost divine attributes, to blind mechanical agencies or physico-chemical reactions, reminds one of the saying that "**It is but one** step from the sublime to the ridiculous".

CHAPTER 62

Drummond On The Ethical Significance Of Sex. Why Superficial Observation And Familiarity With The Wonderfully Complex Structures Of Organic Life Leads To Atheism. The basis Of Sexuality. The Significance Of Masculinity And Femininity. Harriet Martineau's Estimate Of Materialism. The Antecedents Of Sex.

Having shown from his peculiar standpoints how the Evolution of Man was started "at the bayonet's point", Henry Drummond remarks on pages 245 and 246: "Along the line of the physiological function of Reproduction in association with its induced activities and relations, not only has Altruism entered the world, but along with it the necessary field for its expansion and full expression."

It should here be noted that he did not accept the materialistic interpretation of these phenomena, but rather the deistic one, hence the Source of Altruism he referred to as having made its appearance in the world at a certain period in the history of the Evolution of our race, is what is popularly called **God.**

After referring to sex-division and sex-affiliation as "the new and extraordinary device we have seen leap into prominence", he continues as follows under the caption of "**The Ethical Significance Of Sex**", page 245: "The direct and collateral issues here are of such significance that it will be essential to study them in detail. Realize the originality of this most highly specialized creation, and it will be seen at once that something of exceptional moment must lie behind it. Here is a phenomenon which stands absolutely alone on the field of Nature. While everything else has homologues and analogues somewhere in the cosmos, this is without a parallel. Familiarity has so accustomed us to the sex-separation that we accept and regard it as a matter of course;

but no words can do justice to the wonder and novelty of this strange line of cleavage which cuts down to the very root of being in everything that lives."

Our proneness to regard everything indicating intelligence in Nature as "a matter of course" is apt to blind us not only to the mystery of its existence, but also to its evidences of purposive design. Our familiarity with the wonderfully complex structure of organic life, which is nowhere more conspicuous than in the co-adaptations of the Reproductive Systems and in the provision for nourishment made synchronously with the development of the new organism, has totally blunted our perceptions to the foresight and wisdom displayed therein. To this superficiality of observation is the Materialism of the present time directly due. Yet its advocates vaunt themselves of being the **Avant Coureurs of Science!!!** They are about a **Century Behind** the **Progress Science** has made in "**Marching towards Its Goal**"! And they will **Stay Behind,** for well has Harriet Martineau said: "The moment a man prefers to find the Truth on one side rather than on another, it is all over with him as a **Thinker.**"—And why? Because he has **Stultified Himself** with his own **Conceit** in fancying that he has **found** the truth and it is, therefore, of no use to look for it any further! He has simply come to a **Dead Halt.**

To return to our subject. On page 246 Drummond says: "The broad and simple fact that this division into maleness and femaleness should run between almost every two plants and animals in existence must have implications of an exceptional kind. When we reach the higher plants, the differences of sex become as marked as among the higher animals. Male and female flowers grow upon separate trees, or live side by side on the same branch, yet so unlike one another in form and color that the untrained eye would never know them to be relatives. Even when male and female are grown on the same flower-stalk and enclosed in a common perianth, the hermaphroditism is generally apparent owing to their physiological barriers of heteromorphism and dichogamy. Sex-separation, indeed, is kept up by a variety of complicated devices, and a return to hermaphroditism is prevented by the most elaborate precautions".

Probably by scientifically conducted experiments in purely physical processes, physico-chemical reactions and **Survivals** of **the Fittest** our artificial protoplasm pandits will perhaps be able to prevent their artificially generated wigglers from returning to a state of hermaphroditism if

they have succeeded in endowing them with maleness and femaleness, for without these essential attributes their "**cultures**" and **protegees** would soon become extinct and likewise their profound (?) researches in the fields of Biology.

But in their vain-glorious attempts to prove that organic life can be created by the ingenuity of our supra-consciousness it has never occurred to these scientists that they have merely substituted their own intelligence for that of so-called "Nature", thus proving what they attempted to disprove, namely, that intelligence **is** the essential and potent factor in all processes of creation and development. With their exceedingly limited knowledge, experience and judgment they simply produced on a very small scale what the teleo-mechanics of Nature constantly generate in an infinitely greater magnitude.

In next paragraph Mr. Drummond says: "When we turn to the animal kingdom, the same great contrast (in sex-separation) arrests our attention. Half a century ago when Balbiani described the male and female elements in microscopic infusorians his facts were all but rejected by science. But further research has placed it beyond all doubt that the beginnings of sex are synchronous almost with those shadowings-in of life. From a state marked by a mere varying of the nuclear elements, a state which might almost be described as an antecedent to sex, the sex-distinction slowly gathers definition, and passing through an infinite variety of forms, reaches at last the climax of separateness which is observed among birds and mammals."

The physico-dynamic (magno-electric) substratum of sexuality, hence the antecedent of sex, is found in the positive or male, and negative or female elements of the vito-psychic forces disseminated thruout the universe. To their unification resulting in organic and inorganic matter, as well as to their affiliation manifested in the various forms of attraction, (dislike being manifested in repulsion), may the multifarious phenomena of the Cosmos be traced. Thru organization into protoplasmic bodies these sex-elements become intensified to a sufficient degree to reveal themselves to our senses in their real nature and capacities, and gradually assuming thru their tendency of self-development their proper status in the economy of Nature, they finally find their highest exaltation in the Procreative systems of our race.

CHAPTER 63

Parthenogenesis. Drummond "Suspects" A Teleological Factor In Reproduction. The Interpretations Prof. August Weisman And Other Materialistic Scientists Place Upon Procreation. "Natural Selection" A Misnomer. Nuts For Materialists To Crack.

Commenting on the extraordinary phenomena of sex-separation of plant and animal life, H. Drummond asks on page 248: "Now what does all this mean? To say that the sex-distinction is necessary to sustain the existence of life in the world is no answer, since it is at least possible that life could have been kept up without it. From the facts of Parthenogenesis, illustrated in bees and termites, it is now certain that Reproduction can be effected without fertilization; and the circumstance that fertilization is nevertheless the rule, proves this method of Reproduction, though not a necessity, to be in some way beneficial to life. Is it inconceivable that Nature should sometimes do things with an ulterior object, an ethical one, for instance? To no one with any acquaintance of Nature's ways will it be possible to conceive of such a purpose as the sole purpose. In the early days when sex was instituted it was a physical universe. Undoubtedly sex then had physiological advantages; but when in a later day the ethical advantages become visible and rise to such significance that the higher world nearly wholly rests upon them, we are entitled, as viewing the world from that higher level, to have our own suspicions as to a deeper motive underlying the physical."

Yes, a motive far superior to that which underlies the mere physical continuation of organic life—a motive which had for its object the elevation of the **Universal Mind** or **Cosmic Consciousness** to the highest plane of mental and moral perfection; a motive which had its inception in the self-developing nature of the Primal Mind Energy and found its culmination in a perfect Manhood and Womanhood!

Regarding the interpretation other physicists have placed upon the facts and phenomena of Reproduction, Drummond states on page 249:

"Apart from bare necessity ("Necessity" and "Mechanicism" being, beside "Nature" and "Evolution" the "Corner-stones" of Materialism, H. W.), it is further remarkable that no very clear advantage of the sex-distinction has yet been made out by Science. Hensen and Van Beneden are able to see in conjugation no more than

a **Verjuengung** or rejuvenescence of the species. The living machinery in its wearing capacities runs down and has to be wound up again; to keep life going some fresh impulse must be introduced from time to time; or the protoplasm, exhausting itself, seeks restoration in fertilization and starts afresh. To Hatschek it is a remedy against the action of injurious variations; while to Weismann it is simply the source of variations. 'I do not know', says the latter, 'what meaning can be attributed to Reproduction other than the creation of hereditary individual characters to form the material on which Natural Selection may work. Sexual Reproduction is so universal in all classes of multicellular organisms, and Nature deviates so rarely from it, that it must necessarily be of pre-eminent importance. If it be true that new species are produced by processes of selection, it follows that the development of the whole organic world depends on these processes, and the part that amphigony has to play in Nature, by rendering selection possible among multicellular organisms, is not only important but of the very highest imaginable importance?''

Reading between the lines of such materialistic versions of these phenomena, we find that all express a literal acceptance of Mind as the actual factor in these processes of Procreation. Thus we are told that the machinery of the organism has run down and must be wound up again to keep it from stopping, which assumes some intelligence which is aware when it is time to wind it up and knows how to proceed.—The ''introduction of some fresh impulse to keep life going'' predicates an intelligence qualified to apply the right kind of an impulse at the proper time.—The ''protoplasm seeks restoration'' in some way because the cell-souls are aware of how to resume and conduct the ''processes of rejuvenescence''.—''It starts a-fresh'' because it perceives the necessity for it and knows just how to get a fresh start in life''.—The ''protoplasm applies a remedy against the action of injurious variations'' since it recognizes the need of such a remedy and knows how to apply it.—The object of ''creating hereditary individual traits to form the material on which Natural Selection may work'' postulates that the correct judgment to that effect is exercised.—The statement that ''Nature deviates so rarely from sexual reproduction that it is next to universal in all classes of multicellular organisms'' admits her awareness or recognition of this mode of Procreation being the most practical under all circumstances and best adapted

to the elevation of Man, and this awareness is identical with the consciousness Haeckel and his confreres will not admit. "New species are produced by natural selection" in the true and literal signification of these terms because they imply the exercise of conscious judgment in producing new species.

The Materialist thus constantly dogmatically rejects what his better sense intuitively accepts.

To be more specific it may be asked: Who or what is aware of the fact that the animal or vegetal body "is gradually wearing out and that consequently provision must be made for its rejuvenescence in Reproduction" before the species (and with it the whole valuable fund of cognitions, ancestral experiences and memories pertaining to it) becomes extinct? Who or what has planned to periodically "introduce fresh impulses into organic life" to perpetuate it **ad infinitum?** Who or what "winds up the clock-work again" before it comes to a dead stop? What is it which, after "having exhausted itself", seeks restoration thru reproduction? Who or what was cognizant of the limitation of individual organic life, and knew just how to proceed to insure its continuance in such a way as to gradually bring it to a state of perfection? Are all these phenomena traceable to a "fortuitous concourse of atoms"? Or to chemical reactions?!

CHAPTER 64

Haeckel's Version Of Heredity. The Psychological Moment Of Our Lives. Mind The Most Elaborate And Most Perfect Form of Energy That We know. In Physio-Psychology Rests Solution Of Heredity And Procreation. Subminds Build Houses Called "Plants" And "Animals" To Live In.

In line with the "explanations" (?) given in last chapter of the phenomena of Reproduction by Prof. August Weismann and other scientists, is the following opinion by Prof. Haeckel of the principles of Heredity, both phenomena being closely related to each other, virtually "one and inseparable". I quote from page 140 of **World Riddles:**

"However, the great province of Heredity, to the inestimable importance of which Darwin first opened our eyes in 1859, is thickly beset with obscure problems and physiological difficulties. We dare not claim, even after forty years of research, that all its aspects are clear to us.

Yet we have done so much that we can confidently speak of Heredity as a **physiological function** of the organism which is directly connected with the faculty of generation; and we must reduce it, like all other vital phenomena, to exclusively physical and chemical processes, to the **mechanics** of the protoplasm." (This reduces Heredity and Generation to nothing, since "mechanics" in **itself** is a nonentity the same as all processes or motions, and can **nothings** explain themselves? H. W.)

"We now know accurately enough the process of impregnation itself; we know that in it the nucleus of the spermatozoan contributes the qualities of the male parent, and the nucleus of the ovum gives the qualities of the mother to the newly-born stem-cell. The blending of the two nuclei is the **'physiological moment'** of Heredity. (**"Psychological moment"**, tho hackneyed, would be the correct expression. H. W.) By it the personal features of both body and soul are transmitted to the new individual." (Think of a blind physiological, mechanical **or** chemical process transmitting the **mental** characteristics of the parents to their offspring! H. W.)

"These facts of Ontogeny are beyond the explanation of the dualistic and mystic psychology which still prevails in the schools, whereas they find a perfectly simple interpretation in our monistic philosophy."

But didn't the learned Professor state at the very outset that these facts of Ontogeny, which include the fields of Heredity and Procreation, are thickly beset with obscure problems and physiological difficulties—a candid admission that **Physiology alone** is totally inadequate to cope with them! And since this science embraces within its province the **physical** features of the Darwinian theory of Development, as well as the monist's exclusively physical, chemical or mechanical processes to which Haeckel would reduce the phenomena of Heredity and Reproduction, what is there in **Physiology** that could thro the least light on them? Absolutely nothing—according to Haeckel's own literal admission!

Now there are only two great fields of Research known to biological Science: Physiology and Psychology, and since the former "has been tried and found wanting" insofar as it has failed to throw light on these problems, we must needs turn to the domain of Psychics for their solution.

Yet we have found that in all organic processes the physiological forces are ever active in all departments of the animal "economy", and also invariably associated

with psychic phenomena or manifestations of various kinds and degrees of intensity, forcing the conclusion that the physical and the psychical elements are inalienably associated and in co-operation to produce the various biological phenomena that come under our constant observation, the corollary being that the facts of Hereditary Transmission and of Procreation rightfully pertain to both domains of Physiology and Psychology, or rather, that they properly belong to **one only** which may be designated as Physical Psychology or Psychic Physiology. Or the term Organic Psychogeny may be employed in contradistinction of the Inorganic Psychism operating in inorganic Nature.

Returning to the "explanations" offered by Haeckel, Weismann and other scientists of the unsolved problems of Reproduction and Heredity it behooves us to ask how it came about that while at the beginning of the paragraph quoted from page 140 Haeckel admitted the obscurity in which the problems under consideration are still enshrouded, and that we dare not claim, even after forty years of research, that all their aspects are clear to us, yet at the end he asserts that "they find a perfectly simple interpretation in our monistic philosophy?" If so **simple,** why did he not favor his readers with the solution of these "**obscure** and **difficult** problems"?!

Also how does he reconcile his monistic philosophy with his assertion on the very next page that "the two cell-nuclei which are the material vehicles of this **psychic** potential energy, unite to form a new nucleus"? This admits **mind** as a factor in processes which at other times he, from his **monistic** viewpoints, regards of an exclusively mechanical character! And that he recognizes this "psychic potential energy", which uses the cell-nuclei as its material media for forming a new nucleus, (a grand truth), as a veritable entity, is seen in this passage on page 221: "The most elaborate and most perfect form of energy that we know is the psychic life of the higher animals, the thought and reason of Man." (Another inspired truth!) Scientists "**know**" only entities!

Thus in joining the two just quoted views, the gist and substance of my contention is expressed that all organic processes, from the simple one just mentioned by Haeckel, up to the most complex ones, are under the control of **mind,** which in its capacity of potential psychic energy is an entity which uses its material substratum (i. e., the physico-dynamic element associated with all

mind) as its "vehicle" or medium thru or with which it builds up organic bodies, and under different conditions, inorganic bodies as well.

In other words: all cell-souls of plants and animals, which in their totality we call their subconsciousness, are an embodiment, materialization or individualization of an active working-force that builds up all forms of organic life in the same manner and for the same purposes for which a carpenter constructs a house to live in, one group of cell-souls or subminds knowing how to construct the animated "house" we call a mollusk, another group or congeries of cells knowing how to build the different kinds of houses we call "fish"; another kind of cells knowing how to build the houses we call "plants" and others again knowing how to construct the living abodes we call "horses", "giraffes", "deer", "men", etc. etc.

As a force, mind cannot possibly be the result of a function or process, since these are abstract concepts, while mind, we have just seen, is an active working force. All organic phenomena must have an antecedent motive-power "back" of them, and of what other such energy have we any knowledge or conception than the one recognized by Haeckel as an entity competent to unite two nuclei to form a new one? Instead, then, of his mechanical processes producing mind, it is evident from his correct standpoints (occasionally taken!) that this potential psychic energy instigates and governs these processes, and that Materialists have simply "placed the cart before the horse". Could mindless matter arrange itself into the wondrous structures of the Cosmos? When the absurdity of the idea dawns upon Monists in all its enormity, they will marvel how they could ever have entertained it.

CHAPTER 65

How The Variegation Of Organic Life Was Effected. The Conservation Of Hereditary Transmission Antagonistic To Evolution. The Great Evil The Wand Of Heredity Alone Would Have Brought Into The World. The Versatility Of Mind Expressed in the Diversification of Type.

Returning to Drummond's version of the phenomena of the Diversification of type thru the instrumentality of sex and its implications, (one of which was that he "suspected" an ultimate higher motive back of it), and commenting in particular on Weismann's views of "Nature's" (?) object of reproduction aside from that of perpetuating organic life, (or, rather, in conjunction therewith,) he says on page 250:

"Now if Evolution designed, among other things, to undertake the differentiation of mankind, it could not have done it more effectively than through the device of sex. To the blending of the different characteristics of father and mother under the subtle wand of Heredity all the varied features and interests of the human world is due. . . . It is seen how perfect an instrument for variegating humanity lies therein. Had sex done nothing more than make an interesting world, the debt of Evolution to Reproduction had been incalculable."

To be more specific: it is the whole Organic Kingdom that is under obligations to Reproduction (or its factors, rather,) for the benefits derived therefrom, and not Evolution, since this, as an abstract concept, cannot have had the remotest connection with it. No other way is conceivable than thru dividing life into two principal sections and re-uniting them, that the great object of differentiating the fauna and the flora of the world could have been attained, enabling individuals to distinguish each other. What a dull and stupid world this would be if all plants and animals were exactly alike!

Now if the subtle wand of Heredity had had free play in the premises, no diversification of plant and animal life would have been effected because the principle involved is pre-eminently of a conservative character and therefore antagonistic to Variation. It tends to preserve the established order of things, be this of whatever nature it may. It leaves all in **statu quo,** hence is opposed to progress. The Survival of the Fittest in the Struggles for Existence facilitated development, but could not have had the remotest effect upon the physiological processes

connected with the modification of organic structure or adaptation to its environments. Some direct forces or influences were needed to effect the changes from simple to complex forms of life. Hence we have to trace the manifold advantages derived from Procreation to entirely different sources than to the facts and phenomena of hereditary transmission and Natural Selection. Even Haeckel recognized in Reproduction "Supernatural Causation", as we have seen.

Neither Evolution nor Heredity can, therefore, account for the fact that Organic Life was divided into two principal halves, and for the inestimable benefits derived therefrom outside of its continuance being assured. This could have been effected in a much simpler way than thru the introduction of sexuality into the world, for instance by maintaining the primary mode of reproduction or Segmentation, that is, thru multiplication by division which proceeds, apparently, without the instrumentality of sex.

But what would have been the result? The subtle wand of Heredity would have preserved the first evolved characters of the simplest self-evolved Chromacea, and no variegation of type would or could have ever taken place, which means that Evolution would have been an utter impossibility. No new features would have ever appeared in any organisms thru which identification could have been effected—all individuals would have presented an unbearable sameness. Life would have been of an intolerable monotony if Heredity had been allowed to wield its sceptre unrestrained, as intimated by Henry Drummond.

How to guard against the tremendous evil **Heredity alone** would have introduced and maintained in the world was, therefore, a problem of the greatest magnitude and most vital importance, seeing that the principle of the persistence of Type was as essential to its preservation, as that of the Diversification of Structure was necessary to its evolution to higher and happier states of existence. Heredity was bound to remain operative and conserve established characters because its basis is the memory associated with all forms of mind. To destroy memory in any normally functioning consciousness was out of the question.

Opposed to the principle of Heredity which preserves thru memory, is the element of Adaptation which operates thru judgment. This admitted we have not far to look for the source which introduced sexuality into organic life and with it the variegation of type.

Weismann is correct in saying that "sex is the source of variation", and also in attributing to sexual reproduction the creation of hereditary individual characters, but he has made no attempt to explain how sex can be the source of **variation** as well as of the **persistence** of type which are two radically different principles, each one running counter to and nullifying the other, since that which modifies, cannot preserve. Heredity only **preserves** type, hence it requires an entirely different element to **transform** it.

Materialists have thus recognized the paradoxical fact that thru genital reproduction the diversification of morphological structure is effected even while the new characters thus produced have become permanent and hereditary features, but of the nature of the factor or agents engaged in these processes they have not the slightest conception for the reason that they look for the solution of these problems among exclusively mechanical causes which are as incompetent to throw light on them as an automaton is in explaining an example in geometry.

What, then, is the nature of that which was qualified to introduce sex into organic life in order to insure its highly important diversification of morphological structure for purposes of identification, thereby "making an interesting world of it", as Henry Drummond expressed the idea?

Admitting the facts above stated to be correct, the answer is found in the words themselves, which are all "terms of mind", thereby implying mind in the phenomena and processes under consideration, and since mind and judgment are identical in essence (identical also with consciousness, neither one being conceivable without the other) we may find their explanation in the judgment exercised by the originators of organic life, simple and crude as this primitive judgment unquestionably was, tho all-sufficient to initiate the molecular mechanicisms and physiological processes which resulted in the evolution of the organs of Procreation and thru these in the variegation of morphological structure so essential to transform an otherwise intolerably monotonous existence into the highly variegated and "interesting" world we now live in.

The solution of the paradoxical problem, then: how can sex, which is admittedly the source of variation by diversifying characters of organic structure, also be the factor of Heredity which operates towards the per-

sistence or conservation of type—the first element constantly diverging from the established archetype, and the other converging all characters towards it again, thereby maintaining the unity and integrity of an ever-varying universe, may be found in the **versatility** of the teleo-mechanics of Nature, this being one of the chief attributes of all forms of mind of high or low degree, and must, therefore, also be a feature to a commensurately limited extent of the mind-element conceded by scientists in general to the constituents of so-called "matter".

Admitting the scientific postulate that there is a diversity even in the nature of these ultimate atoms, a union of two or more must necessarily increase this diversity to a corresponding degree, and when they eventually assemble into protoplasmic bodies wherein their innate mind-element is free to operate and can manifest itself exoterically, their intelligence has attained such a degree of versatility that it has been placed by bacteriologists on a par with "the majority of the emotional and intellectual faculties of the higher mammalia".

The physical substratum of this mental versatility is the molecular activity impelled by the dynamic energy resident in all matter and which is governed by its mind-element, both mutually retroacting upon each other, they thereby determining their temporary physical properties on one side and **ever-changing ideations** on the other.

Having thus established the status of the lower forms of mind in Nature and recognized their capacity to judge of what is essential to their own temporary welfare, we must next consider the fact that they could not fail to be aware that two elements were at their immediate and direct disposal which contained all the qualifications for being organized into systems designed both for purposes of reproduction and for variegating organic structure so essential to the fullest enjoyment of life. These elements were the positive and negative attributes of the cosmic energy pervading infinite space, which thru organization have been modified into the male and female forces constituting the active principles of the procreative organs and functions.

Instead, then, of the varied features and interests of the world being due to the blending of the different characteristics of father and mother under the subtle wand of Heredity which never changes characters but

only preserves them, we have to credit the versatile judgment of the minds in "matter" with the variegation of organic structure. Their judgment intuitively perceived the great opportunity to diversify life thru the positive or male, and negative or female elements with which they were permeated, by utilizing them to create an ever varying, hence highly interesting world. This they accomplished by organizing the two opposite elements into systems wherein they could effect a temporary unification, but which terminated again in the separation of the sex-element for further reunions until finally "endless forms most beautiful and most wonderful in their variegation have been and are being evolved". (Darwin.)

While thus engaged in building up all forms of organic life, their own development proceeded apace; their mental horizon continued to expand thru their constantly growing fund of memories, cognitions and ideations which were transmitted from one generation to another by means of the organisms specially designed for that purpose until the sum of these conceptions became individualized in the highest type of organic life—Man.

If, then, the nonentities upon which Materialism is based, namely, Evolution, Necessity and Mechanicism, employ so-called "matter" as their means for accomplishing those ends of which the Organic Kingdom stands as an overtowering and transcendent monument, then may we declare without fear of successful contradiction that these nonentities are under the full control and guidance of an **Infinite Conscious Intelligence.**

PART VII

THE EVOLUTION OF THE HUMAN FAMILY

"THERE IS NO PLACE LIKE HOME"

THE EVOLUTION OF "MOTHER"

CHAPTER 66

"The Most Stupendous Task Evolution Ever Undertook." "The Pinnacle Of The Temple Of Nature." What Organic Nature Accomplished. Why Apes Cannot Evolute Into Man.

Under the title **"The Evolution Of A Human Mother,"** Henry Drummond says on page 267 of "The Ascent of man": "In spite of its half-sacrilegious sound this is a serious study in Biology. Even on its physical side this was the most stupendous task Evolution ever undertook. It began when the first bud burst from the first plant-cell, and was only completed when the last and most elaborately wrought pinnacle of the temple of Nature crowned the animal creation".

