

THE SCIENTIFIC BASIS OF ORTHODOXY.

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I.—THE NECESSARY INTERPRETATION OF HISTORY.

THE very recent declarations of Mr. John Fiske, of Harvard, that Positivism regards itself as the legitimate successor of theology, have resulted in directing the attention of thinkers in this country to that subject. The speculations of Spencer, who must be classed as a Positivist, though vastly at variance with Comte in some of his conclusions, cannot be regarded as menacing to orthodoxy, except in so far (if at all) as they may affect the general cosmological and biological theorems upon which it depends. A system of philosophy—and Mr. Spencer may insult the adjective *synthetic* with it, if it suits his fancy or egotism—a system of philosophy that has no sympathy with history, must be regarded as too partial both in its *data* and conclusions to affect the intellectual and moral evolution of the century, except very limitedly; and that Spencer's system involves no hearty recognition of human history, is too apparent to need elaborate demonstration. It is like a collection of bones, without moral vitality; and, in the putting together of the bones even, there is occasionally a lack of that deeper and more comprehensive synthesis which constitutes the profounder part of philosophy. Comte has, on the other hand, accepted the historical necessity of some religious system, both as psychological and social; but has begun by eliminating from it its valuable element, to wit, its supernaturalism, which, *per se*, is not necessarily theistic or dependent upon the theistic idea, but belongs to human nature and to human history as a progressive evolution of the unconditioned from the conditioned.

Spencer's speculations have not sufficient sympathy with evolution as progressive—are too static. A just system of philosophy must begin with the recognition, not only of history as the collective body of human acts, but as the collective body of human progress in the struggle toward ultimate freedom, in the sharpness of which struggle the supernatural is engendered—the supernatural being understood in its true historical sense as the sporadic manifestation, under given conditions, of that higher unconditioned humanity and nature, toward

which both historical and geological evolution tend, and in which they end.

Orthodoxy rests fundamentally upon two historical postulates, namely, monotheism and the progressive historical evolution of the God-consciousness in humanity. Admit these two postulates, and the whole body of orthodox thought must be admitted as valid. Rationalism is historically illogical, because it has no historical destiny, and omits recognition of that which is to be regarded as evidence of the progress of the evolution of the ultimate—in a word, omits recognition of the supernatural in history; and, for the same reason, Comte's religion of humanity is inadmissible. For all the purposes of philosophical *poiesis* it matters not whether the absolute be considered as latent in humanity, that is, subjective, or as the God of the theologians, that is, objective, or as the historical ultimate of humanity. The fundamental conception is the same in either hypothesis, and, in either hypothesis, represents an ideal sublimate which the history of human consciousness has demonstrated to be universal. Furthermore, any system of philosophy which, like undiluted Positivism, neglects to take this God-instinct into account, is essentially partial, defective, and unsatisfactory. Omitting the ethical as historically interpretive of the idea of right, and, therefore, not germane to the investigation, the analyses of the historical manifestation of human consciousness may be stated as threefold:

I. Philosophical or rational *poiesis*, which represents the struggle of the rational intellect (*Vernunft*) to apprehend the absolute in truth. Subjectively, its processes are: apprehension and comprehension, that is, knowledge; hypothesis and generalization, that is, ideal evolution; synthesis into system, that is, unification into absolute body of knowledge general, of knowledge particular.

II. Imaginative *poiesis*—art, poetry, music, and literary creation—which represents the toiling of the imagination to apprehend and objectify the absolute in beauty. As the toiling of reason is after the absolute or ideal in knowledge, so the toiling of the imagination is after the realization of the absolute or ideal in form, using the word in its most comprehensive sense.

III. Inspirational *poiesis*—historically illustrated by the facts of sacred history—which represents the struggle of the God-instinct to compass the absolute in personal consciousness. For purposes of historical analysis, it is not necessary to postulate the objective *esse* of God as postulated by theologians. Scientific disquisition assumes simply the God-instinct in humanity, which is all that is necessary in philosophical analysis, and leaves the question of objectivity to take care of itself.