To endow the nonentity called "Evolution" with the potency of having undertaken a most stupendous task is a remarkable statement to make by one who places a deistical interpretation on all cosmical phenomena and events. Or was it uttered in a sarcastic vein? That would be but consistent with his Orthodoxy. And in that light we will accept it. The evolvement of a human mother was, indeed, a **stupendous task** to be undertaken by something that **doesn't exist**—ha! ha! ha!

"What was that pinnacle?" he asks. "There is no more instructive question in science. For the answer brings into relief one of the expression-points of Nature —one of those great teleological notes of which the natural order is so full, and of which this is by far the most impressive. Run the eye for a moment up the scale of animal life. At the bottom are the Protozoa. The Coelenterata follow, then in mixed array, the Echinoderms, Worms and Mollusks. Above these come the Fishes, then the Amphibia, then the Reptilia, then the Birds, then—

What? The **Mammals, The Mothers!** There the series stops. Nature has never made anything since."

Never made anything **superior** since, **is**, perhaps, what Drummond meant to say. Anatomically and physiologically, the task the teleo-mechanics of Nature undertook in evolving the fathers of our race was a **mere bagatelle** compared to the evolution of our **Mothers.** In running our eyes up the graduating scale of organic life we may see by what extremely slow degrees these ideal types of "mothers" in the organic world dawned upon them—how slowly they became aware of the safest and most practical mode of reproduction—everything considered; by what infinitesimal stages they learnt to build up these most perfect creations of Organic Nature.

"Is it too much to say," remarks Henry Drummond, "that the one motive of organic Nature was to make Mothers? Ask the Zoologist what, judging from Science alone, Nature aspired to from the first, he could but answer: Mammalia—**Mothers.** In as real a sense as a factory is meant to turn out locomotives or clocks, the machinery of Nature is designed in the last resort to turn out Mothers. You will find mothers in lower nature at every stage of imperfection; you will see attempts made to get at better types; you will find old ideas abandoned and new ones coming to the front. And when you get to the top you will find that the last great act was to present to the world a physiologically perfect type. It is a fact which no human Mother can regard without awe; which no man can realize without a new reverence for woman and a new belief in the higher meaning of Nature, that the goal of the whole plant and animal kingdoms seems to have been the creation of a family which the very naturalist has had to call Mammalia."

All these are strange expressions for one who sees beside Nature "some **One** more, an Infinite **Intelligence,** an **Eternal Will,** i. e., a **God**" in or above these and all other Cosmic phenomena. For the above quoted observations are all literally true—they admit of no misconstruction whatsoever; they carry with them no implications foreign to the ideas expressed. Organic Nature **did** have a motive in her evolvements; **did** aspire to attain higher ends; **did** operate her machinery and mechanicisms for a definite purpose; **did** make attempts to get at better types; **did** abandon old ideas to let higher models take their place; **did consummate the act of**

evolving the grandest of all divisions of the Animal Kingdom—the Mammalia; her goal was the creation of a family superior to all others; her aim and object was centered in producing a physiologically perfect type of Mothers; but ah! why was **Organic Nature** not defined by the learned author of the "Ascent Of Man"? Why were we not informed of its attributes and potentialities —of its constituent elements? "Organic Nature" alone, as a mere phrase employed by scientist and neophyte alike, conveys no information satisfactory to the inquiring mind; it is too vague a term for the world's comprehension. The student of the phenomena of existence wants **Nature itself** analyzed and resolved into its components to let him know the real signification of the term, i. e., what Nature itself is composed of; he wants to know its essence, its properties, its character. He will then be able to judge whether as a cosmic energy **it must be supplemented by a God.**

Drummond's figurative allusion to Organic Nature "turning out Mothers in the same real sense as man turns out clocks and locomotives" is also a very felicitous one and can be taken in its literal signification, in which case the need of postulating an antecedent infinite intelligence still remains an "open question".

Man has no monopoly in designing and constructing clocks and locomotives and other "useful and purposive contrivances". For everything which vibrates, undulates or pulsates in rhythmical cadences in the Cosmos (and what does not to some extent?) is a natural "timepiece," even as everything which moves within celestial space, on land, in sea, or in sky, is a natural locomotive. And what is there in Nature not of some use in her "Economy," i. e., management of cosmic affairs?

But who turns out the finest, the grandest and the most permanent contrivances—man or Nature? If the latter, can we consistently deny her those attributes without which man could not have accomplished anything in the fields of Art, Literature and Science, namely, conscious intelligence? Yet Haeckel, Weismann and other Monists answer this question in the affirmative which is solely based on the totally insufficient ground that a centralized nerve-system is the essential condition of consciousness, the evidence presented by utterly structureless beings to the contrary notwithstanding.

Even as the complex works of Art reached their present state of comparative perfection thru a slowly

growing fund of conceptions, experiences and memories accumulated thruout the ages, so did the atomic, molecular and cellular mind-forces constituting Organic Nature succeed after countless trials and tribulations during which many types of morphological structure were abandoned (as seen in extinct species), and needless or superfluous members discarded (as witnessed in "arrested", atrophied or rudimentary parts) and more practical ones were substituted, in producing the most perfect forms of life known to man—namely, **Human Mothers.**

Those cell-souls or subminds which continue to build up the lower organisms are still mnemonically impressed with the characters of the earlier modes of Reproduction, which impressions constitute in all complex forms the "plans of the hidden artists who with skilled manipulation strive to perfect their work", as Prof. Huxley felicitously expressed it. Knowing, as yet, of no other modes, they are, **a forteriori,** kept in the path thus laid out for them. Neither will any species **below** Man ever get out of their "ruts", that is, they will never be able to reach higher stages of Evolution, because one type has reached the apex and it is imperative to his own existence that all other types are kept in a subordinate relation to him. This answers the common query: Why don't apes evolute into men now? **We've got the upperhand of them and are going to keep it!** Selfish man will not permit any of them to become our equal.

CHAPTER 67

Tyros, Apprentices And Skilled Workmen in Nature's Laboratory.—Grading The Teleo-Mechanics According To Their Capacities And Aptitudes.—"By Their Fruits Shall Ye Know Them".

The passages quoted in last chapter are not to be taken in any metaphorical sense however, as was probably intended by Henry Drummond, for they express the true **modus operandi** of the up-builders of organic structure, the consciously and intelligently acting cell-souls of plant and animal life, in a lucid and comprehensive manner. They illustrate the analogy that obtains between the mind in Nature and the supra-mind of Man, emphasizing in a forcible way the fact that both are intrinsically alike, and in their higher states and phases the result of evolutionary development. Both were primarily of the crudest character; both constantly made

attempts to reach higher planes of existence; both abandoned old ideas when found to be worthless, substituting new ideas in their place; both expanded thru the constant accumulation of new experiences and cognitions, the result of which is seen on one side in the Evolution of the so-called "works of Nature", and on the other hand in the evolvement of the works of Art. In short: both develop with and thru the bodies they build up—one passing thru the same apprenticeship in their respective fields of labor as the other.

Henry Drummond expressed a similar idea in this form on page 264: "The processes of Evolution evolve as well as the products; they evolve with the products. In the Environments they help to create or make available, they find a field for new creations as well as further reinforcements for themselves."

Thus in the development of the **idea** of Maternity as it first "materialized" in its incipiency as a simple bud emerging from a self-generated plant-cell up to its present high state of development in the Motherhood of our Race, after passing thru countless phases of evolution in and thru the intermediate grades of progression, we see by what slow degrees and circumlocutory ways the idea gained prominence, how it became more and more pronounced as it grew in favor with the up-builders of organic life, until it found its culmination and highest expression in the procreative organs and functions of the human mother.

From these viewpoints we may regard those cell-souls which exhibit their maternal instinct only in the bursting forth of a simple bud of the lowliest forms of vegetal life, as mere tyros in the "art" of reproduction; those which are capable of constructing the various forms of flowering plants we may look upon as apprentices in teleo-mechanicism; those which build up the more complex procreative organisms of the lower animals, as well-advanced workmen in the same line of labor, while those who have become qualified to construct the grandest work of all, the **human mothers,** are the virtual and practical **masters** in the "laboratory of Nature."

Yet the most wonderful of all their accomplishments is the fact that the entire sum of ideations expressed in the physiological characters of the human reproductive organisms should be concentrated in mere mnemonical conceptions, memories or images upon a human fecundated cell!

Yet, wonderful as this psychological feat may appear to us, it but shows into what infinitesimal space a multitude of mental impressions may be reduced and condensed. For if each character of plant or animal were not impressed upon the subminds of each sex-cell it would never be able to assert itself in determining the processes of segmentation which result in the development of the organs of reproduction, as well as of nutrition and supra-cerebration.

In the Evolution, then, of the organic kingdom, the Evolution of the teleo-mechanics of Nature is manifested and exemplified. Those who still adhere to imperfect types simply have not had the opportunity to "evolute" up to those higher planes of existence attained by the biological minds of the higher animals. All beneath these in the scale of life are more or less deficient in judgment or lacking in experience; their mental caliber is of a lower order than that of more perfect physiological types. All work in accordance with the "light that is in them", be this in the nature of the "sensation and will of atoms which is naturally of the lowest grade", (according to Haeckel,) and which can, therefore, accomplish nothing more than to assemble into molecules and condense these until they appear as "matter"; or in the form of building up a tree, worm or bird; or in the faculty of constructing the "highest achievements of Nature"—a physically and mentally perfect human mother. Thus all of the teleo-mechanics of Nature may be graded according to their aptitudes and capacities. "By their fruits shall ye know them" is as applicable in the realm of Nature as in the domain of Art.

CHAPTER 68

Motherhood In Lower Life. Utilizing The Principles of Maternity. Its Inception And Development Synchronous With The Appearance Of Organic Life. Love For Offspring Exhibited By The Protozoans. Fundamental Source Of The Affections.

Let us now for a few moments descend the ladder of life until we arrive at its very foot, or rather, at that stage where the teleo-mechanics of Nature conceived in the vaguest and crudest manner the idea of attaining higher planes of existence thru the utilization of the maternal principle, thereby asserting their self-developing tendency as revealed in the evolution of organic life.

Henry Drummond presents this subject in the following form on page 268:

"That care for offspring from which the Mammalia take their name is introduced into Nature in crude forms almost from the dawn of life. In the vegetable kingdom, from the motherlessness of the early Cryptogams, we rise to find a first maternity foreshadowed in the flowering tree. It elaborates a seed or nut or fruit with infinite precaution, surrounding the embryo with coat after coat of protective substance, and storing around it the richest foods for its future existence."

The facts here pointed out show that the preliminary steps towards the evolvement of a true motherhood were taken at that period of the World's history when the teleo-mechanics of the highest then existing types of vegetal organisms first conceived of the methods of Procreation now in vogue, and that they have been modifying and improving upon them ever since. And while thus constantly augmenting their fund of cognitions, experiences, and new ideations, these were carefully preserved and transmitted from one generation to another thru the **Memory** which constitutes the active element of **Mind** in all its phases. In fact they are identical in principle—synonymous terms, since they cannot be dissociated. This memory has its seat in the procreative (sex) cells. In the gradually developing reproductive systems of the various types of organic life, do the evidences of providential design defy every materialistic explanation.

"Crossing into the animal kingdom", says Drummond on page 269, "we observe the same motherless beginning and the same cared-for end. . . As we draw nearer the apex of the animal kingdom, the spectacle of a **protective** maternity looms into view. . . That it does not begin at once; that there is a long and gradual Evolution of Maternity, is clear. . . It is doubtful whether in the invertebrate half of Nature it exists at all. If it does, it is found only exceptionally till we meet the two highest classes."

All of which indicates by what infinitesimal degrees the advantages of building up an organic world thru the agency of the mammalian systems dawned upon the subminds engaged in the developing processes. And that this idea of originating new and better types is as operative in the invertebrate classes as in the Vertebrates, we shall see in the next chapter.

At what precise point Maternity begins is, there-

fore, not difficult to determine. It is synchronous with the very inception of organic life; contemporaneous with the first appearance of sex-distinction. A large percentage of plasmatic cells are endowed with the physiological value of femininity, to which is added, after conjugation, the potentiality of Maternity or Motherhood. If there is any distinction in these two phases of female life, it is one of degree and quality only, and of their modes of expressing themselves. The principles involved are identical. Sex and conjugation have their root in the union of the positive or male, and the negative or female elements of force, both the fatherhood and motherhood principles of the Organic Kingdom being traced to these elements as their essential and ultimate root. And since even single cells exhibit emotions indicative of sexuality which result in cell-division, the crudest form of motherhood, we cannot exclude its elements from the domains of the lowest orders of organic life. This admitted, what living thing is there without a mother, or without a mother's care commensurate with its lowly state?

CHAPTER 69

First Appearance Of "Mother-Love" On Earth. The Difference Between The Animal's And The Human Mother's Mode Of Expressing Love For Offspring. The "Instinct" Of Animals The Voice Of Their Subconsciousness.

The early World, then, was for millions of years anything but a "bleak and loveless world". It was anything but a world without mothers or without child. The only difference between the **Then** and the **Now** was that the element of Love had not yet become intensified, it still existing in an undeveloped state among the simplest cells and groups of plastidules which constitute the connecting link between the inorganic and organic worlds, tho the germs of Love had their abode, as we have seen, in the atomic and molecular components of so-called "matter" which in its last analysis is reducible to sentient force with its attributes of consciousness still in an elementary form, as has been explained in other chapters.

Hence Nature is not as heartless as Henry Drummond has, perhaps inadvertently, pictured her to be, "until the better class of mothers arrived"—to paraphrase his words.

A remarkable manifestation of mother-love characteristic of the subminds of the lower types is the care they bestow upon their eggs without ever beholding the mature offspring. Instances of these cases are mentioned by Drummond in these words on page 270:

"The rule is not that the Mother ignores, but that she never sees her child. . . The burying-beetles deposit their fragile capsules in the dead carcase of a mouse or a bird, plant all together in the earth, and leave them to their fate. Myriads of other creatures are born into the world and ordained so to be born, whose mothers are dead before they begin to live. These are not cases, nevertheless, where there has been no care. On the contrary, there is a solicitude for the egg of the most extreme kind—for its being placed exactly in the right spot, at the right time, protected from the weather, shielded from enemies, and provided with a first supply of food".

In what more emphatic manner can a mother's love express itself? What more can a human mother do for her child? Instead, then, of there being an essential difference between Maternity and Motherhood, as Drummond declares in the same paragraph, do these instances not show that the analogy between the love of offspring in the lowest and highest ranges of organic life is complete, the only difference being in its modes of manifestation?

After citing the case of the butterfly which places its eggs on the underside of the leaf which the coming caterpillar likes the most—indicating exquisite judgment and awareness of the presence of enemies, as well as an anticipation of its offspring's wants, Drummond states that "this case illustrates in a palpable way the essential difference between Motherhood and Maternity. Maternity here, in the restricted sense of merely adequate physical care, is carried to its utmost perfection. Everything that can be done for the egg is done. Motherhood, on the other hand, is still non-existent, is even an anatomical impossibility, for if a butterfly could live until its egg was hatched—which does not happen—it would see no butterfly come out of its egg, no airy likeness of itself, but an earth-bound caterpillar. If it recognized this creature as its child, it could never play the mother to it."

But nevertheless their love of offspring achieved, as far as lay in their limited power, all a higher being's motherhood or mother's love could have accomplished,

so where is the difference after all? First selecting those leaves which they know will afford their progeny the most nutriment, and then fastening them on the under side of these leaves that they may escape the notice of marauders, what more could a human mother's love have done under the same circumstances? If Drummond considered Motherhood identical with Mother-love, tho he could see "an essential difference between Motherhood and Maternity", then are these "airy creatures" certainly neither deficient in the former quality, nor derelict in their maternal duties altho they "never were able to recognize the homely larvae as their offspring". It seemed that they did, nevertheless. And here it should be noted that their cognitions do not hold Haeckel out in his contention that a centralized nerve system or complex brain is the essential condition of consciousness, for is cognition not an act of consciousness? And of such system these insects are totally devoid.

And may they not be aware of the "gems of purest ray serene" that lie snugly ensconsed within the uninviting exterior of their larvae only awaiting their time when they may appear in all their glory after the "hidden artists", their cell-souls, have completed their work of unfolding? Must laborers who operate along certain lines in accordance with certain plans laid out for them not necessarily be conscious of all they perform? If so, then are the subminds of all plants and animals fully cognizant of all their activities, and this admitted, "the obscurity and confusion still prevailing in these momentous problems of Science and Philosophy" (quoting Haeckel) vanish as mist before the rising sun.

One distinction, however, must here be noted between the Motherhood of the lowest and of the highest types of organic life. It is of a two-fold nature, and consists, first, in the brute mother's love having its basis in her subconsciousness, while the human mother's love has its seat both in her sub- and supra-minds, and secondly, in that the brute's affection is an exclusively inherited trait, while the human mother's love is both of a transmitted and of an acquired character—transmitted by Heredity on one side, and acquired thru educational influences on the other. Artificial development of altruistic virtues is denied to the cell-souls, but thru the cultivation of the supra-mental faculties was the element of Mother-love enabled to reach its present exaltation in the human Mother.

What we call the instincts of plants and animals pertaining to their functions of reproduction and care of young is the result of the promptings of their subminds which suggest to their supra-element (still existing in a diffused state in plants) thru certain modes of mind-transference how to proceed in these matters. These suggestions are in a great measure stifled within us owing to their having been supplanted by artificial means—"instinct" having thus died within us thru disuse even as physical members will become atrophied from same causes tho their vestiges may remain. This also accounts for us having become oblivious to the existence of our myriads of conscious cell-souls the sum of which constitutes our biological minds.

CHAPTER 70

The Four Great Changes Essential To The Transition From a Crude To a Sublime Motherhood. Drummond Defines His Position. His Confession Of Faith. Sees In Nature "God's Writing". The Prodigious, Yet Providential Fertility Of The Lowest Orders Of Life. Why It Was Reduced In The Highest.

That the crudeness and inadequacy of the primitive methods of Reproduction gradually dawned upon the biological minds, and how those of a few advanced species of vertebrates existing during the early paleontological history of the Earth proceeded in devising improved methods of Procreation for the mothers of their race, is presented by Henry Drummond in these passages selected from pages 272 and 273 of his volume:

"Now before Maternal Love can be evolved out of this first care for offspring; before Love can be made a necessity and carried past the unhatched egg to the living thing, Nature must alter all her ways. Four great changes at least must be introduced into her program. In the first place she must cause fewer young to be produced at a birth. In the second place she must produce these young in such outward form that their mother will recognize them. In the third place, instead of producing them in such physical perfection that they are able to get out into life the moment they are born, she must make them helpless, so that for a time they must dwell with her if they are to live at all. And fourthly it is required that she should dwell with them; that in some way they should be made physically necessary to her to compel her to attend them. All these beautiful ar-

rangements we find carried out to the last detail."

Note the felicitous style in which the **theist,** Drummond, refers to "**Nature**" as deliberately planning to create a physically, mentally and morally perfect race of beings, directly resorting to every conceivable device to render them fit for a happy home life, making ingenious alterations in their morphological structure here, or adding some new purposive contrivance there, yet nowhere has he in plain words credited Nature with the essential mental qualifications to carry out these plans; nowhere has he expressed an opinion of her attributes and capacities; nowhere has he intimated whether they are of high or of low degree. Simply stating facts as they had come under his observation, and commenting on them in his own inimitable way, he allowed his readers to draw their own conclusions therefrom. Only in his last chapter (on page 324) does he reveal his position in these words: "And what is that in which things live and move and have their being? It is Nature, the world, the cosmos—and something more, some **One** more, an **Infinite** Intelligence and an Eternal Will . . ." And on pages 333-5: "Nature is God's writing, and can only tell the truth . . . . By the accumulation of irresistible evidence we are driven to accept Evolution as God's method of creation . . . The reason why men grudge to Evolution its claims to show how things are made, is the groundless fear that if we discover how they were made we minimize their divinity—**as if our ignorance of the nature of a thing were the stamp of its divinity!!!** Positively, the idea of an **Immanent God,** which is the **God of** Evolution, is infinitely grander than the occasional wonder-worker who is the God of an old theology. And as to facts, the daily miracle of a flower, the courses of the stars, the upholding and sustaining day by day of this great palpitating world, need a **Living Will** as much as the creation of matter at the first. . . Evolution is not progress in matter. It is progress in spirit or in mind."

It is the **Evolution** of the **Mind** in **Nature.** Upon this point too much emphasis cannot be placed for an adequate comprehension of the phenomena of the Cosmos. Even as in the development of the Arts, it is not the inorganic matter that evolves into complex structures, but the ingenuity of the teleo-mechanics which designed and constructed them. In like manner did the minds in Nature evolve with and thru the organisms they built up, preserving every gain made by experience and the exercise of their judgment, storing these organic gains in

the conscious memories of their reproductive cells for the benefit and advancement of their progeny. Thus was the expansion of their mental horizon effected.

Continuing, Drummond says: "Whatever controversy rages as to the factors of Evolution, whatever mystery enshrouds its steps, no doubt exists of its goal. The great landmarks we have passed (and we are not yet half-way up the Ascent) each separately and all together have declared the course of Nature to be a rational one, and its end a moral end. . . And though what we call Evil dogged each step with sinister and sometimes with staggering malevolence, the balance when struck, was always good upon the whole. For then comes the last great act of Teleology—the organization of the Mammalia, the **Kingdom** of the **Mothers**. So full of ethical possibility is this single creation, that one might stake the object and character of Evolution on the Mammalia alone. On the biological side it means the Evolution of Mothers, on the sociological side the Evolution of the Family, and on the moral side the Evolution of Love. How are we to characterize a process that ripened fruits like these?"

These wonderful achievements Materialism attributes to blind mechanical agencies and physico-chemical reactions, again exemplifying the saying that "It is but one step from the sublime to the ridiculous."

Resuming, Drummond says: "Let us note the way in which woman, savage woman, became caretaker, and watcher, and nurse, and passed from femaleness to the higher lights of Motherhood. As we have seen, nearly all the lower animals produce scores, or hundreds, or thousands, or millions of young at one birth. Now no mother can love a million. Clearly, if Nature wishes to make caretakers she must moderate her demands. And so she reduces the number until so few remain that Motherhood becomes a possibility. . . In the highest of Mammals the rule is one. This bringing down of the numbers is a remarkable circumstance. It means the calling in of a diffused care to focus it upon one, and concentrate it into Love."

The above circumstance of reducing the number of births at one time from a million to a single one is a forcible example of the Prescience and judgment exercised by the subminds in the Evolution of Man and shows the high degree of intelligence they have reciprocally attained thereby. The **rationale** of this procedure from a physiological and teleological viewpoint was the grad-

ual reduction of the fertility of organic life in the inverse ratio to its advancement in the scale of Evolution. But we should, nevertheless, not lose sight of the extreme necessity that has always existed and still exists for the prodigious fecundity of the simplest forms of life which is found in the slight chances these beings have of surviving in their fierce struggle for existence, so that but for their having been endowed with extraordinary fertility, organic life would have become extinct soon after its inception and with it all possibility of its developing into higher forms of life. For the same reason the fecundity of the highest organisms had to be reduced lest they would have exterminated all beneath them which would have eventuated in their own extinction. Yet in all these provident ordinations Materialism can see nothing but purely physical processess, blind mechanical agencies and the fortuitous concatenation of circumstances called "Natural Selection" which has no existence except in learned men's brains.

CHAPTER 71

THE BIOLOGICAL LAW FOR PRESERVING THE EQUILIBRIUM OF THE ORGANIC KINGDOM. PRESCIENCE IN COMPLEXITY OF FEMININE ORGANS OF PROCREATION. TRANSFORMING EMBRYOS INTO THINGS OF BEAUTY AND A JOY FOREVER. THE PITHECANTHROPUS-ERECTUS STAGE OF EVOLUTION. A PROPHECY OF THE COMING RACE.

Now since the means of offence and defence devised for the preservation of the weaker species in the Struggle for Existence increased their chances of survival which would result in the discomfiture of others again, the necessity for lowering their reproductive capacities presented itself, hence it became imperative that these functions should be so regulated in the various species as to give the least fitted ones an equal chance to survive. Thus was the biological law established that *"the reproductive capacities of any given species are reduced in the inverse ratio to its increased opportunities for surviving in its struggles for existence,"* for unless its constantly improving conditions were held in check by counter-acting agencies it would soon get the upperhand of less favored species which would deprive it eventually of its own means of subsistence. This law so operated that our race, with its high mental faculties and superior physical attainments (acquired by virtue of its erect attitude), finds its procreative powers curtailed to

the lowest degree consistent with insuring its own survival.

This provident arrangement was carried out by so complicating the feminine system of Procreation as to reduce its capacities to a minimum. No check was placed on the masculine members, these in their simplicity of anatomical structure being but an amplification of the primarily crude method of effecting the juncture of the male and female elements, hence unless their capacities were restrained by the complex female organism the fertility of our race would ere long exceed all reasonable bounds, resulting in the annihilation of the lower orders of life, and consequently in our own extinction. In the extreme complexity, then, of the female Procreative system was found the solution of the problem which constitutes the first stage in the Evolution of the human mother, of which Drummond said that "Nature was compelled to so alter her organization that she must cause fewer young to be produced at a birth."

Of the second stage he says on page 274: "The next thing was to make it possible for the parent to recognize its young. If it was difficult to love a million, it was impossible to love an embryo. In the lower reaches the young are never in the smallest degree like their parents. . . In the higher groups their unlikeness is often as decided. The larval forms of the Starfish, or the Sea-Urchin are disguised past all recognition, and among the insects the relation between butterflies and moths and their caterpillars is beyond any possible clue."

In these cases, where parent and offspring do not resemble each other, their subminds had not recognized the advantage such similarity would be to them in their struggles for existence, but it gradually dawned upon their comprehension during the course of many generations until eventually the offspring presented at birth the characteristic features of their genitors.

Drummond's version is as follows: "The means taken to make the young resemble the parents are worth noting. Nature always makes her changes with a marvelous economy, and generally, as in this case, with startling simplicity. To start making an entirely new embryo was not thought of. (So the nondescript "*Nature*" thinks! H.W.) That would be to lose all the time spent on them already. If Nature begins a thing and wishes to make a change (!) she never goes back to the beginning in order to start de novo. Her respect for her own work is profound.

"All that she did was to keep them hidden till they grew more presentable. Instead of saying: 'Let us re-

create these little things', she passed the word: 'Let us delay them until they are fair to see.' And from the day that word was passed, the embryos were hindered in the eggs, and the young were hindered in the body, retained in the dark for weeks and months so that when first they caught the mother's eye they were 'strong and of a good liking.'"

In these graphically described facts we may see that the subminds of the Mammalia recognized the necessity of consuming more time in the development of offspring in order to make them presentable at birth and a delight to their doting parents.

On page 276 we find the following passage: "These illustrations are adduced to confirm the impression that Nature is not working aimlessly, not even mysteriously, but in a specific direction; that somehow the idea of *Mothers* is in her mind, and that she is trying to draw closer and closer the bonds which are to unite the children of men."

The idea of Mothers was in the minds of the up-builders of organic life ever since the first bud burst out of limb or shrub or tree,—the principle of motherhood is therein found in its incipiency, but we have now arrived at that epoch in the history of the evolution of the human mothers when the cell-souls of the semi-human Mammals, say of the female Pithecanthropus, were engaged in so perfecting their crude organisms as to render them physically and mentally superior to all other beings to enable them to survive in the struggles of life.

Only under abnormal or adverse conditions do the cell-souls deviate from their regularly trodden paths that were laid out for them by their predecessors—the subminds of the former generations in their line of descent. The perfection of their work is seen in the human mother and her infant; the latter converted from its pristine "larval ugliness" into a "thing of beauty and a joy forever"—a prophecy of all that is (or will be) good and noble in the race.

CHAPTER 72

THE TELEO-ETHICAL SIGNIFICANCE OF LACTATION IN THE EVOLUTION OF THE HUMAN MOTHER. THE TRANSPOSITION OF THE ORGANS OF NUTRITION PROOF-POSITIVE OF DESIGN.

Of the third phase in the evolvement of the human mother, i. e., that pertaining to the nutrition of her in-

fant, Henry Drummond says on pages 276 to 279: "If the second process in the Evolution of Motherhood was of minor importance, the necessity for the third will not be doubted. If the mother is to be taught to know her progeny, surely the progeny must be taught not to abandon their mother. And hence Nature had to set about a somewhat novel task—to teach the youth of the world the Fifth Commandment. . . . This Commandment was thrust upon the early world under penalties for disobedience the most exacting—the penalty of death."

This penalty, the child, driven by hunger, was not at all liable to incur. By tightening the bonds which drew child to parent, and parent to child thru sheer physiological necessity, the evolution of both was propitiated.

"Nature's object," explains Drummond, "is ethical as well as physiological, and though when we look below the surface, a purely physiological explanation will appear, the ethical gain is not less clear. . . . New words must come into the world—Home, Love, Mother. These are the inevitable preliminaries of the domestication of the Human Race".

In the physiological processes attending the evolution of the principal distinguishing feature of the Mammalia, the organs of lactation, we see the teleo-mechanics of these highest orders at work aiming to produce these ethical results from the same motive which prompts the artisan to execute his manual labor, i. e., to improve his condition in life, the result being the evolution of the various arts.

"For observe what has happened," continues Henry Drummond. "A generation has grown up to whom this tie between parent and offspring has become the necessity of existence. Every mammalian child born into the world must come to be fed, must, for a given number of hours each day, be in the maternal school and whether it likes it or not, learn its lessons. No young of any Mammal can nourish itself. There is that in the offspring at this stage which compels it to seek its mother, and there is that in the mother which compels her even physically—and this is the fourth process—to seek her child. On the physiological side the name of this impelling power is lactation; on the ethical side it is called Love. Break this new bond between mother and child, and the Mammalia become extinct. Nature is in earnest here if anywhere. The training of Humanity is seen to be under a compulsory education act."

By the mother being compelled to seek her child, D.,

no doubt, means that if she refuses to nurse her infant, "caking" of her breasts may ensue with fatal results.

But let us dwell on this phase of the evolution of the human race a moment longer. Consider, first of all, the bond between mother and child—lactation—both in its physical, ethical and teleological aspects; consider the prescience, the promptitude, the mathematical precision with which the processes of gestation and of lactation proceed synchronously in chronological order—the sustenance for the child being ready the ***moment it is born*** and ***not before***, since this would prove fatal to the mother. See how the child has become a necessity to the mother, and the mother a necessity to the child; consider with what exquisite judgment the lives of both have been so interwoven by these reciprocating needs that they have become the source of the most exalting of all virtues: filial affection and obedience on one side, and parental love and discipline on the other; consider all these things in their far-reaching results, and may we then not exclaim with Haeckel when in a moment of inspiration the Truth flashed upon him: "On this point alone, more than in any other, does supernormal causation mock and defy every materialistic explanation!"

Turn your mental gaze on the lives of birds, reptiles, fish, worms and other animals beneath them and their progeny; note how the latter are almost left to take care of themselves; then compare their state with that of the Mammals, and you will realize that only thru the principle of lactation, which for a given length of time mutually binds mother and child by almost indissoluble ties, could the mental and moral elevation of mankind be effected! No prescience, no Providence, no pre-ordination in all these arrangements? Nothing but purely physical processes, blind mechanical agencies or physico-chemical reactions?

Continuing, Henry Drummond says on page 281: "No greater day ever dawned for Evolution than this on which the first human child was born. For there entered then into the world the one thing wanting to complete the Ascent of Man—a tutor for the affections! It may be that a Mother teaches a child, but in a far deeper sense it is the child who teaches the mother. Millions of Mothers had lived before this, but the higher affections were unborn. Tenderness, gentleness, unselfishness, love, care, self-sacrifice—these as yet were not, or were only in the bud. Maternity existed in humble forms, but not yet Motherhood. To create Motherhood and all that enshrines itself

in that holy word, required a human child. The creation of the Mammalia established two schools of Ethics in the world—the one for the child who must now at least know and obey its mother, and the other for the mother who must as certainly attend to her child".

There never was a first human child any more than there was a first mammal, a first bird or a first fish. There were first protoplasmic cells as soon as terrestrial conditions permitted the assembling of certain elements into organic matter out of which its cell-souls subsequently evolved vegetal and animal forms of all kinds, but only by such slow degrees as to obliterate all distinctions that could warrant the designation of any one of them as "first evolved" or "first born."

But with the conception of the lacteal idea by the cell-souls of the highest then existing Pre-mammalia, and their cognition of its superiority over all others relating to nutrition and reproduction, (which ideas were not thoughts like our own, but only vague and undefined impressions) the Mammalia had their inception, and with the "materialization" of these impressions into the inimitable lacteal glands, (tho untold generations of cell-souls contributed to their evolvement,) one of their grandest achievements was attained—the progression of organic life from truly altruistic foundations had now received its most elevating impulse in its entire history.

An equally significant circumstance connected with the evolvement of the lacteal glands is their gradual transposition from the posterior area of the lower Mammalia, (where they are most conveniently located for their young,) to an upper locality in the human mother, where, owing to her erect attitude, or sitting posture (as the case may be) they are alone within reach of her child. Reflect for one moment on "the horror of the situation" for both nursing mother and her infant if such transposition had not taken place—if her "breasts" had been allowed to remain where we find them in the Quadrumana, and where they would have been totally inaccessable to her babe, and then say if you can without grossly violating your better judgment that these transformations of morphological structure which were necessarily effected contemporaneously with other anatomical modifications essential to her acquiring an erect attitude, that is, the most perfect of all organic types, that all these marvelous co-adaptations to new conditions were brought about without the exercise of judgment and other potentialities infinitely transcending our own!

CHAPTER 73

THE SCHOOL OF ETHICS. COMPULSORY EDUCATION ACTS. WHY DEVELOPMENT WAS RETARDED IN HUMAN INFANTS. ARE NEW-BORN INFANTS UNCONSCIOUS? THE SUBLIMITY OF MOTHER-LOVE. OUR MOTHERS RAISED MAN ABOVE THE BRUTE CREATION.

Referring to what Henry Drummond called the *School of Ethics* which was established soon after the lacteal idea had gained prominence in the cell-souls of our Pre-mammalian fore-mothers, and which idea gradually resulted (in connection with the collateral modifications of structure) in the "crowning glory of the Organic Kingdom", he says on pages 281 and 282: "The only thing that remains now is to secure that mother and child shall both be kept in that (home) school as long as it is possible to detain them."

In other words: a course of discipline had now to be devised and introduced thru which both parent and infant had to pass in order to develop their latent moral faculties so essential to the elevation of man, and this could only be effected by certain "compulsory education acts", as we shall presently see.

"The next effort of Evolution, then", continues Drummond," is to lengthen out these school-days to give affection time to grow." To credit a nonentity with the capacity to make an effort is a strange proposition to make by one who has the literary and scientific attainments of the author of *The Ascent of Man*. It reminds us of Canon Kingsley's words: "Where there is an Evolution, there must be an Evolver", hence it would have been correct to say: "The next effort of the *Evolver*(s) of Evolution" etc.

How these proceeded during the fourth stage in the evolution of the human mother, which may be described as a course of discipline ordained "to give affection time to grow" is thus related by Henry Drummond: "No animal except Man was permitted to have his education thus prolonged. Many creatures were allowed to stay at school for a few days or weeks, but to one only was given a curriculum complete enough to accomplish its exalted end. Watch two of the highest organisms during their earliest youth and observe the striking contrast in the time they are made to remain at their mother's side. The first is a human infant; the second, born, let us suppose, on the same day, is a baby monkey. In a few days or weeks the baby monkey is almost able to leave its mother. Already

it can climb and eat and chatter like its parents; and in a few weeks more the creature is as independent of them as the winged seed is of the parent tree. Meantime, and for many months to come, its little human twin is unable to feed itself, or clothe itself, or protect itself; it is a mere semi-unconscious chattel, a sprawling ball of helplessness, the world's one type of impotence. The body is there in all its parts, bone for bone, muscle for muscle, like the other. But somehow this body will not do its work. Something yet hangs fire. The body has eyes, but they see not, limbs but they walk not".

An infant can distinguish its mother from a stranger when it is a few days old, and a noise will awaken it from its slumbers soon after it is born. These facts disprove Haeckel's contention on page 185 of ***World Riddles*** that "everybody knows the new-born infant has no consciousness". Is it not equipped with a central nerve-system which he regards as the essential condition of consciousness? And is each one of its cell-souls not tingling with life and emotion—evidence that they are endowed with the same psychic faculty? Is a soul conceivable without consciousness?

The fact is, its subconsciousness is intensely vivid during its entire pre-natal life which commenced as a single fertilized cell, this mind being revealed in activities which Huxley has likened to those of "a hidden artist who with his plans before him strives with skilled manipulation to perfect his work", as we have seen, and could such work be performed unconsciously, without the artist being cognizant of what he or it was doing? And that even the new-born infant's supra-mind is active is seen in its seeking its mother's breast soon after its birth, evidence that it is not only conscious of the sense of hunger, but also knows where to appease it.

"This body", resumes Drummond, "is a failure. Why does the human infant lie like a log on its forest-bed while its nimble prototype mocks it from the bough above?" —The advantage of retarding the development of the human infant's faculties for the purpose of giving the filial and parental affections time to develop, had dawned upon the subconscious minds of our predecessors and determined the physiological processes thru which the objects intimated by Drummond could be consummated and the main stem of the genealogical tree of Life attain its highest altitude. By thus delaying the development of the human infant's brain thru which it was forced to remain by its mother's side, it was subjected to a course of

mental and moral discipline it could never have received under the conditions attending the rapid development of the monkey's brain.

Drummond concludes his chapter on "The Evolution Of The Human Mother" with the following pathetic peroration: "See then what the Savage Mother and her Babe have brought into the world. When the first Mother awoke to her first tenderness and warmed her loneliness at her infant's love, when for a moment she forgot herself and thought upon its weakness or its pain; when by the most imperceptible sign or act or look of sympathy she expressed the unutterable impulse of her Motherhood, the touch of a new creative hand was felt upon the world. However short the earliest infancies, however feeble the sparks they fanned, however long Heredity took to gather fuel for a steady flame, it is certain that once this fire began to warm the cold hearth of Nature and give Humanity a heart, the most stupendous task of the past was accomplished. A softened pressure of an uncouth hand, a human gleam in an almost animal eye, an endearment in an inarticulate voice—feeble things enough. Yet in these faint awakenings lay the hope of the human race. 'From of old we have heard the monition: 'Except ye be as babes ye cannot enter the Kingdom of Heaven'; the latest science now shows us—though in a very different sense of the words—that unless we had been as babes the ethical phenomena which gave all its significance to the phrase 'Kingdom of Heaven' would have been non-existent for us. Without the circumstances of Infancy, we might have become formidable among animals through sheer force of sharp-wittedness; but we should never have comprehended the meaning of such phrases as self-sacrifice or devotion. The phenomena of social life would have been omitted from the history of the world, and with them the phenomena of ethics and religion.'" *

Viewed from teleo-mechanical premises—to the subconscious minds of the Mothers of our race, to their hitherto unknown or unrecognized cell-souls in which all virtues have their root, may all be traced that distinguishes man from the lower animals. To our Mothers' subconsciousness was allotted the task of developing within us the germs of honor, gentleness, affection, charity, gratitude, self-sacrifice, patience, forbearance and other moral excellencies; it was the intuitive perception of their sublime, inward consciousness which conceived of and evolved that most transcendent of all human attributes, *Mother-*

*Fiske, Cosmic Philosophy, Vol. II, p. 363.

love. It was our Mothers who raised Man above the brute creation!

Only under a human Mother's loving care could Man's noblest character be developed and a pure and unselfish happiness be realized.

Verily, the debt Humanity owes to ***Mother-love***, that grandest achievement of the teleo-mechanics of Nature, is incalculable.

PART VIII

THE EVOLUTION OF THE HUMAN FATHER

CHAPTER 74

WANTED: A HEAD FOR THE HOUSE OF MAN. STILL WANDERS THE FOREST A SAVAGE AND UNBLESSED SOUL. ADAPTING THE FATHER TO A PHYSICALLY PERFECT TYPE OF MOTHER.

We will now turn our attention to the male line of human ascent to see how the cell-souls of our primogenitors proceeded to turn out suitable mates for the mothers of our race—noting what measures had to be taken to transform the descendants of the wild and roving ape-men of the ***Pithecanthropus-erectus*** type into docile stay-at-home-bodies and adapt them physically, mentally and morally to an ideal family-life.

It must be evident from anatomical premises that the obstacles encountered here were not of as formidable a character as those that had to be met on the maternal side of the house. Hence this part of our subject can be presented in a much briefer space, to facilitate which, we will, with the kind permission of its publishers, James Pott & Co., New York, select from Henry Drummond's excellent work ***"The Ascent Of Man"*** some of the material upon which our argument is based.

In introducing the topic under heading ***"The Evo-***

lution of A Father", Mr. D. says, "In last chapter we watched the beautiful experiment of Nature making Mothers. We saw how the young produced at one birth were gradually reduced in number until it was possible for Affection to concentrate upon a single object; how that object was delayed in birth till it was a likeable and presentable thing; how it was tied to its mother's side by physical bonds to give time for the mother's care to ripen into love. . . But there was still a crowning work to accomplish. The world was now beginning to fill with Mothers, but there were no Fathers. During all this long process the Father has not even been named. He has gone his own way; lived outside of all these changes; and while Nature has succeeded in moulding a human Mother and a human child, he still wanders in the forest a savage and unblessed soul".

But he was nevertheless not neglected by his subminds, for while on the feminine side of the *House of Man* her cell-souls are engaged in building up a perfect type of Motherhood, his are equally at work in trying to evolve a character worthy of his mate. To speak more practically, and taking a physiological view of things: whatever modifications were essential to make a physically perfect Mother, furnished to his subminds the cue to the mode of procedure to adapt the male organism to her improved system. This tendency to a mutual co-adaptation exists equally on the female side of the line. In these reciprocal adjustments of anatomical and physiological conditions we cannot fail to recognize the exquisite judgment of the up-builders of organic life, and that on this point, as well as in many correlated ones, "supernormal foresight defies every materialistic explanation", paraphrasing Haeckel's words on page 392 of the "Evolution of Man."

In nothing is the prescience and beneficence of the subminds more apparent than in the fact that the moment after conception, work is commenced on preparing the nourishment for the child, which work is completed immediately after its birth, and not before. The same prevision is manifested by the subminds of the lower mammals. In fact we may say that the adjustments of anatomical structure to the existing conditions of their animate and inanimate environs is one of the most important and characteristic features of all forms of organic life, and more than in any other manner furnishes evidence that the physiological processes connected therewith are under intelligent supervision.

The principles involved are embodied in the Law of

Adaptation which governs individual as well as cosmic affairs, and may, therefore, be regarded as the most important one in the Universe—a law to which all others are subservient. Both organic and inorganic teleo-mechanics (i. e., the mind-forces resident in co-called "matter") are the potent executors of this law.

From these premises it is evident that the evolution of the human father proceeded *pari passu* with the evolution of the human mother. How could it be otherwise with *Intelligence* governing the developing processes on both sides of the "House of Man"? Conversely: what progress would the Materialist's array of nonentities: Natural Selection, blind mechanical agencies and purely physical processes have made in the evolvement of the human family? What Monist can explain how or by what means they proceeded in their work? Can such "products of learned men's brains" do *physical* work?! And what but such work is involved in all processes of cell-formation?

CHAPTER 75

AS A BREAD-WINNER MAN WAS A SUCCESS FROM THE START. THE INSTINCT OF PATERNITY AMONG VERTEBRATES AND INVERTEBRATES. CAN NONDESCRIPTS AND NONENTITIES DIRECT PROCESSES OF EVOLUTION?

Continuing his subject, Henry Drummond says: "This time for him (while roving in the forest a wild and savage soul) is not lost nevertheless. In his own way he is also at school and learning lessons which will one day be equally needed by humanity. The acquisitions of the manly life are as necessary to human character as the virtues which gather their sweetness by the cradle; and these robuster elements—strength, courage, manliness, endurance, self-reliance—could only have been secured away from domestic cares. . . . With his original habits he would squander the inherited gains as fast as he received them, and unless some change was made in his mode of life, the old wild blood in his veins would counteract the gentler influence and leave all the Mother's work in vain. Hence Nature had to set about another long and difficult process—to make the savage Father a reformed character".

If at this stage of the evolution of Man his domestic virtues were still in *embryo*, his "instincts" as a "bread-winner" had already fully asserted themselves, as explained in next paragraph in these words: "If Maternity was at a feeble level in the lower reaches of Na-

ture, Paternity was non-existent. Among a few invertebrates the male parent took a passing share in the care of the egg, but it is not until we are all but at the top that fatherly interest finds any real expression. Among the birds, the parents unite together in most cases to build the nest, the Father doing the rough work of bringing in moss and twigs, while the more trusty mother does the actual work. When the eggs are laid, the male parent also takes his turn at incubation, supplies food and protection, and lingers around the place to defend the fledglings to the last."

In the "instinctive" acts cited above, we may recognize the suggestions of the subminds of the Invertebrates and higher animals to their supra-minds to transact the labor necessary for the safety of their prospective young, for in what other way could they have acquired the knowledge to do all these things? These suggestions are telepathically communicated in a sort of figurative language representing the objects to be attained—a kind of mental imagery transmitted to their supra-consciousness.

Referring to the fact that among the Mammals some fathers are not only indifferent to their young, but even hostile to a degree that compels the mother to hide them from him lest he eats them, Mr. Drummond adds: "If the love of the father for child was in this backward state, infinitely more grave was the condition between him and the Mother. Probably we have taken it for granted that they have always loved one another, yet up to this time we have not been able even to record its existence. The finished results of Evolution appear so natural to us, looking back from this late day, that we continually ignore the difficulties it had to meet, and forget how every single step in progress from the lowest to the highest had to be carried at the bayonet's point. The most informed Naturalist probably has never given Nature credit for a thousandth part of the work she has done; nor has he succeeded in presenting to his mind more than a surface outline."

Evolution being a nonentity, and Nature a nondescript—lexicographers referring to it only in terms of matter and force which are analyzable into distinct elements each one of which is foreign to what is called "Nature"—how can we credit these two nonentities with even an infinitesimal fraction of the work that had to be done to guide a single spontaneously evolved cellule thru the physiological processes attending the initiatory labors resulting in the up-building of organic life?

Aside from these considerations, Drummond takes an

altogether too gloomy view of the relations existing between the sexes at this period in the evolution of the human father. So far from "the condition between him and the mother of his children being very grave", the facts of Natural History do not hold him out in this. Assisting his consort in building habitations for their young; "skirmishing around" to provide food for them; sleeping outside or on top of his domicile with one eye open like a sentinel guarding his treasures, and doing numerous other "stunts" to ingratiate himself in their affections such as fighting for them "to the death" if need be, does not look as tho his paternal instincts were at a low ebb, or that he was possessed of a "savage and unblessed soul". Savage, yes, but did not his very solicitude for his family's welfare make him so? That was but incidental to his struggles for existence. If there was any "gravity" in their connubial relations it could have its source only in their cohabitation being broken by mating-seasons. Of this evil their subconscious minds soon became aware, and how they proceeded to abolish it will be explained further on.

CHAPTER 76

THE SOURCE OF CONJUGAL LOVE. "FIERCEST PASSIONS EXEMPLIFIED IN THE RELATIONS OF THE ELEMENTS." PSYCHIC AFFINITY EXALTED THRU ORGANISM. CONNUBIAL FELICITY. EDISON'S RECOGNITION OF MIND IN MATTER. MRS. JULIA SEATON SEARS' VIEW.

Regarding Drummond's statement that no love between father and mother had made its appearance up to this time, would ask: What was it that drew the sexes together up to that time? No one supposes there was much Platonic love lost between the sexes of the lower ranges of life, nor even among Primitive men and women. If conjugal love did not exist, what made them fathers and mothers? If such love was almost unknown to our race during prehistoric times, as he states on page 295, why should it manifest itself so strongly in all Mammals and even among birds? Yes, even among inorganic bodies, as conceded by Haeckel in the following significant statement on page 224 of *World Riddles:*

"The different relations of the various elements towards each other which chemistry calls *'affinity'*, is one of the most important properties of ponderable matter. It is manifested in the intensity of its consummation. Every shade of inclination, from complete indifference to the fiercest passion is exemplified in the chemi-

cal relation of the various elements towards each other just as we find in the psychology of man and especially in the life of the sexes. Goethe in his classical romance, '*Affinity*,' compared the relations of a pair of lovers with the phenomenon of the same name in the formation of chemical combinations. The irresistible passion that draws Edward to the sympathetic Ottilia and leaps over all bounds of reason and morality, is the same powerful attractive force which impels the living spermatozoan to force an entrance into the ovum in the fertilization of the egg of the animal or the plant—the same impetuous movement which unites two atoms of hydrogen to one atom of oxygen for the formation of a molecule of water. This fundamental *unity of affinity in the whole of Nature*, from the simplest chemical process to the most complicated love story, was recognized by the great Greek scientist, Empedocles, in the fifth century B. C, in his theory of the 'love and hatred of the elements.' It received empirical confirmation from the progress of cellular psychology, the great significance of which we have only learned to appreciate in the last thirty years. On these phenomena we base our conviction that even the atom is not without a rudimentary form of sensation and will, or, as it is better expressed, of feeling (aesthesis) and inclination (tropesis), that is, a universal soul of the simplest character."