The first finds its struggle answered in the absolute in truth; the second, in the absolute in realization or beauty; the third, in the absolute in personal consciousness, the toiling after which constitutes, philosophically, the ground of what is termed revelation.

Subjectively, therefore, truth and beauty are pure ideas, dependent upon reason and imagination respectively. Subjectively, too, any system of philosophy or scientific hypothesis is just as really human invention as is a poem or a novel—a conclusion which is as lucidly demonstrable as any proposition in Euclid. Suppose a person unendowed with reason, and truth is an impossible idea; suppose the same person destitute of imagination, and beauty is an idea equally impossible. It is not necessary at this stage of the discussion to open the question of the objective reality of either—since conception of that reality is grounded in imaginative and rational intellect, and since the conception is often at best mistaken for the reality itself. In the creation of any philosophico-imaginative cosmogony, like that of La Place, therefore, the evolution of system is based upon the conceptions as material of two faculties, to wit, reason, whence the ideal in abstract, and imagination, whence the realization of the ideal in form.

As the construction of any hypothetical cosmogony is grounded in these two ideas uniquely, it is, therefore, necessary to reduce both to ultimate analysis, and develop the atomic notions upon which they respectively depend.

At first sight, the idea of truth, in all moods of consciousness, seems to be the simplest axiom or atom of thought, of which it is possible to form a conception. A more minute scrutiny, however, suggests the hypothesis that truth as an idea is rather deductive than atomic—suggests, I say, the conclusion that the idea of the true is deduced from the atomic notion of the determinate, of the fixed. The struggle of reason (represented in philosophy) is, therefore, a toiling after the fixed, the determinate, the absolute in knowledge. In the processes and evolution of philosophy, the Positivists are correct in postulating the relativity of knowledge; but, in its end, if that shall ever be attained, knowledge must be absolute. In its historical ultimate, its *to think* must be succeeded by *to know*. In seeking to apprehend this absolute, therefore, which forever baffles and eludes his pursuit, what seeks man but to apprehend the mystery and solve the riddle of himself?—for, in the consciousness of the man is hidden the secret of the universe and the key of the true cosmogony. Constructive philosophy necessarily consisting of two principal parts,—the synthesis of methods and the synthesis of doctrines,—Comte's position as a thinker by no means covers the whole ground. His synthesis of methods may form the basis of a philosophical system, but is not, in itself, a system of philosophy, and must be complemented by the synthesis of doctrines which Spencer has attempted to constitute really a philosophical body. Mr. Fiske has been the first to condition Positivism in definition; and its cardinal theorems cannot be stated more lucidly than this exceedingly analytic critic has stated them:

I. That all knowledge is relative.

II. That all unverifiable hypotheses are inadmissible.

III. That the evolution of philosophy, whatever else it may, is a continuous process of deanthropomorphization.

IV. That philosophy is the synthesis of the doctrines and methods of science.

V. That the critical attitude of philosophy is not destructive, but constructive; not sceptical, but dogmatic; not negative, but positive.

These, according to Mr. Fiske, are the fundamental propositions of Positivism. The Positive Philosophy, therefore, by no means involves radicalism. On the other hand, historically considered, radicalism has always been the handmaid of scepticism—has universally made its appearance in conjunction therewith, and more or less grounded upon it. Positivism is essentially dogmatic, but not radical and noisy; it maintains the quiet attitude of scientific criticism, and is not declamatory; attacks nothing, no faith, no belief, no theological dogma; is satisfied with science as the developing element of civilization; enunciates what it deems to be truth, and waits its time. Relentless as fate, it quarrels with nobody, but tramps strongly on, stopping only with the cessation of scientific investigation. In its relation to past systems of philosophy it claims to adopt the verifiable, rejecting the unverifiable element. As the latest outcome of the speculative instinct, as emphatically the philosophy of the century and interpretative of its spirit, it represents the present result of the philosophical *poiesis* historically considered.