What is known as the modern sentient-matter theory was first advanced by me in 1873 and fully elucidated since then in numerous periodicals, its only opponents being Materialists, as might have been expected. That it is now generally recognized, all readers of advanced literature are fully aware, even Haeckel accepting it in numerous parts of ***World Riddles***, as may be seen in above and other extracts heretofore quoted, and particularly in this one on page 220: "As to my own opinion and that of many other scientists, I must lay down the following thesis which covers the whole field of organic and inorganic Nature: The two fundamental forms of substance, ponderable matter and ether, are not dead and moved only by extrinsic force, but they are endowed with sensation and will, though naturally of the lowest grade; they experience an inclination for condensation, a dislike of strain; they strive after the one and struggle against the other."

In view of which generally accepted postulate it is remarkable that Drummond has not been able to record the existence (up to the time when our primitive forefathers roved thru the wild-woods as "savage and un-

blessed souls") any affection between husband and wife, since from the aforementioned well-established premises it is evident that the source of conjugal affection is to be found in the sensation and will of their constituents and in their striving after condensation. And since matter is condensed force, that is, reducible in its ultimate analysis to immaterial force-units (to which theory I claim priority, having advanced it in 1873 and elucidated since then, as stated,) it follows that its positive element is identical with the male principle or property, and the negative element with the female property, both of which find their highest exaltation in sex, and their culmination in the procreative functions. Hence conjugal affection cannot be absent in any naturally functioning organism.

Or we may say that the manifestations of energy we recognize as the attraction of the sexes is the sum-total of the psycho-genital energy of their atomic constituents. A similar view of the source of our supra-mind was expressed by Thomas A. Edison in these words: "The intelligence of man is the sum-total of the intelligence of his constituent atoms".—To be more specific I would modify the above by saying: The subconsciousness of plants and animals is the sum of the mind-element of their atomic constituents, and the supra-mind of man and the lower animals is the sum of the supra-element of their constituents; as has been explained in Part devoted to the ***Soul-life Of Plants.***

While the purely psychical element is thus condensed in and exalted thru the cerebral centers, (the nerve-ganglia distributed thruout the organism), the purely genital elements have become embodied in the procreative organs and found their expression in that ineffable affection we call conjugal love which reveals itself in all normally developed orders of life.

A pathological view of the relation of the individual cells to the supra-mind was recently expressed by Mrs. Julia Seaton Sears, a prominent leader in the *New Thought* movement, in the following form: "Each and every cell of the body is intelligent. Mind, the master, controls them. By holding in the mind an image of the body as we wish it to be, we are able to force the cells to rebuild and reform the body. The process takes about a year. I think that in this procedure I have the key to the cure of many diseases called incurable."

CHAPTER 77

THE ABOLISHMENT OF MATING SEASONS. THE ARCH UPON WHICH THE SUPERSTRUCTURE OF FAMILY-LIFE IS BUILT. THE MEANS EMPLOYED FOR THE ELEVATION OF MAN.

Returning to Henry Drummond's interpretation of the phenomena attending the evolution of the human father, we find the following on page 295 of *The Ascent Of Man*. After stating that "the father was in a much worse plight so far as training for family-life was concerned than the Mother, since the instinct of paternity was non-existent in him", (which proposition rather conflicts with the position taken in the preceding chapters that the elements of paternity and maternity have their source in the sensation and will of the constituents of so-called "matter") Henry Drummond continues:

"Now here is a pretty problem for Evolution. She has at once to make good Husbands and good Fathers* out of lawless savages. Unless this problem is solved, the higher progress of the world is at an end. The thing of highest importance is Family Life. When the Family was instituted, and not till then, the higher Evolution of the world was secured. Hence the exceptional value of the Father's development. As the other half of the arch on which the whole higher world is built, his taming, his domestication, his moral discipline, are vital; and in the nature of things, this was the next great operation undertaken by Evolution."

One portion of the arch upon which Family-life rests existed already in the natural attraction of the sexes which has its foundation in the psycho-genital affinity of the elements, as has been shown. In this inclination for conjugal affiliation the up-builders of organic life found their main instrument for the elevation of Man.

"The first step in the transition", says Drummond, "was to relate the father definitely and permanently to the Mother. And here a formidable initial obstacle was encountered. The apathy and estrangement between husband and wife in the animal world is radical and universal. There is almost no such thing there as married life. Marriage is a dwelling together throughout life of husband and wife. Now when man emerged from the animal creation, this institution of conjugal life had not

* It should be stated that the profuse capitalizations which appear in the quotations from *The Ascent Of Man*, are Drummond's; not the writer's.

been arrived at, and until they learned to continually dwell together, there was no chance for mutual love to spring up between male and female."

How about the mutual love which generally springs up between couples long before they dwell together?!

"In Nature the pairing season is usually but an incident lasting only for a short time, and during the rest of the year, with very few exceptions, the sexes remain apart. From the investigations of Westermark it appears more than probable that the earliest progenitors of Man had also a pairing season, and that the young were born at a particular time of the year. Now the brevity of this period in the father's case must have told against his developing any real affection. If he is to run away a few days after the young are born, he will miss all the discipline of the home; and as this is the only way in which love can be acquired, or inherited love developed, some method must be adopted to extend the period of home life during which love can act."

If he were not restrained by conjugal affection, what would prevent him from deserting his mate immediately after mating, instead of running away a few days after the young are born? If he stays at home till then, a good deal has to be placed to his credit. (That much cannot even be said of many a civilized father.) We find, indeed, that the males of all animals nearest to Man have more or less domestic habits, such as building huts, providing food and protecting their families as best they can, showing anything but an inclination to let their brood shift for themselves, evidence that their paternal instincts are strong within them. And with Drummond's admission that birds and several species of Invertebrates manifest similar dispositions, it is doubtful whether they are totally absent in the males of any species which display traits of a like nature towards the mothers of their offspring, seeing that both sentiments are intimately related.

True, Henry Drummond states that: "Among the Carnivora the mothers have frequently to hide their little ones in case their fathers eat them", but these are exceptional cases, and may probably be accounted for by the father's paternal love being temporarily suspended either by the youngsters' misbehavior, or entirely subverted by that most powerful of all instincts or demands of the subconscious minds, self-preservation, when that dread monster, *Starvation*, stares him in the face. This first law of Nature is bound to assert itself under all conditions

—mere sentiment having to "take a back seat" when life itself is at stake. And that paternal affection prevails even in the lowest ranges of organic life, we may safely assume on the principle of Heredity that all developed traits and characters of the higher organisms must have their source in a cognate property of the elementary units of animal life, the individual cells, this principle being expressed in the axiom: "Like begets like; as the parent, so the offspring", the only difference between them being in appearance, not in essence. This innate paternal instinct we may, therefore, regard as one half of the Arch upon which the superstructure of Family-life rests, its counter-part being the Mother's Love for offspring.

CHAPTER 78

DRUMMOND'S VERSION OF THE DOMESTICATION OF OUR PRIMITIVE FOREFATHERS. THE PAIRING SEASONS OF THE LOWER ANIMALS. NATURE'S DISCIPLINE.

After thus calling attention to the fact that the shortness of the pairing-seasons of our Simian forefathers must have militated against their evolvement into model husbands (and wives as well), and that under these adverse circumstances it was next to impossible for the father to develop any real affection towards his consort and her young, since he would be liable, thru his roving disposition, to lose all the natural and domestic discipline of a permanent stay-at-home life, and that some method must be devised (by whom or by what?) to keep him more frequently under the feminine, hence refining influence of his gentler and more affectionate mate, Henry Drummond proceeds in the following strain on page 297:

"Now let us see how this was done. The problem being to give Love time, the solution was in some way to alter the circumstances which confined the pairing seasons to a specific date—to abolish, in fact, the pairing seasons in the case of Man, and lengthen out the time in which husband and wife should stay together. And since this was actually the method adopted, we have first to ask what these special circumstances were. Why should animals have specific dates at all? The clue will be found if we examine carefully what these dates are and the reasons Nature has for choosing them. (So the nondescript "Nature" *reasons* and chooses?! H. W.) Some wise principle must underlie this, or it would not be the

universal rule. The pairing season with birds, as every one knows, occurs in the Spring. With Reptiles this is also the case, but among Mammals each species has a season peculiar to itself, every separate month being selected by one or the other and invariably adhered to."

After naming several species of Mammals each one of which has its mating season during a certain month of the year from January to December, he says: "It might seem that no law governs these various dates, but their very variety is proof of an underlying principle, for they show that each animal in each country chooses that time of the year to give birth to her young when they will have the best chance of surviving—that is, when the climate is mildest, food most abundant, and the prospects of life most favorable. The dormouse thus brings forth its young in August when the nuts begin to ripen, and the young deer sees the light just before the first grass shoots into greenness. Because those born at this season survived, and those born out of it perished, by the action of Natural Selection these dates in time became engrained in the species and would only alter with climate itself."

To say that each animal chooses the time most favorable for the birth of its young is very vague and not at all warranted if it is assumed that it chooses these periods as it does its foods, its drinks, its haunts, its mates, etc., that is, thru its supra-consciousness. This can have no knowledge or conception whatsoever as to what the future will bring forth, or when their unborn youngs' food will be most abundant. Even our own "higher ego" has to learn this by experience or thru hearsay or other sources to which animals have no access. Hence it is in order to ask what intelligence is it that chooses the proper time of the year when certain species shall give birth to their young? What but their own individual cell-souls, the teleo-mechanics of the Organic Kingdom (commonly called "Nature") which were raised by direct descent under various climatic conditions from simple to multiple cells and have learnt from experience extending back for ages when the proper period of parturition for their young will arrive, which knowledge enables them to "time" or "set" their seasons of conjugation at such dates that their offspring will see the light of day under the most favorable auspices. This was a wise arrangement for the beasts of the field or for the denizens of air and water, but not essential for those who are capable of "harnessing the elements" of their own free will, and of "rising superior"

to the conditions upon which the survival of the lower orders depends. Hence mating seasons were abolished also by the subminds of most domesticated animals, they being aware that since Man provides for their wants, it matters not when their young are born, showing that they exercise judgment under ever-varying conditions, that they can adapt their organisms to changed environs and depend upon their own resources to carry their plans into execution regardless of "Nature's Discipline".

CHAPTER 79

THE GIST AND SUBSTANCE OF NATURAL SELECTION. HAECKEL'S "SELECTIVE DIVINITY" REDUCED TO A SOLECISM. HOW FAMILY LIFE WAS INSTITUTED. THE SOVEREIGNTY OF MIND OVER MATTER. THE GORILLA'S HOME-LIFE. LOVE THE CONQUERING AND HUMANIZING FORCE.

Henry Drummond's foregoing statements pertaining to pairing seasons and his explanations thereof, furnish a fair exemplification of how the principle of Natural Selection operates. Thus in saying that: "Because those born at this season survived, and those born out of it perished, by the prolonged action of Natural Selection these dates in time became engrained in the species", he but expressed in so many words the fact that the subminds of the survivors had become aware during the course of many generations of the advantage of conjugation and subsequent parturition taking place at certain seasons of the year, and that those organisms whose cell-souls profited by these ancestral experiences and adapted themselves to climatic conditions, inevitably survived, while those animals whose subminds were delinquent in these duties or remiss in their adaptation to their environments, perished. The operation of this law inevitably resulted in Organic Evolution. Thus every instance that may be cited by those who profess that the figment "Natural Selection" fully accounts for the facts of Evolution, may be traced, first, to the conscious memories of the survivors' subminds, and second, to the exercise of judgment in the premises. A failure to conform with these requirements, if persisted in for generations, will result in the decline and eventual extinction of the species, while those of superior submental capacities or attainments, will as inevitably survive.

A sample of the materialistic explanation of Evolution is the following on page 263 of *World Riddles:*

"The theory of Selection solved the problem that had mastered Mueller—the question of the origin of orderly arrangements from purely mechanical causes which first revealed to us the true causes of the gradual formation of species. Darwin was the first to point out that the 'struggle for life' is the unconscious regulator which controls the reciprocal action of heredity and adaptation in the gradual transformation of species; it is the great 'selective divinity' which, by a purely natural choice, *without* preconceived design, creates new forms, just as selective man creates new types by an 'artificial choice' *with* a definite design. That gave us the solution of the great philosophic problem: 'How can purposive contrivances be produced by purely mechanical processes without design?' "

Note the inimitable analogy: Just as man creates purposive contrivances *with* definite design, so, in like manner (?) does the "selective divinity called Natural Selection" create them *without* design. (!) Yet on this palpable solecism is the whole Darwinian theory of Evolution based!

On page 298 the author of ***The Ascent Of Man*** says: "But when Man's Evolution had made a certain progress, and when the Mother's care reached mature perfection, it was no longer imperative for children to be born only when the sun was shining and the fruits grew ripe. The parents could now make provision for any weather and any dearth. They could give their little ones clothes when the nights grew cold; they could build barns and granaries against times of famine. In any climate, and at any time, their young were safe; and the old marriage-dates, with their subsequent desertions, were struck from the human calendar. So arose, or at least was inaugurated, Family Life, the first and the last nursery of the higher sympathies, and the home of all that was afterwards holy in the world. One could not find a simpler instance of the growing sovereignty of Mind over the powers of Nature. So remote a cause as the inclination of the Earth's axis and the consequent changes of the seasons, determines the time of marriage for almost the whole animal creation, while Man, and a few other forms of life whose environment is exceptional, are able to refuse all such dictations. It was when Man's mind was capable of making its own provisions against the weather and the crops that the possibility of Fatherhood, Motherhood and the Family were realized".

No truer words were ever uttered, nor any more pregnant with import, than that in all the facts and

phenomena cited by Drummond, "no one could find a simpler instance of the growing sovereignty of Mind over the powers of Nature". *Mind Governing Nature!* That tells the whole story in a nutshell; it explains all heretofore inexplicable phenomena in a self-evident manner, so simple that any one capable of reasoning from cause to effect and *vice versa* can understand it.

The sovereignty of Mind over the powers of Nature means that all the various mechanicisms of matter or force are under the full control of some form or forms of intelligence. With this point admitted, the argument of design is vindicated.

The last stage in the evolution of the human father, Henry Drummond sees in "a little child. Till this appeared, man's affection was non-existent," he says. Both paternal and conjugal affections exist in a greater or lesser degree in all beings whenever they have an opportunity to assert themselves.

In elucidation of this last stage, Drummond says on page 307: "The lengthening of the periods during which Father and Mother now keep together meant double protection for the little ones; and the more they kept together for the first few weeks, and the more the father helped mother and child, the more chance for all three in the end. The picture which Koppenfels draws of the female Gorilla and her young ensconsed in a hut built in the forks of a tree while Gorilla *pere* sits at the foot with his back against the trunk to protect them from the leopards hovering around, is a fair object-lesson in the protective stage of the father's evolution. When Man passed, however, from the frugivorous to the carnivorous state, the father had the additional responsibility of keeping his family in food. But this means promotion to the father. He has not only become protector but also food-provider. We cannot believe that the discharge of this office did not bring faint satisfaction to himself; that the mere sight of his offspring fed, instead of famished, did not give him a certain pleasure which led in the end to sympathy and self-denial".

All these sentiments were inspired by and had their source in the suggestions of his cell-souls who labored in obedience to their inherited tendency for the elevation of his race, which eventuated in their own exaltation in Man.

"Love, when thus established in the world as a winning force", he concludes, "could only yield to a force greater than itself, and greater there is none. In the hand of Natural Selection, it ran its all-conquering course.

Whatever physiological adjustments continued to go on beneath the surface, ethical factors now determined survival or extinction. The child which has drank most deeply of its Father's and its Mother's love, lives to transmit that which has spared it to a succeeding race. How much of affection is handed on, matters not, for Heredity works with the finest microscope and seizes the invisible. In another child, reared by parents still more loving than the last, this particle of Love will grow a little more, and each succeeding Family in this royal line will be richer in the elements which make for Progress".

That is all there is to *"Natural Selection"*—the Darwinian principle of Evolution thru "the Survival of the Fittest in the Struggles of Life"; a mere auxiliary aid to those who do the actual, potent, intelligent work; the teleo-mechanics of Nature. What could a *nonentity* accomplish *without* them, and without *Love*, the *Conquering* and *Humanizing Force?!*

CHAPTER 80

PHYSIOLOGICAL MODIFICATIONS ESSENTIAL IN THE TRANSITION FROM BRUTE TO MAN. PAIRING SEASONS CONVERTED INTO A PERMANENT ONE EXTENDING THRU-OUT LIFE. COMPARISON OF MENTAL CALIBERS OF SUB- AND SUPRA-MINDS.

But before the subminds engaged in the upbuilding of the *genus homo*, that is, those cell-souls which had reached the Pithecanthropus* stage of Evolution, could deem their task completed, they had to make certain physiological modifications pertaining to their conjugal relations. The necessity for such a change was intimated vaguely by Mr. Drummond in these words on page 301: "By abolishing the pairing season, Nature lengthened the time for love to grow in", and on page 296: "In Nature the pairing season is usually only an incident".—Changes involving a project of such magnitude as abolishing a custom among animals that had become part and parcel of their very being, could not be carried out without making corresponding alterations in their entire physiological and psychological "make-up". Drummond's statement that Nature lengthened the time for love to grow in, by abolishing the mating season which was only a short incident in the lives of our predecessors, could be anything but satisfactory to those of his readers who wish to get at the

* The alleged link between monkey and man.

fundamentals of things. There is something lacking in his presentation of the case; something of vital importance to which no reference whatever was made. A matter of such importance to the perpetuation of our race cannot be abolished without substituting something to the same purpose in its place. If we annul a useful law, and enact no better one, we are worse off than we were before.

Hence when the cell-souls of our male predecessors of the genus Pithecanthropus Erectus recognized the necessity that in order to elevate their general condition in life they must renounce their habit of seeking connubial felicity with a certain female only for a few days for purposes of propagation, and then letting her shift for herself as best she might for all the rest of the year without the father of her children doing anything for their support, their paternal cell-souls could not fail to gradually become aware that there was something radically wrong in a marriage-system like that, and so they commenced to make a determined effort (in which they were, no doubt, materially aided by the subminds on the female side of the "house") to correct these evils by converting this brief pairing season into *A Permanent One*, so permanent and lasting in its duration, so binding in its character between husband and wife, that in the majority of cases "only death could them part".

That certain physiological and collateral anatomical modifications had to be made to adjust the genital organisms to their new modes of life is obvious. To strike the old "marriage-dates" or periods of cohabitation remarkable only for their brevity from the human calendar, and substitute for these short dates *one that would cover the whole year from beginning to end for their entire life*, could not be done without so modifying their entire physiological and psychological constitutions as to produce the desired result.

The problem, then, with which the subminds of our forefathers and foremothers of the Pithecanthropus stage of Evolution had to contend was to so modify their conjugal inclinations that instead of cohabitation being desired only for a brief season, it should be *Dispersed* and *Extended* over the whole year and for an indefinite time thereafter—for life, in fact. Yet, while thus *Dispersing* the periods of conjugation, they were also to be made so "pronounced" as to effectually tighten the bonds of affection between husband and wife, all of which required

corresponding physiological and psychological transformations of their constitutions and temperaments.

It should here be noted that the *sum* of the intelligence of the cell-souls who wrought these wonderful changes in our anthropoidal forefathers was as superior to their supra-minds as the sun is superior to a tallow-candle. This contention is based on the fact that they and their descendants succeeded in their efforts to build up a superior race of beings, and consistency forces us to credit the subminds with what they accomplished in the way of adapting the organisms to these new requirements. In the operation of the law of Adaptation the conscious judgment of the cell-souls is revealed.

By saying the *sum* of the intelligence of the subminds who were engaged in the transformation processes from brute to man, I had in mind the almost *infinite diversity of functions* in which they were engaged, and that while each cell-soul was of the simplest mental caliber, when viewed in their *tout ensemble* as one subconsciousness, they constituted an intelligence compared to which man's supra-mind dwindles into utter insignificance. For full particulars see chapter 46.

Yet, while their subminds were thus engaged in *humanizing* their entire physio-psychic dispositions, they also attended to the development of the faculties relating to the outside world, thereby rendering both male and female more proficient in the exercise of those duties which resulted in the arts of Civilization. By thus improving their general condition in life, it soon became immaterial when their young were born, since they had become able to provide for their wants at all seasons of the year.

Thus was a steady home-life instituted, and with this grand object attained, the acquisition of other domestic and social virtues followed in the natural course of events.

PART IX

CONSCIOUSNESS THE BASIS OF ALL PSYCHIC STATES.

CHAPTER 81

PROF. ELMER GATES IDENTIFIES MIND, LIFE, THOUGHT ETC. WITH CONSCIOUSNESS. HIS VIEWS OF THE SUBMINDS AND THEIR FUNCTIONS. THE MATERIALIST'S FORMIDABLE ARRAY OF NONENTITIES. ANCESTRAL EXPERIENCES.

The great question of the conscious or unconscious states of the lower forms of life being still in abeyance, (this question being regarded by many as the *"Great Ultimate"* of bio-psychological research), and since upon this point depends whether a correct conception of the phenomena herein presented will be obtained or not, the reader's attention is called to the views of Prof. Elmer Gates in contravention of those held by the author of *"The Riddle Of The Universe"* who has declared it as his "unalterable conviction" that the intelligent movements of all beings not endowed with a centralized nerve-system are of an unconscious nature, being mechanically or automatically performed, however unthinkable such kind of an intelligence may be.

The following extracts are taken from Prof. Gates' treatise on *"The Mind And Brain"*, published by the Theosophical Society, New York, with whose kind permission I quote: "The meaning which I have herein given to the word 'mind' includes all there is of consciousness together with the functionally associated subconscious processes of the organism; that is, it includes within its scope the psychologic characteristics of the cellular activities". (p. 42.) This view is in line with the one presented by me over a quarter of a century ago and elucidated since then in various publications to the effect that in the *consciously operating* cellular activities of plants and animals the direct and potent factors of their growth and development are found, and that the "life" of each organism is its subminds in actual operation.

On page 23 Prof. Gates says: "At least ninety-eight percent of our mental life is subconscious."—This estimate is not too high, for there is not a single living cell

within an animal or vegetal organism (and there are over *Eighty Trillions* in a fully developed human body) which is not consciously and intelligently operated by its own subminds or cell-souls, as has been fully explained in the preceding chapters. The other two percent of our inherent mind-force consists of our supra-element which governs the functions of the brain-proper, and which thru these organs manifests itself as our so-called supra- or principal consciousness. Hence our sub- or biologic mind should be regarded as our principal mentality, and the mind of which alone we are cognizant, as our secondary or subjective mind.

Prof. Gates endows every vital and mental process with consciousness as may be seen from the following on page 41: "The word 'Mind' signifies the totality of the phenomena of *Consciousness* and includes all that can feel, remember or adapt acts to ends; and therefore it includes all of the phenomena of the intellect, such as sensation, images, concepts, reasoning, introspection, etc. It includes all of the activities of the systemic and organic feelings, and of the tender, æsthetic, moral, logical and religious emotions. It includes the whole subject of volition and all of the vital and subconscious processes connected with the exercise of these functions."

The above definition of Mind accords with the one expressed by Dr. Charles Gilbert Davis in "Suggestion", saying: "And now, in the dawn of the Twentieth Century, eminent Psychologists and Biologists tell us there are but two things in existence—force and consciousness".—To this hypothesis I also claim priority, having advanced it in 1875, leading to a very heated controversy lasting for years, Materialists being my only opponents, I holding that matter is reducible in its ultimate analysis to conscious force-units, and that these must necessarily, when condensed into more or less compact bodies, clash upon our senses in the form of matter.

Experience deserves special mention among the above cited psychic activities of conscious mind since it plays a most important role in both sub- and supra-conscious domains. It furnishes the stimuli to constant mental and physical exertion, thereby broadening the expanse of the spheres in which it operates, the result of which is seen thruout the ages in the advancement of whatever comes under its influence. In fact, the evolution of both Nature and of Art are directly traceable to the experiences and judgment of the minds operating in their respective provinces.

Now place beside these vito-psychic forces of the Cosmos those of the Haeckelian Philosophy called Monism or Materialism and what do we find? 1, *Evolution*, an abstraction. 2, *Mechanicism*, an abstraction. 3, *Natural Selection*, an abstraction: three nonentities. When we add to these "*Nature*"—a nondescript in the materialistic sense, since no one can form the least idea of what it is outside of force and matter, we have the great sum of four *Nothings* with which the materialist tries to explain "the marvels of the Universe with all that therein teemeth"! What a formidable array of scientific postulates, none of which have any realism outside of learned men's brains, according to Prof. John Tyndall, a materialist himself. Four nonentities with which to account for all the realistic existences of the Cosmos!!

CHAPTER 82

PRODYNAMIS VS. PROSYCHDYNAMIS. THE TWO CHIEF FORMS OF MIND. THE MIND-FORCE WHICH SURVIVES AND IS UNAFFECTED BY INCANDESCENCE. PROF. T. H. HUXLEY'S OBJECTION TO THE SENTIENT-MATTER DOCTRINE ANSWERED.

A similar view to the one quoted is expressed by Prof. Gates in these words on page 43: "It is out of these mind-like functionings of the cells of the body and brain that the conscious processes of the human mind arise. It is the judgment-properties of the matter of the body becoming dynamically evolved and accentuated."

By "matter of the body" the Professor refers to its atomic constituents, and that it is their mind-element which in conjunction with their physico-dynamic substratum becomes energized to such an extent as to be able to govern the physiological processes of body and brain intelligently. That is to say: neither the mind-capacities or functions of the cells, nor the faculties of the sub- and supra-minds are generated *de novo* by the attendant physiological processes, as claimed by Materialists, but these functions are merely the media thru which the inorganic conscious mind-element is formulated into our sub- and supra-consciousness.

Of the necessarily cognate source of the *known* forms of mind Prof. Gates says on page 45: "If there is embodied in the whole Cosmic Universe a Supreme Mind in some manner analogous to the way in which mind is embodied in the human organism (and I say it with deep and

genuine reverence), then, in studying the phenomena of mind, you will to that extent become acquainted with the kind of power that lies at the head of Cosmos. Your mind must be, in its own nature, similar unto that cosmic condition in the Universe out of which it came, or of which it is an eternal part. Your mind cannot be in fundamental antagonism and contradiction to the cosmic order out of which it was generated and from which it has directly inherited all of its characteristics; and therefore, to introspectively and scientifically know the nature and laws of your own mind is to know directly that much of what is the most interesting, mysterious, wonderful, and perhaps the most all-pervading and potent force in the Universe."

The above premises admitted, it follows that since consciousness is the principal feature of our own mind, (and to all appearances even of that of the simplest self-evolved cells), this attribute must also be the chief characteristic of the inorganic mind-force or forces which constitute the "Infinite Source from which all (transient) things proceed". (Spencer.) Going a step further in our analogical reasoning, we may say with equal validity, that since *consciousness* governs all mechanicisms of Art, so must it also govern the mechanicisms of so-called Nature.

Now inasmuch as nothing so foreign in its nature and operations as is consciousness can possibly arise from the Materialist's alleged insensate matter or dumb force, it is evident that all phases which consciousness assumes and thru which it functions, such as perception, judgment, memory, volition and various emotions, must have a cognate basis of its own in the Cosmos, even as the known physico-dynamic forces are supposed to have their source in the primitive energy called ***Prodynamis***. And since both the psychical and the dynamic elements are inalienably associated—as we find in the life or vito-psychic energy of all living organisms—a proper appellation for this united elementary force would be ***Prosychdynamis***, the Primal Mind-Energy.

Now why are the immanent mind-forces much more "in evidence" in organic bodies than in inorganic ones? Simply because the psychic element has become prepotent over the physical forces in organic bodies owing to their peculiar constitution, while in inorganic bodies the psychic element is reduced to a minimum, hence is unable to manifest itself to any perceptible degree, altho Plasmologists have obtained strong evidence of its existence

in crystals and other mineral substances. Thus there are two principal kinds of Intelligence in the Cosmos, namely, organic and inorganic—alike in essence, but differing in kind, quality and intensity (or caliber,) all of which can be determined by their respective modes of manifestation.

This partly answers the objection frequently made against the Mind in Nature doctrine to the effect that no mind can resist the incandescent heat to which all planets are subjected during their incipient stages of existence. While it is true that no *organic* or even molecular mind could come out of such an ordeal unscathed, the *atomic* forms of mind are not subject to transmutation, much less to annihilation by violent means. The point is that while all molecular and cellular (organic) mind is a composition—the result of the combination of two or more atoms, molecules or cells—such combination is liable to be disrupted by various kinds of agencies, while on the other hand, all properties, mental, physical or dynamic of the individual units called atoms, electrons, force-centers, etc., are indestructible, hence immune against any forces that can be brought to bear upon them. This meets Prof. T. H. Huxley's sole objection to the sentient matter doctrine which objection was based on the false assumption that all mind in Nature is of an organic or complex character.

CHAPTER 83

PROF. ELMER GATES' OBJECTION TO PROF. WEISMANN'S THEORY OF HEREDITY. THE GUINEA-PIGS EXPERIMENTS. WHEN ACQUIRED TRAITS ARE TRANSMISSIBLE. ORGANISMS WHICH SURVIVE IN WORLD'S STRIFE FOR SUPREMACY. FURTHER ANALYSIS OF EVOLUTION. HOW NEW SPECIES ORIGINATE.

On pages 29 and 30 Prof. Gates expresses his views of the laws of Heredity as follows: "The experiments I have made contradict the conclusions of Weismann and others regarding heredity. They claim we have no proof of a skill, an idiosyncrasy, or a habit acquired during the life-time of an individual being transmitted to that person's offspring. They mention circumcision as practiced by the Jews generation after generation, asserting that it is not transmitted. The mutilation of a Chinese woman's foot they say is not transmitted. I say it could not be transmitted because the change does not originate in

the mind. If I train an animal in the excessive use of some one mental faculty, its germ (or reproductive) cell will be influenced in its nutrition through the parent's changed metabolism, which is produced by the changed character of the mentation. I have trained four generations of guinea-pigs in the use of the visual faculty, and the children of the fourth generation were born with a greater number of brain-cells in the seeing-areas than other guinea-pigs that had not been thus trained. The experiment has been successfully repeated several times, and it demonstrates the transmission of acquired traits. I have found in single cells that when they are made to respond generation after generation to a certain stimulus in excess of all other stimuli, there gradually arise specific anatomical structures produced by the mental activity which responds to that stimulus. The conclusion is that mental activity creates certain structures transmissible to offspring''.

Acquired traits become hereditary under the following conditions. Whenever the subminds involved recognize any suggestion of the supra-mind as beneficial to the organism, they proceed to make the needed modifications. Conversely, if they do *not* regard it as advantageous, no notice is taken of the proposed change. Prof. Gates' experiments prove not only the conscious judgment of the cells, but also their ability to adapt the organism to changed environs (as for as lies in their power) whenever circumstances warrant the alterations.

Habits of the supra-mind leading to the acquisition of new traits must be persisted in for some generations before they will leave an indelible impress upon the memories of the sex-cells to render them transmissible to offspring. From the moment the utility of a new feature dawns upon their consciousness, their molecular mechanicisms are changed to accord therewith; new cells are added to the defective parts, and so, in the course of time, a decided transformation appears. These are the initiatory steps taken to incorporate the new trait permanently into the individual and its progeny, their sperm or ovum cells having taken full notice thereof. To this recognition of advantageous features and their consequent acceptance and transmission to offspring, may, indeed, the origin of new species be traced.

Thus in the cases cited by Professors Gates and Weismann, no advantage has ever been perceived by the subminds upon whom devolved the formation of the Chinese womens' feet, to mould them into a different shape

than they had originally devised, hence they very sensibly refused to conform the "pedal extremities" of their progeny to a silly and useless custom.

Likewise in the religious rite of circumcision, no improvement is recognized by the cell-souls in this artificial modification of structure, hence they continue to exercise their own judgment in the premises.

But note how quickly they respond to a sensible suggestion of the supra-minds. See how soon the muscles grow and develop thru useful exercise; see how the chest expands thru vigorous and healthful respiration; note the grace of animals racing over hill and dale, while others less ambitious retain their native sluggishness; observe how quickly the subminds adapt the various parts of "the houses they live in" to exterior conditions, that is, as soon as they have received the needed suggestions from their supra-minds which stand guard like sentinels over the entire congeries of cellules.

Hence those organisms whose subminds perceived the necessity for any change of, or addition to, their structure, survived in the struggles for supremacy, while those which failed to profit by their experiences, ingloriously succumbed to the inevitable. Therein lies the incentive to Organic Evolution—the impellent to the cell-souls' efforts to improve their organism's conditions of life.

For example, in the guinea-pig experiments, the cell-souls located in the affected visual area became aware of the benefit to be derived from the stimulus received thru artificial means, and forthwith proceeded to take advantage of the opportunities thus offered to increase their ocular capacity by adding cell to cell until a decided augmentation of this faculty was noted. Thru the stimuli constantly conveyed to them, the influx of "upbuilding" material increased to such an extent during several generations as to finally make a permanent impression upon their reproductive cells, which resulted in improved visual organs becoming transmissible to their offspring.

We may lay it down as a general principle that when the cell-souls resident in any given part of a plant or an animal become aware that their locality is specially adapted for a favorable change of or adjunct to its structure, their processes of cell-formation are modified in conformity with the new impressions received. These processes are continued, and the impressions pertaining thereto transmitted from one generation to another, until a new character has been evolved or the desired modification effected.

That there are exceptions to this rule may be seen

from a news-item dated June 27, 1910 stating that near Alton, Ill., a crawfish with a well-developed claw on its tail was discovered. As this new member could not have been an inherited trait, it must have been an expeditiously acquired character, showing that progress does not always depend on the slow processes of Evolution, and that there are, in fact, "inventive geniuses" (ala Edison) among the teleo-mechanics of Nature as well as in Art. And why may many new species not have often originated in the same ingenious ways? The above instance also serves as a fair example of the analogy between the sub- and the supra-minds to which special attention has been called.

CHAPTER 84

THE ENTITY OF VITAL FORCE. KANT DECLARES MATERIALISM UNABLE TO EXPLAIN A SINGLE BLADE OF GRASS. NATURAL SELECTION OPERATIVE ONLY AFTER ORGANIC LIFE WAS EVOLVED. NO CONSCIOUSNESS BUT FROM CONSCIOUSNESS. THE MIND-CAPACITIES OF SINGLE CELLS. ARTIFICIAL PROTOPLASM.

On pages 42 and 43 Prof. Elmer Gates says: "The philosophic import of the definition I have herein made of mind is that mentality includes and is synonymous with vitality".—This statement recognizes the fact that all life or vital energy of a plant or an animal is identical with mind, of which Prof. Haeckel says on page 221 of *World Riddles* that it is "the most perfect form of energy that we know". This acknowledges mind to be an actual working force, for scientists "know" or recognize only entities.

Yet the above position is repudiated in these words on page 42: "Haller gave strong support to the erroneous idea of a specific vital force (vis vitalis)". And on page 263: "The theory of Selection has driven the uneasy phantom of vital force from its last refuge". What bearing an abstract concept can have upon the most perfect form of energy we know, the Professor has not attempted to explain. Nor when and by whom the idea of a vital force was ever proved to be erroneous.

Vital force and life are identical, one and the same vito-psychic energy, hence to deny the former is to deny the latter, which no one has ever had the hardihood to attempt. That this vitality is a realistic potent entity is seen in the intelligent functions of plants and animals,

proving that it possesses the same *Working-Capacity* as its associate physical forms of energy.

Referring to vital processes and psychic activities, Prof. Haeckel says on next page: "It seemed to Kant so impossible to explain the orderly processes of the living organism without postulating a purposive creative force that he said: 'It is certain that we cannot understand the nature of an organism and its internal functions on purely mechanical principles; it is so certain that we may confidently say, it is absurd to suppose that some day a Newton will arise who can explain the origin of a single blade of grass by natural laws which are uncontrolled by design'. Seventy years afterwards this impossible Newton appeared in the person of Charles Darwin who achieved the great task that Kant had deemed impossible".

Where is the principle of Natural Selection (in the Darwinian sense), or of the "Survival of the Fittest", as Herbert Spencer termed it, that can account for or explain the growth and development of even a blade of grass, much less its origin from insensate inorganic matter? If Darwin achieved this great task, the world has never been apprised of it. The principle of Natural Selection became effective only *after organic life originated*, because then the struggles for existence commenced. It could not have had the remotest influence on processes or events which transpired ages *before* the Survival of the Fittest became a factor in the development of organic life. Hence it is not only absurd, but *downright preposterous* to claim that the ***Origin*** of organic life could be explained by Natural Selection which was still non-existent, or from purely mechanical premises.

The latter is even more unthinkable, more unscientific, more unwarranted than the former, since it has become axiomatic with biologists that there is "*no living substance but from living substance*", which is but a modification of the scientific postulate that "*Like begets* like," hence from such radically different sources as the alleged blind mechanicisms of matter no organic life with its psychic manifestations can possibly arise. On the same ground we claim that *there is no consciousness but from consciousness*, tho the organic forms, owing to their greater or lesser complexity, differ greatly in kind, quality and degree from the inorganic.

True, Darwin could trace the origin of complex forms of organic life back to a single cell—he was not the discoverer of that fact—but there he came to a "dead halt", being unable to account, like the rest of scientists of his

era, for the origin of the simple, self-evolved cell—the first palpable attempt of the mind-element in matter to manifest itself exoterically to reach the higher planes of existence which culminated in Man.

That organic life even in its simplest forms is dependent on antecedent mind-forces has been tentatively demonstrated by our artificial protoplasm manufacturers who use their own judgment in its production, thereby substituting it for that of so-called "Nature".

Of the vito-psychic forces of individual cells Prof. Elmer Gates says on pages 42 and 43: "The organs of the body are composed of cells, and these cells can feel stimuli and perform adaptive activities, and as only mind can feel and adapt, it follows that what characterizes the life of a cell is its mind-capacities. If a cell cannot feel and perform adaptive actions it is dead."— What but the "specific vital force" is this "life" of the cell with its mind-capacities which Haeckel derides as an erroneous idea? Seeing that it manifests conscious intelligence, must it not possess this faculty or mind-capacity in a degree commensurate with its adaptive activities?

The same rule applies to the origin of the first evolved Monera. If their atomic constituents were not endowed with the mind-capacity to arrange themselves into these simple organic forms, they would have remained in statu quo—no organic life would have ever appeared on Earth. If certain artisans did not have the mind-capacity to assemble heterogeneous piles of wood, stone and iron into a handsome residence, no such residence would ever have been constructed by them. The fact that they *did* construct it, proves their mind-capacity to that extent. And if a single fecundated cell did not possess the mind-capacity to build up a fish or a bird or a human being if the essential building-material is placed at its disposal, would it be able to accomplish such a feat. The fact, then, that cells *did* accomplish this feat, proves their mind-capacity.

CHAPTER 85

THE ALIENATION OF THE SUB- AND SUPRA-ELEMENTS. THE EVOLUTION OF DOUBLE CONSCIOUSNESS. THE SPECIAL FUNCTION OF THE SUPRA-MIND. SPHERE OF SUB-MINDS.

When organic life first appeared upon Earth as simple undifferentiated cells, as well as in all individual cells of later evolved complex organisms, their sub- and supra-

consciousness was blended into one mentality. But being endowed with the attribute of self-development, (as has been explained in preceding chapters), this dual mind-element during its struggles of life gradually recognized the advantage of a partial separation, since this would afford each mentality freer scope in its particular lines of labor. The consequent segregation was effected by imperceptible stages covering many generations—organic differentiations being the means employed to this end. The sub-element being specially adapted by its own intrinsic nature to assume the functions pertaining to the physiological processes of the organism and of the molecular mechanicisms of the individual cells, and the supra-element to take special cognizance and charge of outside affairs for purposes of nutrition, propagation and self-defense, the expediency of a freer, semi-independent action for both, could not fail to dawn upon even their simple judgment. The advantage of such divorcement being conceived, it was but a question of time and of consecutive generations before the idea "materialized" in the distinct ***Double Consciousness*** which characterizes all higher animals provided with a special organ of cerebration for the supra-mind. Yet their relations were not severed to such an extent as to debar them from maintaining an intimacy sufficient to admit of co-operation in preserving the integrity of the organism the subminds were engaged in constructing, inviolate as far as lay in their limited power.

Thus eventually the subconscious element assumed complete and undisputed control over the physiological processes of the body, it retaining its seat in each individual cell to attend to its molecular mechanicisms, tho centralized to a greater or lesser extent in all nerve-ganglia which constitute its special "brains" to enable it to direct their important functions, while it evolved for the special use of the supra-element the "brain-proper," altho one nerve-center is as much a cerebral organ as the other, the only difference being in the vito-psychic labor each resident sub- or supra-mind is required to perform therein.

Our supra- or "principal" mind (so called) thus stands by natural adaptation and by virtue of its advantageous locality in the relation of a guardian to the cell-community over which it officiates for the purposes stated by taking special cognizance of exterior affairs, while its confrere attends to the physical functions of the organism. In the advantage the higher organisms have derived from this separation of their dual mind-element, the pur-

pose of the division of labor recognized by Physiologists is clearly revealed.

Chronologically, the appearance of the supra-mind as a semi-independent mentality dates from the time when its localization into a special cerebral organ had made perceptible progress, as, for instance, in those species whose survival in the struggles of life was due to the wise provision made for them in this partial alienation of their sub- and supra-elements, their now more developed and unhampered "principal" consciousness giving them an advantage to which their less favored contemporaries were and still are total strangers.

Hence those organisms in which their originally fused psychic energy had been dissociated into two distinct forms of mind, were enabled to more clearly recognize and judge of their environs, enabling them with the aid of their subconscious forces to better meet the conditions imposed upon them.

That the undifferentiated mind-element of plants is fully cognizant of the great disadvantage under which they are laboring is seen in many having protected themselves against marauders by thorns, thistles, poisons and other means of offense and defense, while others again exhibit an exceptional development of their still diffused supra-mind in intelligent movements. Of these cases, the Orchids, Mimosa, Sun-dew, the Venus' Fly-trap and other plants are conspicuous examples. Even the simplest self-evolved Monera indicate by their movements that they are cognizant of their environs. The advantage of this self-imposed enstrangement between the two mentalities of the higher organisms, (of which our race has received the greatest benefit), consists chiefly in each one being enabled to concentrate its particular mind-force upon its special function, thereby propitiating its development. Yet it also accounts for us having become totally oblivious to the existence within us of the wonderful little sub-minds or cell-souls to whose operations we directly owe our existence.

CHAPTER 86

HOW THE ESTRANGEMENT OF OUR DUAL MINDS ORIGINATED. WHY WE ARE NOT COGNIZANT OF OUR SUBMINDS. INSTINCTS OF LOWER ORDERS THE VOICE OF THEIR SUBCONSCIOUSNESS. THE PURPOSE IN THE DRAMA OF CREATION.

In the embryological life of every animal of the high-

er orders the history of the alienation between its two mind-elements repeats itself. Thus in the stem-cell or cytula both are still in a state of fusion, but during the processes attending maturation a differentiation gradually takes place during which each kind becomes localized in a special organ or center. Those of the subminds are distributed thruout the entire body, they having their special seats in heart, lungs, liver, kidneys, genitals, brain, bowels and all minor parts (the entire nerve-system being the seat of the subconsciousness) while the supra-element becomes localized in the cortex of the brain-proper, of which each cell is also animated and operated by the subminds. The cell-souls of our brain thus operate this organ for the purpose of formulating our supra-mind into distinct thoughts and emotions, even as they manipulate all other parts and organs for the objects for which they were evolved.

After the supra-mind has been able to assert itself (which takes place after birth) the estrangement between the two mentalities becomes complete, altho they co-operate, each one in its own particular sphere, for the upbuilding and maintenance of the entire organism. That we are not cognizant of our subminds is due to there being no physiological or psychological necessity for it, and what there is no need for, the cell-souls do not evolve.

That the separation between the two mind-elements is not complete in the lower ranges, is seen in the more pronounced instincts of the inferior animals in which their still amalgamated mentalities are revealed. The brute creation thus depends for its guidance in the affairs of life almost entirely on the mental suggestions or dictates of the cell-souls located in the quarters from whence these directions came, evidence that both their sub- and supra-elements are in constant communication with each other.

From a comprehensive survey of the mental status of the Organic Kingdom we may deduce the law that the ratiocinative power of each individual increases in the inverse ratio in which its instincts decrease. This law has its source in the dissociation of the originally blended mind-element resident in all forms of organic life, indicating the important role this divorcement has played in its evolvement. And in view of the undeveloped supra-mind of the inferior orders, how significant the prepotency of their instincts over the feebler ones of man! Their supra-element not having been fully centered into a special organ of cerebration, and being, besides, deprived of

the benefit of artificial cultivation, they would be threatened with extermination if their subminds did not guide their undeveloped supra-element in all affairs relating to reproduction, nutrition and self-defense.

But with the advancement in the development of the supra-mind these directions of the subminds are no longer needed, save in our natural desires and emotions in which the "wee sma' voice" of our cell-souls is still dominant. Hence to a certain extent their dictates will always remain as mandatory to the highest orders of life as they are to the lowest. Our supra-mind would be like a ship without a compass if our subconsciousness did not intelligently guide it. The dissociation of our dual mind-forces has thus accomplished its lofty mission of placing a favored race at the head of Cosmos.

But there is a point of even greater importance to consider in connection with this subject, namely, why was the sub-element and the supra-element of plants and of the lowest animals ordained to remain in amalgamation during their entire life? Why were plants in particular *set aside*, so to say, or specifically chosen to so control their soul-life that both mentalities should remain in a state of coalescence and consequent subordination to the animal kingdom for all time to come? What would have been the result if to plant-life had been given the same opportunity of development (thru the dissociation of their dual mentality) as has been granted to the higher orders of life?

There can be but one answer to these questions. To the lowest orders was denied the benefit arising from a separation of their sub- and supra-elements, in order to insure the existence of more favored species. Without a certain restraint being placed on the development of plant-life, this would soon have been enabled to resist the encroachment of animals. This would mean *their* extermination, and the extinction of our own race. Altho at a disadvantage by reason of their immobility, if to the supra-element of plants had been given greater ratiocinative powers, they would have protected themselves against marauders by impregnating their bodies with such elements as to render them unfit for food, as, indeed, many have done, their subminds conceiving of this mode of protection as a practical one, showing that their mental qualifications are superior to those plants which have made no provision for such contingencies.

Hence if to the subminds of *all* plants had been given the perspicuity granted to a few, animal life would have

been unable to maintain itself. Man would have never appeared on Earth. Yet Haeckel can see "no purpose in the drama of Creation"!

CHAPTER 87

NERVE-SYSTEM THE BRAIN OF THE SUBCONSCIOUSNESS. DECAPITATED, YET CONSCIOUS AND INTELLIGENTLY ACTING FROGS DISPROVE CARDINAL DOCTRINE OF MATERIALISM. THE SPHERE OF CONSCIOUSNESS CO-EXTENSIVE WITH FORCE AND MATTER. DR. PAUL CARUS' VIEWS.

About thirty years ago I advanced the theory that the entire nerve-system of all animals of high or low degree is the cerebral organ or brain of their subconsciousness with its special seats or localized brains in the nerve-centers or ganglia. That this theory has been substantiated since then, may be seen from the following extracts from "*The Soul Of Man,*" by Dr. Paul Carus, heretofore quoted:

"The experiments of Mr. Gurney, one of the founders of the London Society for Psychical Research, as well as those of M. Alfred Binet, corroborate the theory that every nervous ganglion is a brain in miniature, as *vice versa* the whole brain is but a centralization of many ganglions. All nervous substance exhibits in the performance of the psychic functions of irritation and reflex motion throughout a marvelous adaptability to circumstances. Thus, the decapitated frog, when his back is irritated on the right side with hydrochloric acid, scratches the spot and removes the irritant".

These experiments prove, first, that the centralized nerve-ganglion we call the brain is *not* "the essential condition of consciousness" as held by Prof. Haeckel in various parts of his volume. Second, that the entire nerve-system is the brain of the subconsciousness—each ganglion being a specialized seat of the biologic mind. Third, that this must be regarded, by virtue of its having survived the terrible ordeal of decapitation, as the principal mentality of the organism. Fourth, that the subminds do *not* depend so much upon the supra-minds, as these depend upon the sub-minds. Fifth, that in the lower ranges of life the supra-element is of so inferior a grade compared to its associate mentality, that the biologic mind can, thru its great prepotency, dispense with the offices of its

subordinate central soul without prejudice to its own life and consciousness.

These propositions are confirmed by Dr. Carus in these words on same page: "Formerly it was believed that these actions of the decapitated frog took place without any consciousness. But now it is known that if its right leg be amputated and his back be again irritated, after several unsuccessful trials to use his right leg, he will use his left leg."

What stronger proof can be demanded to show that consciousness is not only diffused thruout the entire system, but also that it possesses the faculties of judgment and will.

Another correct view is expressed in these words in next paragraph: "The central soul (supra-mind) of the frog has been removed, but parts of the peripheral soul (subminds) still continue their activity in the spinal cord as long as the nervous substance remains in a state of health. And the activity of the peripheral nerve-substance cannot be merely mechanical as are the movements of a machine. Judging from these experiments they must be psychical at the same time. The mechanism of nervous reflex motion lives and feels. Even the peripheral ganglions possess a kind of consciousness of their own, dim though it may be".