In historical generalization, philosophy has run through two cycles, and begun its third cycle in the system of Comte. The first cycle is represented by the Greek systems. In ancient philosophy the first period is cosmological, beginning with Thales and ending with Anaxagoras and Demokritos; the second is psychological, represented by Socrates, Plato, and Aristotle; the third period is one of general scepticism; and the fourth is represented by Proklos whose divine light is nearly identical with the Hegelian intuition, and completes the Greek cycle. Mr. Lewes and Mr. Fiske regard Positivism as the end of the modern cycle; but, more properly, it begins the scientific cycle. The modern cycle begins with the promulgation of the method of Bacon and the cultivation of the physical sciences; the cosmological element cropping out in Galileo and Kepler. Its first period is ontological, beginning with Descartes and ending with Spinoza, whose inexorable logic brought on a crisis and resulted in the reconsideration of the initial conceptions of metaphysics and the rejection of the validity of the subjective method.

This led to the second or psychological period, during which, for a century or more, ontological speculation was abandoned or subordinated to psychological analysis. The adoption of the first canon of Positivism—the relativity of knowledge—resulted from the investigations of this period, and was rendered necessary by the inexorable analysis of mental operations, begun by Hobbes, and continued by Locke, Berkley, and Hume.

This brought on the third or sceptical period, of which Hume appears as the apostle, and in which Hartley's keen analysis demonstrated the possibility of bringing the scientific method to bear upon psychological inquiry. Sensationalism and crude materialism represent this period in France. Against both, as the natural swing of the philosophical pendulum, there ensued later the tawdry superficially spiritualistic reaction, conducted by Laromigniere and Cousin, whose declamatory *le cœur* answers to the divine light of Proklos, and ends the cycle in France, with a fourth or intuitional period. In Germany the cycle ends similarly, the re-examination of the subjective method by Kant being episodic, and preparatory to the reassertion of the intuitional by Hegel, who, again, denies the relativity of knowledge. The great English thinkers of the century, with a caution engendered by the Baconian method, diverge here from the logical completion of the cycle, with the exception, perhaps, of Coleridge, who was addicted to Germanism; Hamilton and Mansel accepting the Kantian psychology, but stopping short of Hegelism. Thus ends the second cycle—the third beginning with Positivism as interpreted by Spencer, in England, and Comte, in France, and adopting substantially the cosmological system of La Place. Pre-eminently it may be termed the cycle of the scientific method; but, as to its ultimate historical deduction, it is folly to speculate.

From this cursory generalization of the historical struggle of the rational intellect after the fixed, the determinate, the absolute in knowledge, a parallel generalization of the history of the imaginative *poiesis* is, it will be seen, quite unnecessary. Endlessly it everywhere repeats the cycle—beginning with fable, merging into poetry and allegory, developing into dramatic creation, and ending in pure, natural literature. The historical manifestation of the God-instinct presents really but one grand cycle which commences with cosmogonies. Then comes revelation objective, as its first rude groping after the latent absolute in human consciousness, with its dreams, and omens, and visions. A period of transition ensues in which priestly mysteries succeed to objectivity. Then comes the intuitional, prophetic, or subjective period, in which objective revelation is abandoned, and the God is represented in temporary union with the human consciousness. Then the final completeness of the union of the God with human consciousness in the son of Mary is asserted and accepted. Again, a brief period of prophetic prediction ensues, represented by the Apocalypse of St. John, in which the ultimate historical triumph of the God-instinct over all condition is foretold. Then comes a period of evolution; and the cycle, not yet completed, ends in the realization by the human of the absolute in consciousness, as the ultimate deduction of the toiling of the God-instinct after the God. The acceptance or denial of the *esse* of the objective in no way affects the validity of the subjective instinct—in no way affects the facts of its historical manifestation. The phe-