In view of the fact that their individual cells display under the microscope highly complex psychical activities, the consciousness of their combined force assembled in their ganglia cannot be very "dim". In fact, the recognition by Dr. Carus of "occasional" manifestations of consciousness by the subminds has been repudiated by the following statement on page 243: "By central soul-life we understand that part of our mind which makes up the sphere of consciousness".

Now I regard the "sphere of consciousness" of any plant or animal co-extensive with and including every one of its atomic, molecular and cellular constituents. In fact I go further and include every such entity within infinite space, so that we may say: there is nothing unconscious in the Universe, tho there is as great a diversity in their respective degrees of consciousness, kinds and qualities as there is in the forms of the "matter" or force with which they are associated, and which constitutes their physico-dynamic substratum or "brain." A peculiarity of these infinite numbers of minds is that there are no two precisely alike, because all are constantly undergoing the same metamorphoses as their material substrata. Hence no

two or more minds can understand each other, or only in those exceptional cases where they are almost of the same nature and disposition, while the fact that our supra-minds are radically different from our subminds, accounts for us not even being aware of the trillions of cell-souls within us which so diligently prosecute all their diversified functions to maintain the "houses they live in".

CHAPTER 88

M. ALFRED BINET RECOGNIZES PROTOPLASM AS A DIFFUSED NERVE-SYSTEM CAPABLE OF EXECUTING COMPLEX PSYCHIC ACTS. CORNELL'S DECEREBRIZED FROG ROUTS MATERIALISM. WHY WE SHOULD REGARD OUR SUBMINDS AS THE PRINCIPAL CONSCIOUSNESS.

That the entire protoplasm of single individual cells functions in the capacity of a cerebral organ (while yet in an undifferentiated state) to both their sub- and supra-elements, as was shown in last chapter, was recognized by M. Alfred Binet in the following words on page 20 of *"The Psychic Life of The Micro-Organisms":*

"Nervous System. Hitherto not the minutest trace of a central nervous system has been found in a single Proto-organism . The nervous function among these inferior beings devolves upon the protoplasm which is irritable, which feels and which moves, and which in certain species is even capable of performing certain psychic acts the complexity of which is quite out of proportion to the small quantity of ponderable matter which serves as a substratum to these phenomena. There is, moreover, no occasion to be surprised that an undifferentiated mass of protoplasm should be able to exercise the functions of a veritable nervous system. In fact every nervous element is nothing else than the product of protoplasmic differentiation; the protoplasm embodies in itself all the functions that, in consequence of an ulterior division of labor among the pluricellular organisms, have been assigned to distinct elements".

All the diversified psychic acts referred to by the eminent member of the French Academy of Science are thus manifested thru the instrumentality of the "brain" of the cell-soul which brain exists as a *diffused* nervous system thruout its entire plasmatic base, but which has the potentiality to differentiate this embryonic nervous element in the course of generations into a more or less

developed nerve-system or cerebral organ of the biologic mind.

On page 245 of "*The Soul of Man*" Dr. Carus says: "Could we look into the interior of a human brain, and did we understand all the many vibrations and motions of the nerve-substance, we would undoubtedly be struck with the quantity of unconscious work that is being carried on there all the time".—How the important work the cell-souls of the human brain and other nerve-substance perform, can be carried on unconsciously, neither Carus nor Haeckel has ever attempted to explain. Such statements are made in the face of the known fact that each cell manifests in its movements "the majority of the emotional and intellectual faculties of the higher Mammalia" (Binet) which proves its consciousness the same as our faculties prove our consciousness. Hence, could these learned gentlemen understand the motions of nerve-substance or protoplasm, they would be amazed with the amount of *conscious work it constantly performs.*

If the work of nerve-substance was carried on unconsciously, it would make as many blunders as a mechanic would who uses his tools or his brain unconsciously. A satisfactory piece of work would be as great an impossibility in the former instance as in the latter.

Not only do the cell-souls perform all their work consciously, but they also act largely upon the suggestions of the "central soul" (supra-mind) which watches with solicitous care over the entire cell-community. That the subminds should be unaware of what is thus communicated to them is inconceivable.

Another series of experiments with results similar to those cited in the preceding chapter was described in a January 1905 issue of the New York Sun as follows:

"Cornell's decerebrized frog is dead. The animal lived for more than five years after the removal of its cerebral hemispheres, and the Professors at Cornell say that it died from the effects of old age rather than from the effects of that operation. In man the cerebrum constitutes the chief bulk of the brain and is believed to be the seat of thought and will. Dr. Wilber, head of the psychological department at Cornell, contended that in animals the cerebrum was correspondingly the seat of conscious volition. To prove or disprove this theory he, in 1899, chose a green frog and removed both its cerebral hemispheres. The operation was successful and the wound healed rapidly. The frog was put into a large open jar where it remained for five years until its death a few

days ago. During all this time the animal never showed signs of any initiative, its only movements being very slight and attributed to muscular ennui, like that of persons asleep. The eyes, optic nerve and optic lobes of the brain remained uninjured, and the animal could evidently see, but without understanding. The most attractive frog-food put before it was unnoticed and it has been fed for five years by an attendant who would open its mouth and with forceps push a bit of fresh meat or fish far enough back into its throat to arouse the reflex mechanicism of swallowing. If touched, it would move or leap; if placed in water it would swim until some support was reached; if turned upon its back it would promptly right itself.

"The decerebrized frog has served to impress upon many successive classes in physiology the functions of those parts of the cerebrum of which it was deprived, as well as the functions of the other parts of the brain which it retained. The animal was exhibited at the meeting of the American Physiological Association at Washington and has long attracted much attention among physiologists".

The intelligent movements of these brainless animals could only have been actuated by the independent conscious subminds distributed thru all parts of their bodies and which subminds have their chief seats in the various ganglia of the nervous system. Hence these experiments have demonstrated that this entire system is in reality the brain of the subconsciousness, and that it functions, under favorable conditions, with conscious judgment independent of the supra-mind. But being deprived of those organs upon which it depended for its movements relating to the outside world, it naturally felt and acted like one who, groping in the dark, knows not whither to turn.

This was the predicament in which the decerebrized frog found himself, hence his "muscular ennui". But that "his frog-ship" still retained conscious judgment and volition was proved by its being able to swallow food. In this act several mental processes were involved. First, the "instinct" of self-preservation. Second, judgment about the means to be employed to that end had to be exercised. Third, the will to act in conformity with its dictates asserted itself, with the result that instantaneous action was taken in the manner stated. The execution of these mental and physical processes demonstrates that the subminds know their respective functions nearly as well without as with the aid of the supra-mind, showing

that they act to a great extent independent of the latter; in fact, entirely so, excepting where they are under the direct control of the former, as, for instance, those of the "voluntary" muscular system. Yet even these are primarily under the conscious dominance of their cell-souls. Hence we may regard the subconsciousness as our principal mind, and our supra-consciousness as the secondary or subjective mentality.

CHAPTER 89

THE FREE-WILL CONTROVERSY. THE SOPHISTRY OF HOLDING ONE'S ORGANIZATION (AND NOT HIMSELF) RESPONSIBLE FOR HIS ACTS. A PERNICIOUS DOCTRINE. THE FATALISM INVOLVED A GROSS MATERIALISTIC SUPERSTITION. WE CARVE OUR OWN DESTINIES. THE INDIVIDUAL AND HIS ORGANIZATION IDENTICAL, ONE AND THE SAME ENTITY.

Haeckel's admission on page 16 that: "The world-enigma: the freedom of the will, is of the greatest practical importance," is blandly contradicted in the next paragraph in these words: "The seventh and the last—the Free-Will doctrine—is not an object for critical inquiry at all, for it is a pure dogma, based on an illusion, and has no real existence."

In the same easy, nonchalant manner Haeckel disposes of all other problems. Yet no one has ever labored under a greater delusion than in denying that every individual who is physically and mentally so constituted as to be capable of rational thought, is, if not restrained by exterior circumstances, at perfect liberty to act in accordance with his will, that is, as his judgment dictates, hence is responsible for all his acts. Haeckel denies this in the following declaration on page 131: "We now know that each act of the will is as fatally determined by the organization of the individual and as dependent on the momentary condition of his environment as every other psychic activity."

The conditions of his environments no doubt influence his judgment as to how to act in the premises, but yet he is at perfect liberty to exercise his will as he sees fit. There is nothing in his whole organization that keeps him either from performing a good or a bad deed. He is just as free to commit the former as the latter. But what one person may regard as a good deed, another may look upon as a bad or foolish one. For instance, a savage who

has been educated to believe that it is perfectly right to torture his prisoners before killing them, would consider a blank proposition to release them as preposterous in the extreme—nothing could change his determination to act as his will and inclinations dictate. Being at liberty to act as he wills, and nothing interfering, the fate of the captives is sealed.

But how in the case of the individual who deliberately does what he knows to be wrong? We are told in extenuation, that his (as well as the savage's) will is determined by his organization, hence cannot act differently than this dictates or compels him to act, and that since he had no choice in the organization of his body, he cannot be held responsible for any of its deeds, no matter how atrocious they may be. Here is where the perniciousness of this doctrine comes in—its implied exoneration from all responsibility for one's acts removing the principal barrier to the commission of all manner of evil deeds.

Says a writer in *New Thought:* "Personally I think Fatalism a ruinous theory—ruinous to morals, to progress, to happiness. Surely we are not here merely as toys, puppets, yet that must be one's conclusion if we accept the belief that our entire career is predestined, from the toothache of our childhood, to the heartache of maturity. If out of suffering we cannot forge our own weapons of defense, or find our own means of rescue, we might all better consider ourselves predestined to blow out our brains and so end the farce. But in my soul I feel that I am a free agent; that I have complete volition and that I must stand by my own life as its Creator—be it good or ill. Under fatalism, if I murder a man, why should I be repentant? It was no matter of my deciding. Or, if I rob, beat or maltreat my neighbor—*God planned it so.* (Or my organization; Haeckel.) Would that not be the answer? Can that be reconciled with an all-loving God? (Or with the dictates of our conscience? W.) It seems about as reasonable as a mother sending her child into the pantry to eat raspberry pie and then spanking her for it."

The position taken by Prof. Haeckel in the passage quoted from page 131 for his repudiation of free will, while appearing quite plausible from superficial viewpoints, will, nevertheless, not bear analysis. Thus we are told that the responsibility for one's acts must be placed upon the whole organization of the individual, but what is his organization but the sum total of the cells of which his body is composed? Unless it can be shown, then, that they, in

their capacity of consciously operating intelligences, *do not act of their own volition*, then it is evident that the *sum* of their psychic energy which manifests itself in the life or movements of the individual, is as free to act as it wills, as are the myriads of cell-souls of which it is composed. What, then, is there to warrant Haeckel's contention that "all of our acts are as fatally determined by our organization as are all other psychic activities"? The latter assertion (that all or any of our psychic activities are fatally determined) is as unwarranted an assumption as the former.

Prof. T. H. Huxley has compared the activities of each cell-soul to those of "an artist who strives with skilled manipulation to perfect his work", and M. Alfred Binet has credited them with "the majority of the intellectual and emotional faculties of the higher mammalia", as we have seen. As these statements have never been contested, on what rational grounds can we deny each cell-soul free-will in all its movements? Each one, then, acting of its own independent volition, it becomes evident that the whole combination which Haeckel recognizes as the organization of the individual, acts of its own free will. In the acts of the individual or person, the unrestrained will of his organization is expressed. That is to say: both are identical—one and the same entity; the organism being merged in the personality of the individual, or this into the organization. The only difference is in their designations—abstract concepts.

Neither Science nor Philosophy recognizes any distinction between the individual and his organization, so that when either one is designated or referred to, the other one is implied. Yet Haeckel and his school hold otherwise in virtually saying that "*we* have no freedom of the will because our *organizations* have deprived us of this freedom" which is equivalent to saying that "*we*" and our "organizations" are two distinct entities,—that "*we*" are slaves and our "*constitutions*" masters! But since Haeckel cannot dissociate the two, by what process of reasoning can he succeed in making the individual the slave of his organization, or his organization the master of the individual?

If there is any illusion in this controversy, (as stated by Haeckel in opening paragraph) it is all on the side of those who metaphysically disconnect the individual from his organism, and then hold the latter responsible for the former's deeds or misdeeds. Admitting the point for argument's sake, what would be the consequence? Sim-

ply that if a person commits a penal offense, *we would have to punish the organization instead of the individual!* So where is the difference?

And what "chance" would Haeckel's "Selective Divinity —Natural Selection" have with such a monstrosity as *Inexorable Fate?* Would it not be placed *hors du combat* at the first tilt? If "Fate" hangs over the fit and the unfit alike, then is *this* the determinant in the battles of life, and not physical prowess or mental superiority. These qualifications would go for naught if Fate had decreed which shall perish and which survive. Down upon such abject superstition—such a caricature of science!

There is no destiny save that which we carve out for ourselves of our own free will. And that we may do so unhampered and unrestrained, our senses and our reason were evolved by our biological minds which are as free to act as their individual cell-souls.

PART X.

WORLD-PROBLEMS.

CHAPTER 90.

IRELEDA SIBBRENA[1] PRESENTS HER VIEWS IN "THE CELESTIAL KEYS" OF WORLD-PROBLEMS. UNCONSCIOUS CEREBRATION A FALLACY. ANALOGIES BETWEEN OUR DUAL MINDS. HOW AUTHORESS MAKES HER DEVOIR(?) TO MATERIALISM. DRUMMOND SEES IN EVOLUTION "GOD'S METHOD OF CREATION." PROF. HUXLEY'S VIEWS. MATERIALISM LEFT INGLORIOUSLY IN REAR OF SCIENCE MARCHING TOWARDS ITS GOAL.

Ireleda Sibbrena, in *The Celestial Keys*[2], among other propositions relating to our subject, presents the following views under heading: "Dual Character Of Man," wherein the subminds are referred to as the "internal-intuitional," and the supra-minds as the "external-rational."

In her opening paragraph on page 184 the authoress writes: "Before passing to the consideration of the next stage (of human progress), the compound organic—that of final fruition, that in which Humanity is to fulfil its destiny—let us glance rapidly at this human integer called man, his

(1) The name of this author, a pseudonym, covers a name well known in America, and the ideas put forth in her volume are those of one of America's most distinguished thinkers.

(2) Messrs. Kegan Paul, Trench, Truebner & Co., London, 1909.

two distinct modes of action—the conscious rational and the subconscious intuitional.

"Much has been said of these two sides of mental activity, but they have never yet been the subject of a complete scientific analysis, notwithstanding the fragmentary explanations regarding what by some is called unconscious cerebration."

There can be no unconscious cerebration any more than there can be feeling without perception, motion without force to initiate and maintain it, or purpose without design. No mentation is conceivable without the exercise of conscious judgment. They are identical, hence in asserting the former, the latter is implied. We are no more justified in regarding any intelligent or purposive function as unconscious than we are in saying that our supra-mental actions are unconsciously performed.

Continuing, Ireleda Sibbrena writes: "The terms by which we will here designate these two sides of human nature are: first, the internal-intuitional; second, the external-rational. The one is a manifestation of the innate spontaneous forces of the soul; the other is a manifestation of conscious, calculating reason. The one is purely instinctive . . . while the other, dealing with finite phenomena, operates only upon given data: it is always conscious of its operations, and never operates without a conscious purpose. The one feels, conceives; the other realizes."

The authoress, in the above, notes rather more distinctions in our dual minds than the writer is able to perceive. Thus, instinct and intuition are always expressions of consciously operating cell-souls, as has been explained; the activities of both sub- and supra-minds are alike controlled by calculating reason—each one in its own peculiar sphere; both deal with certain conditions resulting in varied finite phenomena; both operate upon data at their immediate command; one is as fully cognizant of its purposes as the other; both conceive of new ideas and memorize them; both learn and profit by their experiences, as seen in the evolution of Nature and of Art; both realize all they have accomplished, yet are ever striving to reach higher planes of existence, in which the principle of self-development is recognized and to which all that is beautiful and grand in Nature can be distinctly traced. But the analogy between our internal and external mentalities does not end here, it even manifesting itself in the various infirmities and aberrations to which both are subject, as has been shown in Part V on "Malformations." The only material difference between our sub- and our supra-minds is that the former attend chiefly to the physiological functions

of the organism, while the latter take special cognizance of external affairs—standing guard like sentinels over the entire complication of individual cell-souls.

The author of *The Celestial Keys* "makes her *devoir*" to Materialism in this form on pages 198 and 199: "It is the external-rationalists who say: There is no God; who attempt to account for the Universe by the interaction of blind forces, . . . thus showing how wide of the cosmic mark still are our (monistic) 'scientists.' They have never seen a single object in human creation that was not the expression of a *thought,* even to so insignificant a thing as a toothpick, and yet, in their external-rational wisdom, they would deprive the universe of design—*thought.*

"Samuel Butler, in his *'Evolution, Old And New,'* writes: The unfortunate failure to see that evolution involves design and purpose as necessarily, and far more intelligibly, than the theological view of creation, has retarded our perception of many important facts for three-quarters of a century.'"

Canon Kingsley recognized and expressed the idea involved in these words: "Where there is an Evolution, there must be an Evolver." This principle is now tacidly accepted by all advanced theologians. "Positively," writes Henry Drummond on page 334 of *The Ascent Of Man,* "the idea of an immanent God, who is the God of Evolution, is infinitely grander than the occasional wonder-worker who is the God of an old theology. This older view is not only *less* worthy, but it is discredited by science. For the daily miracle of a flower, the courses of the stars, the upholding and sustaining of this great palpitating world, need a LIVING WILL as much as the creation of the atoms at the first. . . . If by the accumulation of irresistible evidence we are driven to accept Evolution as God's method of creation it is a mistaken policy to glory in what it cannot account for. The reason why men grudge to Evolution its claim to show how things were made, is the groundless fear that if we discover HOW they are made, we minimize their divinity . . . AS IF OUR IGNORANCE OF A THING WERE THE STAMP OF ITS DIVINITY. If God is left only to fill the gaps in our knowledge, where shall we be when these gaps are filled? . . . Evolution is not progress in matter. Matter cannot progress. It is progress in spirit. (In *mind,* in *intelligence.* W.) Whatever controversy rages as to the *factors* of Evolution, whatever mystery enshrouds its steps, no doubt exists of its goal. . . . The course of Nature is a rational course, and its end a moral end."

One of the "unperceived facts" alluded to by Samuel Butler is the failure of monistic science to recognize in the

individual cells of plants and animals the actual, potent and *consciously operating* up-builders of their own organisms, altho Prof. T. H. Huxley came at one time so near to their recognition that he identified their movements with those of "artists who, as with their plans before them, strive with skilled manipulation to perfect their work." (See chapter 4.) But the monistic dictum: "No brain, no mind, no consciousness," blinded him to the evidence of his own senses. At another time, when he declared that: "It is perfectly evident to me that consciousness is intimately associated with the phenomena of force and matter," he also failed to *recognize in this consciousness* the REALISTIC FACTORS OF EVOLUTION and proclaim them as such to the world.

Haeckel shares the same untenable position in conceding sensation and will to atoms and molecules, yet denying consciousness to them, as tho unconscious sensation and will were not a totally inconceivable proposition.

Admitting a self-evident truth, and then rejecting it almost in the same breath, is commented upon by Ireleda Sibbrena in these words on pages 193 and 194: "They all feel the same truths; that is, they all alike perceive the spiritual side of the universe as yet unfelt by the masses, and they strive, each in his own way, confusedly, dimly to seize upon these abstract conceptions—to reduce them to verbal shape. They get fine glimpses from time to time and then the veil falls and they are again in darkness. If proof were needed that not one of these speculators upon the Unknown has yet caught the *integral glimpse*, we have but to note how the march of progress leaves them all behind, and must continue to leave them behind while they are content to elaborate *individual, personal* theories. *No philosophy can stand which is not based upon Cosmic law.*"

What more vital law is regnant in all departments of Nature than that: "Like begets like—as the parent, so the offspring," from which the correlated principles may be deduced that *there can* be *no life but from life, and* NO CONSCIOUSNESS BUT FROM CONSCIOUSNESS. Upon this universal law is, indeed, the postulate of the sensation and will of atoms based, a postulate accepted by Prof. Haeckel "and many other scientists," (p. 220, World-Riddles), but the light thus momentarily shed upon the problems of existence is turned by them into Egyptian darkness by plunging it into the materialistic abyss of blind, mechanical agencies, purely physical processes and chemical reactions, which may produce their like, but never that which is so radically foreign to their own nature as is consciousness. Hence all known forms of mind must have a cognate source of their own in the Cosmos,

and this basic consciousness admitted—call it God, Prosych-dynamis or by any other name—we then have an adequate foundation from which not only the sub- and supra-minds can be traced, but also all other phenomena in which purposive design is revealed; and what is there, from the vibratory or other motions of atoms, up to the revolutions of suns and planets in which some purpose essential in the Economy of Nature is not clearly manifested? Failing to recognize this design, Monism is left ingloriously in the rear of "Science marching towards its goal."

CHAPTER 91

RELATION OF WOMAN TO HUMAN PROGRESS REVIEWED BY AUTHORESS OF "THE CELESTIAL KEYS." A FEMININE PROTEST AGAINST BEING REDUCED TO A POLITICAL NONENTITY. WHY SUBMINDS SHOULD RANK HIGHEST IN DOMAIN OF PSYCHOLOGY. MERITS AND DEMERITS OF CHRISTIAN SCIENCE ANALYZED. INSTINCT AND INTUITION THE "STILL SMALL VOICE" OF THE SUBCONSCIOUSNESS. THE ARTS AND SCIENCES OF MAN COMPARED WITH THOSE OF THE TELEO-MECHANICS OF NATURE. RATIONALE OF MENTAL HEALING. INSPIRATION. SUGGESTIVE THERAPEUTICS.

The relation of woman to Human Progress is presented on pages 202 to 206, from which we cite the following passages: "We do not need to be told that these two great contrasting principles find themselves as definitely represented in sex as elsewhere. The dominating internal-intuitional of woman is proverbial, and has won for her a certain recognition of superiority over her slower and more painstaking brother where spontaneous insight has its advantages. And how beautifully do we see in woman's historic position one of those marvelous calculations of Nature which we are often slow to understand. It is upon woman, the great internal-intuitional artist, that has depended the conservation of the race. Therefore the importance of safe-guarding, through her, those psychic qualities which count for its upward growth; and cruel as social conditions have been for her thus far, they have been inevitable in evolutionary economy. Had she been permitted to take an external-rational, active part in the crude battle of life, the generations would have been compromised."

Even as Huxley's "unseen artist," the submind of a fecundated cell, is the microcosm which initiated the process of cell-formation resulting in the up-building of a new organism, so is woman, the great internal-intuitional artist, the

macrocosm in whom all the essentials are concentrated to complete the work which culminated in the creation of Man. As for the cruel social conditions to which the authoress refers, the brutality of the Past is "of the things that were" (to a great extent, at least,) and with our advancing civilization there is is no excuse for still regarding woman as a political nullity. Those with whom "Might was Right" in the early days, availed themselves of her naturally docile disposition to reduce her to a state of subordinacy from which she is now on the verge of freeing herself. The very passiveness of the chief instrument the teleo-mechanics of Nature devised for the propagation of the race—which passiveness has in it a true nobility to which the average male is a stranger—should induce him to allow her fuller scope in all affairs of life, thereby propitiating the elevation of the race. Yet by some inexplicable freak of feminine nature, a comparative few prefer to remain nullities a while longer. What progress was there ever made that did not encounter obstacles from most unexpected quarters?

"Finally," continues the authoress, "if we follow up this presentation of the two distinct sides of human nature, what do we find? We find a bewildered internal-intuitional, conscious that it is being wronged in some way, but powerless to analyze the situation; while confronting it we find an external-rational quite as impotent in its way, although much better satisfied with itself and greatly disposed to arrogate to itself the palm of superiority."

The analogue in Nature to the above view may be found in the subjective attitude in which the subminds have been placed by our arrogant supra-minds, Psychologists usually referring to them as the "secondary" or "subjective" minds, while regarding the external-rational as the principal consciousness. Yet it appears to be a self-evident proposition that those forms of intelligence which were the active, potent factors in the up-building of the Organic Kingdom, should be ranked above those which played but an indirect role in these processes.

"Meanwhile," observes Ireleda Sibbrena, "the internal-intuitional stands aloof, the aggrieved victim of external-rational aggression. It struggles ignorantly to resist that scientific tide which cannot be resisted and which it cannot understand, although destined, sooner or later, to be carried triumphantly onward upon its more enlightened bosom."

And JUSTICE exclaims *Amen!* Yet, strange to say, there are a few of her own sex who oppose the efforts made to break the bonds of social and political inequality which selfish men have forged around them (with a view to securing the

spoils of office and other emoluments for themselves), but which those who love "fair play" would free them of. These victims of male aggression, mis-led by a false education, resemble the poor, terror-stricken women confined in burning buildings, who, rather than be carried by heroic firemen to a place of safety, hurl themselves head-long out of the windows to be crushed to death on the pavements below. But to the credit of women in general be it said that those who would thus stem the tide of Progress that will carry woman safely onward upon Science's more enlightened bosom and place her on a plane of social and political equality with man, are the exception rather than the rule.

In her equitable critique of Christian Science, the author of *"The Celestial Keys"* says on pages 218 to 222: "The name 'Christian Science' is a misnomer to begin with, since it is neither Christian nor science. That title (Christian) has been so variously and conflictingly applied through the centuries, it has been invoked in the interest of such a multitude of heresies, each one claiming exclusive right thereto, that any attempt today to assume a representative *role* in the name of Christ can scarcely be justified. And the less so in this particular case, since the person advancing such claim has not hesitated to place herself on the same lofty pedestal. Regarding the second term in this compound, high-sounding title, argument is scarcely necessary. The word 'science" finds much modern favour, and has come to be bandied about almost as loosely as the word 'Christian,' but to undertake to unite the two is the acme of absurdity. Science—that is, knowledge of universal law—was not dreamed of in the time of Christ. The great prophets of antiquity rendered themselves account of nothing *intellectually*. They operated from the internal-intuitional alone; their 'science' was but the 'still small voice,' and being much nearer to Nature than we are today, they 'felt' many truths which generations of external-rational toilers have since striven to establish intellectually."

The *still small voice* alluded to will be found, on analysis, to be the intuitive suggestion of the subminds to their allied supra-minds, both entering *en rapport* under given neuronic conditions, a psychic phenomenon much more frequent with those who are "nearer to Nature" than we are, that is, in those beings of low or high degree in which the alienation of their dual minds has *not* been fully established, as has been explained in chapters 85 and 86. Hence in the highest cultivated intellects the "we' sma' voice" of the cell-souls makes itself rarely heard, it having become nearly extinct where the supra-minds have full sway, these perceiving it only in the form of their various appetites or other physical desires.

In the brute creation this voice is heard (or felt) in more mandatory terms, since their very existence depends upon it. In us the necessity for such submental guidance has been supplanted in a great measure by the acquisition of knowledge and education.

Admitting, then, that the science of ancient philosophers was to a great extent the translated voice of the subconsciousness commonly called *"Inspiration,"* revealing truths that were beyond the ken of the supra-minds in their normal states, we may conclude that the same kind of intuitive *"science"* is an inherited property of the inferior orders of life, of which may be mentioned, as conspicuous examples, bees, ants and spiders, whose scientific attainments in chemically elaborating the crude material at their disposal for their own individual welfare (as far as lies within their limited powers) far exceeds in complexity, delicacy and construction anything ever achieved by the supra-mind of man. All of his arts and sciences dwindle into utter insignificance when compared with those of the teleo-mechanics of Nature.

"So much for one point of view," writes Ireleda Sibbrena. "On the other hand, whatever may have been the original motives underlying this movement, or its mistakes, it is certain that its social results have been immense for good. Mrs. Eddy has unquestionably done much toward the lifting of her generation, and that for the very happy reason that the philosophy of Christian Science was adapted to the wants of a great mass of minds still in the realm of unreflecting sentiment. It appealed to their vulnerable side, and aroused a latent spiritual strength not before suspected. . . . History will place Mrs. Eddy in her true light, and history will rank her, as well, among the most potent instruments of the spiritual progress of her day. . . . That she has (consciously or unconsciously) attributed to herself *originality* in a sphere as old as the spirit of the race, affects not its practical value. She, with the help of her distinguished teacher, has succeeded in putting a very old principle into a new and attractive dress for the edification of thousands in need of such; and it is in this that consists her merit. Had she named her philosophy 'a perception of a profound scientific fact' it would have been more logical, but much less taking with the sentimental world."

Another proper appellation for Christian Science would be the *Science of Optimism,* for upon the principles: deny evil, ignore pain, let your thoughts revel only in the good, the beautiful, the grand (as far as lies in your power) Mrs. Eddy's doctrine is based, and that these principles have a most salutary effect upon both mind and body is generally

admitted. Mrs. E. became aware of this fact at an early day in her life, and, determined to make the most of it, she formulated the elements involved into a science, giving it a popular name and surrounding it with the aureole of the dominant religion, knowing that thereby she could the sooner reach the masses. How well she succeeded is a matter of history. Unprejudiced minds will cull the wheat from the chaff in her "science" and credit it with whatever good it has done in the world. Whether it outweighs the harm it has done in cases which succumbed to Christian Science treatments when they would probably have been saved by medical skill, may never be known. If Mrs. Eddy's practitioners would exclude children and adults who cannot possibly be brought under their "benign" (?) semi-hypnotic influence, the world would owe them a greater debt of gratitude than can be accorded them now. A homeopathic pill will do this class of patients more good than all the doses of Christian Science that can be administered to them. But Mrs. Eddy knows full well that to exclude even an infant from the zone of her pathological influence would be fatal to her claims as a *divine* healer. So the little darlings will have to suffer in consequence.

The *Rationale* of the mode of operation of these and other forms of mental healing is that those supra-minds which are susceptible to the influence of these healers, enter into immediate communion with their allied subminds which then proceed in accordance with the suggestions received from these extraneous sources to restore the afflicted organs or parts as far as lies within their power. Beyond these circumscribed limits no Christian Science, Faith-cure or other form of *Suggestive Therapeutics* can possibly go without assuming supernatural intervention, and of such miraculously effected cures no authenticated cases are known. And in view of the fact that *Faith* is the only efficient remedial agent in all kinds of mental healing, the futility of placing any one deficient in the faculty of *imagination* under its influence, must be apparent.

CHAPTER 92

"Wer niecht liebt Wein, Weib und Gesang,
Der bleibt ein Narr sein Lebenlang."* (Luther.)

ARTHUR BRISBANE ON PROHIBITION VS. TEMPERANCE. STATISTICS PROVING THAT PROHIBITION INCREASES DRUNKENNESS. ALCOHOL, LIKE FIRE, A GOOD SERVANT, BUT A BAD MASTER. PREVENTION AND CURE OF TUBERCULOSIS. THE NEWARK, OHIO, TRAGEDY AND RESPONSIBILITY FOR SAME. LOCAL OPTION (MUNICIPAL SELF-GOVERNMENT) SOLUTION OF LIQUOR-PROBLEM. PROHIBITION UN-DEMOCRATIC.

In introducing this subject, which in its pathological features is directly related to the functions of the biological minds, attention is called to the following extracts from an editorial by Mr. Arthur Brisbane, President and Editor in Chief of the *New York Evening Journal*:

"This newspaper, advocating true temperance, has said that prohibition is *not* temperate for two reasons. First, it represents the efforts of a minority to control a majority, and second, absolute prohibition increases the use of whiskey and increases drunkenness *because it prevents the consumption of beer and wine, relatively harmless stimulants.* . . . Thus while in October, 1909, the people drank less beer by 200,000 barrels than they drank in the same month in 1908, in October, 1909, they drank more ardent spirits—whiskey, gin, brandy, etc.—by 1,500,000 barrels than they did in October, 1908. This decrease in the consumption of beer, and increase in the consumption of whiskey, are due absolutely to the prohibition movement, and this cannot be denied.

"We ask earnest prohibitionists these questions: Do you think it is a good thing for the people of the United States to cut down their consumption of beer by 200,000 barrels, and increase their consumption of whiskey by 1,500,000 barrels in one month?

"Do you question the truth of the statement that the habitual drinker of beer and wine is usually a temperate man, as proved in Germany, France and Italy? Can you deny that the prohibition movement, which makes men hypocrites—compelling them to drink on the sly—which drives out beer

*"Who does not love wine, wife and song,
Remains a fool his whole life-long."

NOTE.—Harper's Weekly in its issue of January 9, 1909, referred to Mr. Brisbane as: "The most highly paid of active journalists whose salary as an editorial writer for the Hearst newspapers exceeds that of the president of the United States."

and wine and INCREASES *the use of alcoholic beverages by a million and a half barrels per month, is a* SERIOUS MENACE TO THE SOBRIETY OF THE PEOPLE? If the Prohibitionists wish to act wisely, let them encourage the sale of beer and wine, freeing those mild stimulants from excessive taxation and high license. This would be a great benefit to the country, a real sign of TRUE TEMPERANCE."

The above statistics speak for themselves and show beyond all possible doubt that prohibition is a total failure in that it increases instead of diminishes the use of ardent spirits. Of these it may be truly said that: Alcohol, like fire, is a good servant, but a bad master. Yet, because both are bad masters when they get the upperhand of us, is this any reason why we should not employ them as good servants when in need of them? If some people exercise no judgment in their use, should we, therefore, be deprived of the benefits they may be to us? Why should the majority of people be made to suffer for the folly of a comparatively few individuals? To stamp out the evil of intemperance, enforce the laws against drunkenness. Let the penalty for this evil or vice fall on the guilty, not on the innocent. To prohibit the use of these beverages in any State altogether, would result in its depopulation. Only Puritans, doctors and undertakers would remain—the two latter for the big harvests they would reap from the total abstainers. For there is hardly a physician in any community who does not admit that the moderate use of beverages containing a certain per cent of alcohol is decidedly beneficial and conducive to longevity.

As a rule, women are more benefited by their use than men, owing to their peculiar tendency to tone up the female system. This accounts for women raised in countries where beers and wines are drank almost as freely as water, being noted for their robust health. What a pity that a false sentiment should deprive American women of the same benefits. For is it not a fact that a *sickly* woman who drinks all the *real* beer or wines she wants (with an occasional whiskey-toddy thrown in), is an anomaly, a rarity—"as scarce, almost, as hens' teeth"?! And what is more effective as a preventive and cure of tuberculosis than these very beverages, supplemented with plenty of pure air and water, gentle outdoor exercise, and the cultivation of good spirits.

A noted physician has estimated that out of every hundred persons, ninety eat to excess, while only two drink to excess, the remainder eating and drinking moderately. If, therefore, prohibitionists would devote their time to the reformation of *gluttons,* and let the fool-killer attend to the *inebriates,* their labors would not have been in vain.

Prohibition is like destroying the whole body to eradicate a cancer. Why not kill the cancer and save the body by enacting stricter laws against drunkenness? That would strike the evil at the root, but do not make that an evil which is a blessing if used judiciously—one of Nature's greatest gifts to humanity.

Compulsory abstinence is an insult to the intelligence of the American people. It has the audacity to say to a hundred million people what they must drink or not drink. Why not go a step further and say that they are incapable of self-government, disfranchise them at once and done with? If we are forbidden to eat and drink what we want, what has become of our liberties?

This is, no doubt, the view the citizens of Newark, Ohio, took of the situation prior to the tragedy which cost two lives. The strong sentiment against prohibition prevalent there, could not brook the idea of being dictated to by a few whom they looked upon as fanatical cranks possessed of only one idea and that an extremely narrow and perverted one, and who sought to deprive them of what is an absolute necessity to thousands of its people. Being a manufacturing city, it contains, among its other industries, foundries and stove-factories, whose workmen, sweltering in the intense heat of their furnaces, need an occasional drink of something more substantial than water as much as the food they eat. In fact it is a common saying among them that a glass of beer, wine or whiskey is "both vittels and drink" to them. To deprive these men of one of the necessities of life would not only compel many to leave the city, but also endanger the very existence of its great industries.

The state of the public mind can, therefore, be better imagined than described when in July, 1910, a raid was made on some of the saloons by detectives in the employ of the Anti-Saloon League of Ohio, during which one of them shot down a saloon-keeper for no other "crime" than that of defending his rights as an American citizen. As a result of this overt act, public indignation could no longer be restrained and it burst forth in all its fury, altho the mayor, Herbert Atherton, is credited even by the Prohibition Press with having done all he could to quiet the populace, many giving way to his impassioned appeals to let the law take its course, they dispersing to their homes before the uncontrollable element had wreaked its vengeance upon one whom they looked upon as a willful murderer of a popular citizen.

How strong the sentiment against Prohibition is in that city may be seen from the fact that the hired mercenaries of the League who tried to force an obnoxious law upon its

people, could not find a single officer willing to issue warrants against the saloon-keepers, so that they had to go to an adjacent town to obtain them. Hence when they ventured to deprive nearly four score heads of families of their means of livelihood, they must have known that they took their lives into their own hands. If they did not know it, they should be pitied for their stupidity. Ferreting out a crime is one thing, but interfering with the lawful commerce of a city from nothing but fanatical zeal and MERCENARY MOTIVES (as we shall see further on) is something to which no true American will submit. And when it comes to depriving ninety-nine intelligent men and women out of every hundred of one of the necessities of life which they would not abuse if they lived to be as old as Methuselah, because just one individual in their midst takes an occasional drop or two too much, the limit of human endurance for such an *un*-American law is reached.

I say un-American because Prohibitionists sail under the false colors of Democracy and Republicanism. They have no more right to call themselves democrats or republicans than the Imperialists of Europe have to style themselves Socialists. These bogus democrats and sham republicans go even further in their despotism than the tyrants of Russia, Asia and Africa who would *not dare* to deprive their subjects of one of the necessities of life. Is this tyranny to be inflicted upon the American nation?

But fortunately they cannot deprive us of the ballot. The solution of the Liquor-Problem is, therefore, evidently in local option, that is, municipal self-government. If, then, the majority in a city wants open saloons, let it have them, while if it does not want them, but prefers to build a stone wall around their town to keep every one from coming in or going out, let it have that too. If this had been in force in Ohio, the Newark tragedy would not have occurred. More are sure to follow where corrupt legislatures force compulsory abstinence laws upon cities opposed to them. What else can be expected in this *"Land of the* FREE *and Home of the* BRAVE"?

As an example let us suppose that some one in a growing town should propose to leave the question of water and light, sanitary sewerage, public buildings, SALOONS and other essentials to a great metropolis, to a vote of the people of the COUNTY or STATE. Would he not be regarded as rather weak in his "upper story"? Yet that is a sample of Ohio statesmanship which culminated in the Newark tragedy—the *voters of* the *county having voted that city "dry"! ! !* Why! First, because they were envious of its prosperity, and secondly,

THERE ARE VAST COMMERCIAL INTERESTS AT STAKE IN CLOSING THE SALOONS, as will be shown further on.

Admitting that open saloons lead to an occasional case of drunkenness and disorderly conduct, we have no more MORAL right to close them on that account than we have to close all the banks for an occasional failure, or all the stores and shops because for an occasional crooked deal therein, or all the lawyers' offices because some take fees from both parties to a suit, or — — — all the churches because occasionally even priests and ministers of the gospel leave the paths of righteousness. This is not a reflection on the high mission of the Church, but only intended to "point a moral" in consistency.

And when it comes to comparing the intrinsic merits of brewed or distilled beverages with the so-called "soft-drinks" doctored with cocaine, morphine or other noxious habit-forming drugs, Heaven save us from the latter! Not one redeeming feature about them. While the former, owing to a certain per cent of alcohol they contain, are indispensible in Pharmacy—which alone speaks volumes for their virtues—who ever heard of a physician prescribing a cocaine cola, lemon pop or other "temperance drinks" to a patient?!—evidence that *their* virtues are "MOST CONSPICUOUS BY THEIR ABSENCE."

We should also remember that most of the evil of intemperance is directly due to our lamentable social and economical (political) conditions, hence with their amelioration the excessive use of spirituous stimulants will gradually disappear. Remove the *cause* of drunkenness, and you *strike the evil at the root.* If, then, Prohibitionists would turn their attention to alleviating the miseries of mankind, the greatest incentive to intemperance would vanish like mist before the rising sun.

We will next consider the venal motives that are at the bottom of the present prohibition movement, showing what the hypocritical cant of its promoters about furthering "civic virtue and a moral uplift" amounts to in view of the fact that most of these prohibition-howlers are never without the "ardent" themselves, evidence that they have as much real faith in its health-preserving qualities as the vast majority of sensible people have. And if they really believed that their denunciations of the "liquor traffic" would ever result in their being unable to procure it themselves, they would sooner blow their brains out than to utter another word against it. But to deprive others of the indispensable is another matter, especially when they *"feather their own nests"* thereby.

CHAPTER 93

THE COMMERCIAL INTERESTS INVOLVED IN, AND BACK OF, THE PROHIBITION MOVEMENT. A ONCE WORTHY CAUSE DEGENERATED INTO A MONSTROUS COMBINE OF MILLIONAIRE SOFT-DRINK MANUFACTURERS AND OTHERS TO RUIN USEFUL INDUSTRIES BY THE MOST UNSCRUPULOUS METHODS KNOWN IN COMPETITIVE WARFARE. THOMAS E. WATSON'S DENUNCIATION OF COCA COLA AS RUINOUS TO MIND AND BODY. INCREASE OF THE DREAD DISEASE, PELLAGRA, IN PROHIBITION STATES. HOKE SMITH SHOWS "CLOVEN HOOF." LAW AND ORDER LEAGUES CATSPAWS FOR SOFT-DRINK-BILLION-DOLLAR COMBINE.

But there is a more serious phase to be considered in the Prohibition movement, namely, that while primarily its originators aimed solely to abolish the evil of intemperance—adopting for their watchword: *Temperance,* not *Prohibition*—vast moneyed interests are now promoting it from purely selfish motives.

An idea of these new interests may be obtained from an extensive full-page "write-up" which appeared not long ago in an Atlanta, Georgia, paper, of one of the largest soft-drink manufactories in the country, stating that its proprietors "spent thousands of dollars annually to aid in the suppression of the liquor-traffic." This is, unquestionably, but one instance of thousands of similar concerns which are contributing their share towards raising CORRUPTION-FUNDS for that very purpose. Now what can be the motive of expending these vast sums of money but the sordid and mercenary one of SQUELCHING COMPETITION in the same line of trade—a motive so vile that it has been declared criminal and punishable under the Sherman ANTI-TRUST law!

What was thus at one time a laudable endeavor to curb the evil of intemperance, HAS BEEN TAKEN ADVANTAGE OF BY GREEDY AND UNSCRUPULOUS PARTIES TO DRIVE UNDESIRABLE COMPETITION OUT OF THE FIELD AND ENRICH THEMSELVES AT THE EXPENSE OF LEGITIMATE INDUSTRIES. In other words: The original agitation for the *temperate* use of wines, beers and spirituous liquors has gradually DEGENERATED into a MONSTROUS COMBINATION of COMMERCIAL INTERESTS formed for the object of ruining rival concerns if the UNLIMITED USE OF MONEY FOR CORRUPTING LEGISLATURES AND MAINTAINING A VENAL PROHIBITION-PRESS PAID TO MANUFACTURE SENTIMENT against these beverages and the open

saloon thru the grossest exaggeration, falsification, villification and hypocrisy will do it!

That the CORRUPTION-FUNDS thus accumulated to squelch competition by fair means or foul are of no mean proportions may be judged from the fact that the entire output of the "pop" factories—one or more of which are located in almost every city of the United States—closely approximates that of all the breweries and distilleries combined. This fact, more than any other, reveals what the prohibition movement means to the soft-drink manufacturers. It simply means that this agitation *tends* to turn all the profits made by the producers of wines, beers and liquors INTO THEIR OWN POCKETS!!! And as this means many millions of dollars to them, the power these corporations wield over the PRESS of the country to mould public opinion to their liking, cannot be overestimated. That these Prohibition-howlers would not waste their talents in that direction without demanding their share of the spoils in palming off upon an unsuspecting public concoctions of sweetened water and carbolic-acid-gas doped perhaps with cocaine, morphine or other noxious drugs, is not at all likely. For what purpose was the Corruption-fund, of which the sums spent by the Georgia concern probably formed the nucleus, expended? Did it not "let the cat out of the bag" when it confessed that it went toward the "suppression of the liquor-traffic"?

But these soft-drink manufacturers are not the only ones who are greatly benefited by the total abstinence craze. There are, for instance, the Express and Railroad companies who now handle the output of the breweries, distilleries and vineyards in vastly greater quantities than the open saloons ever did—as the statistics presented in the preceding chapter have clearly shown, proving that the prohibition movement is the most monstrous fizzle of the age. Then there are the doctors who can well afford to contribute their share toward swelling the campaign-fund against the open saloon, since many diseases are quickly "nipped in the bud" by a timely dram of whiskey taken on an *empty stomach,* please remember. Likewise the druggists whose trade in patent medicines and other nostrums to ward off the "ills that flesh is heir to" must have greatly increased wherever the saloons are closed. Other beneficiaries are the undertakers since many people who are so unfortunate as to be unable to procure the prohibited goods —Nature's most efficient safe-guards against attacks of disease—cannot avail themselves of the good, old saying: "Prevention is better than cure," hence the rate of mortality in "dry" communities has, no doubt, greatly increased.

What but thru the most corrupt means could laws have

been enacted which compelled every one who required such preventives to first pay a physician half a dollar or more for a prescription before he could procure the needed "medicine" at a drug-store where he was bled to the tune of another half a dollar to get his prescription filled, thus being held up to pay one dollar for what he could formerly obtain in any saloon for a dime? Do such laws not cry to Heaven for vengeance upon those who inflicted such iniquities upon the people? Would laws which thus rob the poor, hardworking laboring man to whom such stimulants are an absolute necessity at times, have been enacted if it were not for a vast CORRUPTION-FUND raised and distributed by those who are *pecuniarily* benefited by them?

Now rather than submit to the extortion practiced upon him by these enactments, he orders what he needs by the quart, gallon or keg, and right here is where the perniciousness of these laws comes in. Having intoxicants now within easy reach, he is continually exposed to the temptation to drink to excess. And not only himself, but also every one in his household. Prohibition thus does the very thing it seeks to prevent—makes drunkards of people. This is again shown by the fact that from July, 1909, to July, 1910, seventeen million dollars MORE revenue was derived by the government from these sources than the year before. What else could have been expected? If people cannot obtain what they want in small quantities, they are obliged to buy them in large ones. The above statistics and those presented at the beginning of the preceding chapter prove it.

And what would the Prohibitionists "give us instead" of beverages that are perfectly harmless, nay, beneficial if used in such small quantities as only the open saloon can supply? They would substitute the so-called "soft" drinks, many of which are "doctored" with cocaine, morphine or other habit-forming drugs which have a tendency to make physical wrecks of most people using them. Thus Thomas E. Watson says in his *Jeffersonian* magazine that "Coca-cola is doing more harm to the minds, morals and physiques of men, women and children than all the barrooms and all the fake-doctors ever did." Why not then start a prohibition-crusade against these concoctions which no one having any regard for his health would drink himself, much less offer to a friend or sweetheart? Yet the Prohibition Press is clandestinely educating the people up to *"swigging this swill"* in lieu of the wholesome drinks any one may procure in places which refined ladies in most cities do not hesitate one instant to enter and call for. And is it not "public property" that the vast majority of *professed* total abstainers are never without the ardent themselves, show-

ing how sincere they are in their denunciations of it, and that they are actuated by motives of a purely mercenary character in creating a sentiment against what they would not do without themselves?

And note the hypocrisy of the political leaders of the prohibition movement in professing to uphold good government, civic virtue and the moral uplift. *"Good government"* in the statesmanship which, by allowing *counties* to vote *cities dry,"* caused the Newark, Ohio, tragedy! *"Civic virtue"* in compelling the poor, hardworking laboring man to pay a physician a dollar for a "prescription" to procure at a drug-store for another dollar a "medicine" to ward off an attack of sickness, which "medicine" he could have obtained in any barroom for a dime! *"Moral uplift"* in forcing people to buy by the quart, gallon or keg prohibited (?) liquors which they could formerly buy in any saloon in the *smallest quantities,* thus making drunkards of them? Down upon such kinds of good government, civic virtues and moral uplifts! And Hoke Smith, the prohibition Governor of Georgia, has the unmitigated GALL to call this hypocritical cant: "progressive democracy," fancying that he can conceal the CLOVEN HOOF thereby, and thinking, no doubt, that by sailing under these false colors he can fool democrats into joining the prohibition ranks! Such kind of democracy is the veriest retrogression into mediæval TYRANNY, and they KNOW IT!!!

On the other hand, the *sincere* Prohibitionists are UNWITTINGLY playing into the hands of the GRAND COMBINE of cocaine cola and other noxious drink producers, not realizing the harm they thereby do to the minds, morals and physiques of men, women and children.

Evidently, our internal-intuitional mentalities, popularly known as the subconscious minds, *have no use* for these concoctions. How many people have become opium, morphine or cocaine "fiends" thru their use, God only knows. And it is not good, honest corn, either in its native or distilled state, that produces the dread disease, pellagra, as has been supposed, for it is a highly significant fact that it has made headway only in prohibition districts, while outside of them it is practically unknown.

Of President Lincoln it was said that when urged to discharge General Grant for his occasional use of beer, wine or whiskey, he asked what brands of liquors he used so he could order some for himself and his other generals. He knew what the TEMPERATE use of these beverages would do for a person.

How well the Prohibitory law works in Kansas (for the PROHIBS) may be seen from the following editorial from the

Kansas City Star: "We predict that the investigators of the secret room in the basement of the City Hall of Wichita will never make a report. It was found that confiscated liquor was consumed there by numerous persons, including city officials and their friends. It involved so many persons that the committee will not deem it of benefit to make it public."

Commenting on the above, a contemporary remarked: "Employed to enforce the law, they first stole the confiscated liquor, and then drank it themselves." Thus it appears that a goodly majority of the Prohibs are *"dry"* in public, and *"wet"* in private. But *"soft"* drinks ruinous to body and mind, and made by a billion-dollar trust with a profit of 500 per cent, are good enough for the "common" people—don't you know!

And don't doctors and druggists "want to live, too"? This was shown recently in a Birmingham, Ala., police court, where a druggist harangued the mayor and chief of police, demanding protection against the liquor dealers who interfere with his trade because most people prefer breaking up or preventing an attack of sickness with a whiskey-toddy than with a nostrum of doubtful medical value. This is but a single case of thousands of others that could be cited showing that purely selfish motives are backing the Prohibition movement. And vaccination, too, which is an infinitely worse craze than the other.

From purely sanitary considerations no one should be without whiskey, if for no other reason than to be prepared for any emergency, or to break up a cold to which all are subject. It should then be used as a hot sling, preferably with a capsule of quinine. Here is where the good old saying comes in: "A stitch in time saves nine." Through this simple self-treatment the writer has kept out of the hands of doctors for fifty years, and he is now seventy without an ache or a pain in his body. His "better half" considers these tonics equally indispensable to her health.

Our honest and sincere temperance workers should bear in mind that "forbidden fruit tastes sweet," which is one reason why prohibition incites to drunkenness. But the majority of the members of the Law and Order Leagues and other Temperance Unions are the innocent "catspaws" of one of the most greedy and unscrupulous monopolies of this country, by unwittingly creating a demand for concoctions "ruinous to the minds, morals and physiques of men, women and children."

Now why can the same degree of civic virtue not be accorded to him who dispenses wholesome beverages in quantities to suit (other conditions being equal), as to him who deals in nostrums, the use of which in smaller quantities even has wrecked the lives of millions of people.

CHAPTER 94.

THE HORRORS OF VACCINATION. THE EVILS CARRIED IN ITS TRAIN. GREATEST CURSE INFLICTED UPON MANKIND. THOUSANDS PERISH IN UNUTTERABLE AGONY OF SYPHILIS CONTRACTED THRU VACCINATION, WHILE OTHERS ARE MADE PHYSICAL WRECKS FOR LIFE. YET ALL COULD HAVE BEEN SAVED FROM, OR CURED OF, SMALL-POX BY SIMPLE HOUSEHOLD REMEDY. A MEDICAL SUPERSTITION WHICH CRIES TO HEAVEN FOR REDRESS.

Vaccination being another world-problem having a direct bearing upon the nature and operations of the subconscious minds, the writer would say that when formerly pure cow's virus was used, it may in rare cases have acted as a preventive of small-pox, tho even then it was liable to so vitiate the blood of the patient as to render him subject to worse maladies, since *variola* is nothing but an effort of the subminds to purge the system of impurities which have accumulated and must be expelled chiefly thru the skin owing to partial paralysis of the visceral eliminative organs. Hence the practice of still further vitiating the blood by injecting corrupt matter from man or beast into it, is a very questionable one on the face of it, especially since it has been found that the lymph can be in the easiest and least expensive way obtained from the pustules formed on the small-pox patients regardless of whether these were tainted with scrofula, syphilis or other loathsome and malignant diseases or not. That the writer has not drawn upon his imagination for his facts (only a small fraction of which can be presented herein), nor is in any way exaggerating, may be seen from the following extracts taken from a lengthy communication of Moncure D. Conway, correspondent in London for the *Cincinnati Commercial,* reprinted in the *Chicago Times* of May 10, 1879:

"Dr. W. J. Collins, for twelve years vaccine physician in Edinburg and London, writes: 'If I had the desire to describe one-third of the victims ruined by vaccination, the blood would stand still in your veins.' Dr. Stowell, with still larger experience, declares 'vaccination not only an illusion, but a downright curse to Humanity.' Dr. Hitchman of Liverpool says: 'I have seen hundreds of children killed by vaccination.' The *Medical Times And Gazette* declares that consumption has widely spread since the introduction of vaccination.' The director of the great London cancer hospital

asserts that many cases of cancer originate from this soul and body destroying practice. Dr. Ricord, a distinguished French physician, admits that syphilis is often transmitted by vaccination. Dr. Hutchinson stated before a parliamentary commission that out of thirteen children he vaccinated with lymph from a public institution (obtained, of course, from patients afflicted with blood-poison), eleven exhibited the primary sores of syphilitic contagion two months after. Dr Brudenell Carter declared that a large proportion of inherited syphilis are of vaccinal origin. Dr. Thomas Wilson writes to the *Lancet*: 'It is useless to deny that vaccination by human lymph involves danger of scrofulous and syphilitic inoculation.' "

Mr. Conway further relates that Dr. Edward Ballard, medical inspector of the government board, published a pamphlet in which he confessed that of forty-six children vaccinated by him, thirty-nine became afflicted with syphilis. Cool, isn't it!? But such revolting facts are looked upon with indifference—no steps being taken to guard against the use of lymph containing the germs of these deadly diseases, the impure being more readily obtained than the pure, if this term can be applied to what *in its very nature* is the quintessence of animal corruption. Does it not seem that these practitioners played with the lives of the children they sacrificed on the altar of a horrid medical superstition; that they did not consider them of as much value or consequence as they did the cattle from which the death-dealing and lives-wrecking virus was taken, and which was still further defiled by passing it thru human systems reeking with the most loathsome of all diseases?

"M. Morone," continues the relator of these shocking details, "vaccinated a number of children of whom twenty-three, *whose parents were known to be healthy,* were infected with syphilis (which at that time meant sure death in its most horrible form!), and the nurses were in their turn indurated with chancres of the breast. The mothers, infected by the children, imparted the disease to the fathers." To show that vaccine is taken from syphilitic persons, the report states that: "One of the twenty-three infected served for new vaccine-points." Nice composition that,—a mixture of syphilis and small-pox germs to inject into the veins of healthy men, women and children! Right here is where the enormity of the vaccination craze comes in—*perfectly healthy* people being made the unsuspecting victims of a gross medical superstition! But how many of the beneficiaries care for the injury they inflict while under the benign protection of the law?!!

This criminal, tho legal, lunacy, which Dr. Stowell justly

denounced as an "illusion and curse to humanity"—and he speaks from personal experience—is responsible for most of the "ills flesh is heir to" since Dr. Jenner inflicted this blight upon our race. Why, then, is it still tolerated by any civilized government after its attention has been called to these and thousands of other similar cases wherein this practice has wrecked the lives of healthy people, causing untold numbers to die in indescribable agony, without it ever having proved of the least benefit in a single case? For if a person's blood is pure, he or she is immune against small-pox, hence it is the hight of folly to poison it with corrupt matter taken from human or animal bodies, and if already impure, to *render it still more so,* can be stigmatized as nothing short of criminal malpractice!

Moreover, where is the sense in preferring to *run the risk* of being inoculated with the most horrible malady known to medical jurisprudence, to the remote possibility of being attacked by what is, comparatively, but a very mild and brief complaint which, under proper treatment, leaves the patient in better condition than he was before, since small-pox is preeminently one of Nature's purification processes insofar as the subminds are expelling thru the skin what they were unable to remove in any other way. And that people are awakening to the folly of Jenner's method of fighting this disease is seen in the Anti-Vaccination Societies which are forming everywhere in this and other countries.

The rational way to prevent an attack of small-pox or any other febrile disease is to keep the blood as pure as possible by keeping the liver and kidneys active with wholesome food moderately taken, and with plenty of fresh air and pure water. In the following items which have made the round of the Press, a specific is presented which has been found very efficacious both as a preventive and as a sure cure:

"Mr. Bernhard Slocum, who has just filled an engagement in the *Academy Of Music* in this city (Pittsburg, Pa.,) met a reporter the other evening and gave him the following receipt which he said would prove a sure cure for small-pox. 'Take five cents worth of cream of tartar and put it in a pint of water, stir it up and give the patient a tablespoonful of the mixture every four hours. The same dose twice a day will act as a preventive to persons in attendance upon the sick.' With the above, Mr. Slocum says he has cured scores of people." But so long as those who are exposed to the disease in any way retain their usual health, that is, do not experience the first symptoms of the complaint, namely, constipation, headache and loss of appetite, there is no need of this

remedy which should be taken only at the beginning or during the disease until patient has recovered.

"The same remedy was recommended by a distinguished physician in these words: 'I will risk my reputation as a public man that the worst case of small-pox can be cured in three days simply by cream of tartar. This is a sure cure and never-failing remedy: One ounce of cream of tartar dissolved in a pint of hot water. When cold, drink at short intervals. It can be taken at any time and is a sure preventive as well as a curative. It is known to have cured thousands of cases without failing. It never leaves a mark and always prevents tedious lingering.'"

Another doctor writes: 'The small-pox remedy which cured three thousand cases in England, taken in all stages of the disease (unlike virus which, to be effective, must *corrupt* the blood of people, W.) is so simple that it cannot be too widely disseminated. It is: Cream of tartar, ¾ ounce. Rhubarb, 12 grains. Warm water, one pint; mix and shake before taking. The dose is from one tablespoonful in mild cases at short intervals, to a half-pint dose in severe cases attended with delirium, during which hot-water bags or bottles should be applied to feet. Plenty of fresh air, avoiding drafts, is important, also out-door airing as soon as practicable. When above remedy is taken in the earlier stages of eruption, suppuration is prevented without injurious results or marks.'"

With such simple and harmless preventives, as well as potent remedies against small-pox within easy reach, what excuse is there for still adhering to a practice which carries nothing but disease or death in its path? If the people, slaves to custom and tradition, will not of their own accord suppress that "monstrous illusion and curse to humanity" called "vaccination," then it is the duty of GOVERNMENT to act in the premises. But will it? That's questionable with ninety per cent of the beneficiaries working with might and main for its continuance.

A mother whose only child, a bright little girl of ten, had died in horrible agony with lockjaw, the effect of vaccination, driven almost insane with grief, called down the "vengeance of Heaven upon the brutal murderer who had robbed her of her child." Why the vengeance of Heaven? Because she could not evoke the law which furnishes no protection to the people against this kind of professional, legalized killing, which has been going on so long with impunity that the profession seems to have become quite callous to the sufferings they inflict. This is but another exemplification of the

truth of the saying that *"Ignorance is the root of all evil, for from it all other evils spring."*

CHAPTER 95.

THE ULTIMATE REALITY. TANGIBLE EVIDENCE OF MIND IN NATURE. HAECKEL RECOGNIZES TELEOLOGICAL FACTORS IN HIS "LAST WORDS ON EVOLUTION." GIVES MATERIALISM THE COUP DE GRACE. ROGER BACON'S FAMOUS APHORISM EXEMPLIFIED IN HAECKEL'S "PSYCHOLOGICAL METAMORPHOSIS" *Ala* VIRCHOW, WUNDT, DU BOIS-REYMOND, VON BAER, IMMANUEL KANT AND OTHERS. PROF. HENRY J. CLARK'S PROOF OF CREATIVE FORETHOUGHT.

Summing up the views herein presented, it appears that the consensus of modern Science places but one interpretation upon cosmic phenomena by postulating an antecedent Intelligence which rules the destinies of the Universe in accordance with a will or plan of its own—an ULTIMATE CREATIVE POWER identical with the one designated by Herbert Spencer as "the Infinite Source from which all things proceed."

Is it tangible evidence—the evidence of his senses—the materialist wants of the existence of this Primal Mind-Energy? Well, here it is! He sees an artist design and construct an intricate mechanism, a sculptor carving a "human form divine." He is thrilled with an orator's eloquence, and enraptured with a Mozart's soul-inspiring strains. He is amazed at an Edison's inventive genius, at a Napoleon's generalship and at an Alexander's longing for "more worlds to conquer," but does he question their intelligence? No; their works are all-sufficient in themselves—they furnish absolute proof to him of their superior mental faculties. Even, then, as the works of Art afford him incontestible evidence of the realism of human intelligence, so must he, to be consistent, acknowledge in the infinitely superior works of so-called "Nature" the presence and executive ability of the Mind-Energy governing the diversified mechanicisms of the Cosmos.

In Haeckel's *Last Words On Evolution* he recognizes teleological factors in Nature in the following words on page 23: "The word 'Evolution' is still used in so many different ways in various sciences that it is impossible to fix it in the general significance we here give it. By Evolution in its widest sense I understand the unceasing mutations of substance, adopting Spinoza's fundamental conception of substance: it unites inseparately in itself matter and force (or energy), or Nature and mind,—the world and God." On

(P. S. to The Horrors of Vaccination.)

The claim set up by those physicians who defend the practice of vaccination by saying that "Bovine (cattle) virus is now used from animals in perfect health," is as absurd a statement as that perfectly healthy people can break out with boils or other sores. The very fact that cattle or other animals, as well as human beings, have skin diseases is *Prima Facia* evidence that their blood is impure and they can not, therefore, be in a state of health. And the assertion that "if a person has been successfully vaccinated over five years ago, he should be again vaccinated for safety, and if it does not take then, he is immune and has not suffered in any way in consequence," is equally unwarranted, for such a high authority as Dr. A. Wilder (above mentioned) states distinctly that after such contamination of the blood by any kind of virus (bovine or human) you can never regain the former purity of your blood, which means that the victims of this "downright curse to humanity," as Dr. Stowell called it, are henceforth subject to every disease with which mankind is afflicted, and that poor people will have to hustle to pay doctor bills. That's the penalty Nature imposes for violating her laws, and for setting at defiance every precept of experience, reason and common sense.

When the vaccine does NOT "take," your blood is contaminated all the same, since the virus (which is corruption itself) is soon diffused throughout the entire body.

As for the preventive and cure for smallpox mentioned herein, the writer would say that in his opinion the C. P. (chemically pure) cream of tartar kept in drug-stores is preferable to the "commercial" of grocery stores, though the latter may serve as a substitute in an emergency. Taken as directed herein, it nips many other incipient diseases "in the bud," owing to its blood-purifying and other remedial properties.

The glorious news has just reached us that owing to the improved methods now employed for fighting smallpox, Germany has abolished vaccination in her army and navy, and that it has been discontinued in the whole German Empire. Other nations will, no doubt, follow suit, as they won't let the "Kaiser" get ahead of them in anything. This heralds the dawn of a brighter era of health and longevity for mankind.

Would say *en passant* that the author in introducing the subjects of Vaccination and Prohibition in this volume was fully aware of the animosity he would incur among their advocates, but the consciousness of having done his duty to humanity has more than compensated him for his personal sacrifices.

next page he admits that "the idea of Evolution is scientifically applied to the soul as a *special, immaterial entity.*"

Associating Nature (or matter and force) with mind, uniting the world with God, and recognizing the entity of the soul, gives Materialism the *coup de grace* (Gnadenstoss) from its foremost champion, again exemplifying Roger Bacon's saying that: "A little natural philosophy disposes the opinion to atheism, but much natural philosophy and wading deep into it, will bring men's minds around to religion and God." (By the term "soul" the writer understands the sum-total of the indestructible psychic energy resident in each living cell, the aggregate of which constitutes our subconsciousness or biologic mind.)

Thus it appears that Haeckel is about to pass thru the same "psychological metamorphosis" which he criticized in Virchow, Wundt, Von Baer, Immanuel Kant and others, as related in chapter 45, for in accepting Spinoza's views of Nature and mind, or of the world and God, he takes the same stand with other deists—a position stated by Prof. Henry James Clark in his lectures to the students of Harvard University (published in book-form by D. Appleton and Company, New York, in 1865, under the title: *"Mind In Nature, Or The Origin Of Life And Mode Of Development Of Animals"* on pages 4 and 5, as follows:

"I hope in the course of these lectures to prove that there is a Power at work in the Universe which possesses a foreordaining mind—a thinking, intelligent, animate being; such a Combination of Powers that no physical law could possibly be conceived to represent. . . . Up to a certain point I wish to prove the prevalence of independent physical law as a controlling power; but beyond that point I hope to be able to show evidence of thoughtful design to produce a succession of events or a combination of contemporaneous interdependent phenomena in which we have the strongest proof of creative forethought and design."

Concerning the question of entity of mind, Mr. B. F. Underwood (former editor Religio-Philosophical Journal), writes:

"It is a fact of science, not less than of Philosophy, that the permanent is the invisible, the intangible, the unrecognizable. It is this ultimate Power that lies behind, so to speak, of all objects of sense. This is the basis of all activity in the organic and inorganic worlds alike."

Yet the Materialist still sweeps the heavens with his telescope in search of God—the Universal Psychic Power which guides the celestial bodies in their life- and mind- evolving orbits. Thus Dr. Ludwig Buechner declared that "There is

no ecclesiastical science so long as the telescope does not locate the regions where God and the angels dwell." As well might he say there is no physical science so long as the microscope has not revealed the ultimate atoms of which his alleged "matter" is composed. He still strains his vision thru his microscope in quest of the cell-*souls* of organic structure, he being too mentally blind to see them in active operation in the "skilled manipulations" of Huxley's "hidden artists." He still wields his scalpel searching for the soul of man, never dreaming that what he is in quest of is as impalpable, yet as potent, as are the physico-dynamic forces with which all mind is inalienably associated. He accepts the realism of these energies in recognizing their "working-capacities" in various fields of Nature, yet the self-evident fact that they must necessarily be guided by judgment in their purposive activities is beyond his "mental horizon."

Mr. Underwood sees in matter "a phenomenal manifestation of an Inscrutable Reality which reveals itself in our consciousness objectively as extended substance, and subjectively as feeling and thought. That its basis is not matter can be shown, but it is in my opinion psychic in its nature. I do not believe that the universal Power immanent in the forces of the universe is inferior to any of its products, nor can I think of it as a Personality, but the workings of Nature indicate that it is greater and higher than any Personality can be."

Underwood's contention that the universal Mind-Energy is potentially and psychically on a parity with all of its creations, admits of a wide range of thought, altho the idea involved may be expressed in the scriptural phrase, "By their fruits shall ye know them." Accepting this as our criterion, we may determine the mental capacity of the mind-energy which built up any given organic or inorganic body, in the same way we determine the mental caliber of the maker or designer of any work of art. Thus the atomic mind is restricted in its capacities to assembling congenial particles into molecules. These are limited to building up bioplasts or plastidules—the links between inorganic and organic matter. These can only build up the simplest Monera, while the sex-cells of more complex organisms can reproduce only exact duplicates of their genitors plus whatever new modifications their conscious memory and native judgment may have suggested.

CHAPTER 96.

B. F. UNDERWOOD ON THE ENTITY AND NATURE OF MIND. LAW OF CONSERVATION OF ENERGY IN ITS APPLICATION TO DOCTRINE OF IMMORTALITY. THE COGNATE SOURCE OF THE PHYSICAL AND MENTAL FORMS OF ENERGY. THE FUNDAMENTAL VERITY OF SCIENCE AND RELIGION. THEIR RECONCILIATION. REV. MINOT D. SAVAGE'S EXQUISITE SATIRE ON THE ATHEIST'S QUERY: "WHERE IS GOD?"

Referring to the source of the known forms of mind, Mr. Underwood writes: "It is a scientific fact that mental phenomena are associated with physical phenomena, and fundamentally these two classes may have a common basis. In this common basis, not in mere phenomenal manifestation; not in conscious states any more than in molecular mechanicisms, is the rational ground for Immortality. The essential part of man is not in matter, but in that ABSOLUTE REALITY which underlies matter in which it finds its outward expression, and in whose purposive mechanicisms it is revealed."

All scientists concede the indestructibility of not only so-called "matter" itself, which is *force condensed,* as has been stated, but also of its properties or attributes. Hence its psychical element being admitted by the majority of modern scientists, the Immortality of the soul or spirit is based on the greatest of all laws, that of the CONSERVATION OF ENERGY.

"The organization and aptitudes of the child at its birth," writes Mr. Underwood, "are the organized results of ages of ancestral life on this planet. What underlying forces, what unknown influences have produced these results? What preexistences does the child represent at its birth? Through all experiences, through all ever-changing conditions, the real noumenal, eternal being—that which is absolutely, not relatively, essential, *persists.* 'Death' does not, cannot destroy it. This *physical* phenomenon only changes the *real* being's manner of manifestation."

In other and more specific words: During the physical phenomenon called "Death," the vito-psychic energy called "life" or "subconsciousness," is converted from its kinetic or intense state to a potential or comparatively latent one, the nature of this transformation being analogous to that to which the correlated physical forms of energy are subject.

But in their capacity of energy, neither the vito-psychic nor the physico-dynamic types can be destroyed, each class forever preserving its original nature intact. That is, the physical forms of force are not convertible into the *psychical* ones, nor these into the *physical* ones. Their native dissimilarity precludes conversion or blending into each other, as in the case of the dynamic forms alone. Since, then, from the physical types no *psychical* ones can arise, nor from the psychical forms any physical ones, it follows that each kind of force must needs have a cognate source of its own in the Cosmos, and since we also see in all forms of organic life, from the simplest cell up to man, that these two forms of energy are inseparately associated, co-operating to build up certain forms of organic structure, they must also be united in their primal state, thereby constituting one universal force, the proper designation of which is *Prosychdynamis.*

To be more specific. Each chief element of this Primal Mind Energy—the psychical and the dynamic, is subject to constant metamorphoses which change it in kind, quality and degree of intensity, these conversions being the result of their ever-varying relations with their environments which are likewise amenable to eternal mutation. Whenever the conditions of the environs of any given body of potential or inorganic mind-force permit, this assumes, after it has been organized by its own inherent mind-element into protoplasmic cells, the higher states of consciousness and intelligence manifested in animal organisms, and in lesser degrees in many plants. But since all forms of force—both psychic and dynamic—are subject to conversion from potential to kinetic, and from kinetic to potential states, the higher types of mind will retrovert sooner or later into their primary forms again, to re-assume under new conditions favorable to their restoration such higher degrees of consciousness as may be formulated thru the organisms in which they appear. Hence the phenomenon we call "death" is in reality but a prelude to the soul's reformation and eventual reappearance under new auspices. The principle involved probably gave rise to the ancient doctrine of metempsychosis or transmigration of souls, closely related to the more modern concept of Resurrection.

The corollary to the foregoing propositions is that all higher types of mind are the developed products of the universal Creative Power which exalts itself thru organic evolution, and accomplishes its purpose of reaching the highest states of perfection thru the instrumentality of the diversified individual mind-forces in both organic and inorganic forms which the writer has embraced under the appellation of the teleo-mechanics of Nature. Possessing the potency to arrange

its psycho-dynamic substratum called "matter" into life- and mind-evolving planets, the Primal Mind-Energy has thru its own versatility variegated and assembled its creations into the highly interesting world in which we live. Thus may we see in this Infinite Intelligence and Creative Power "the Fundamental Verity which Religion can assert with all possible emphasis in the absence of Science, and which Science can assert with all possible emphasis in the absence of Religion; the Fundamental Verity in the defense of which each can find the other its ally."*

The consummation of this alliance will eventuate in the realization of the long-cherished "dream" of the RECONCILIATION *of* SCIENCE *and* RELIGION, resulting in the exaltation of both. For well has Sir David Brewster declared that "Even as the God of Love is most appropriately worshiped in the Christian temple, so may the God of Nature be equally honored in the temple of Science." In both we have all the essential elements for a true *Science of Religion* since it is the object of Science to discover and fathom the nature of the Fundamental Verity which underlies all cosmic phenomena—"the Source from which all finite things proceed," call it God or Prosychdynamis or by any other name.

In conclusion, the following exquisite, tho satirical, verses are submitted to the consideration of those (atheistic) readers who are unable to discern the palpable evidences of intelligent design all around them. They were written by the Rev. Dr. Minot D. Savage:

"WHERE IS GOD? WHERE IS GOD?

"Oh where is the sea? the fishes cried,
As they swam the crystal clearness through,
We have heard from of Old of the ocean's tide
And so long to look upon the waters blue;
The wise ones speak of the infinite sea,
Oh who can tell us if such there be?

"The lark flew up in the morning bright
And sang and balanced on sunny wings,
And this was his song: 'I see the light
And look over the world of beautiful things,
But flying and singing everywhere
In vain have I searched to find the air.'"

(THE END.)

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*Herbert Spencer, *"First Principles,"* p. 22. D. Appleton & Co., New York, 1880.