nomena are attested; the objectivity of deity is a question with which philosophy has no business. Truth, beauty, and deity may be subjective conceptions; but the supposition that they are cannot annul their historical validity in the manifestation of consciousness. The collective body of the motion of human consciousness towards freedom in all directions—towards the absolute, in a word—constitutes, therefore, historical progress, history being in ultimate definition the self-expression of humanity; and at the basis of this progress, forever restless, forever toiling towards the realization of its freedom from condition, tugs the God-instinct of the ego, the motive of all that is grand and sublimated in human thought and human action. Necessary as the integrity of the ego is to this deduction, it may be well here to notice the late English hypothesis that it is constituted by the successive ideas which finds its refutation in the fact that, in the evolution of ideas the consciousness is a double one—that is, I am conscious of myself as myself, and conscious of myself as thinking.

Three profoundly instinctive and irrepressible, even fundamental, directions of consciousness are found, therefore, if the preceding ratiocination be valid, to underlie the historical self-expression of humanity. They are, if coinage of the compounds may be permitted:

I. The thought-instinct, which seeks the absolute in knowledge, in truth, in comprehension of the processes and laws of phenomenal evolution.

II. The art-instinct, which toils to create the absolute in form, in beauty, in objective realization.

III. The God-instinct, which struggles for the realization of the absolute in personal consciousness; which attained, the history of human consciousness as conditioned, ends.

The collective body of results, emanating from this threefold toiling of the human after freedom of self-expression, constitutes the essential facts of history, as the ultimate realization of the goal towards which the struggle tends, constitutes its finis.

I have proceeded thus far without a break, for the sake of logical coherence. Let me return now, and subject to analysis the idea of beauty.

If the idea of beauty be subjected to careful analysis, it will, I think, be conceded to be non-atomic, that is, deduced; and if, again, the dissection of the few poems, the beauty of which has been universally acknowledged, be entered upon, their effect will be found to depend upon a certain dreamy undulation, like the weird waving of restless trees under moonlight, which pervades and spiritualizes their composition. The atomic notion of beauty is, therefore, the undulative, the rhythmical, the indeterminate. It is this principle that imbues the beautiful with its soul of Faëry. From it may be deduced the vague, the spiritual in poetic, artistic, and musical creation. Dispel this perspective, this atmosphere of the indeterminate—imbue beauty

with mathematical decision, and it ceases to be beauty. The jump of iambic rhythm is less beautiful than the dreamier winding of the anapest, or the undulative dance of the dactyl. For a similar reason, to wit, greater sweep of undulation, the Persian rhythms are more beautiful than the English.

It is not intended in the preceding remarks to deny the mathematical relations upon which the skeleton of the beautiful in form is grounded. In rhythmical construction the sound-waves observe a certain mathematical regularity of recurrence, as also in music; but that which constitutes a mathematical system of short and long syllables regularly alternating, and is mere scansion, must not be confounded with the ebb and swell of the sound-wave, the undulation of which is the ground of the beautiful in rhythm and music. Sculpture, painting, and the plastic arts afford, perhaps, a more distinct recognition of the relation of the geometrical to the beautiful; but, in the study of that relation, the two must be kept separate. The mathematical and geometrical are, so to speak, the bones of the beautiful. "Beauty of favor," says Bacon, "is least. Beauty of color is more than that of favor; and the beauty of sweet and graceful motion is best of all. There is a beauty which a picture cannot express, nor even the first sight of life. There is no excellent beauty without some strangeness in the proportion." The father of the scientific method seems here to hint indistinctly at the categories of beauty, to wit, the beautiful in form, which is the ground of sculpture; the beautiful in color, which lies at the basis of painting; the beautiful in expression, which verges further upon the ideal than either of the preceding; and the beautiful in individuation, which is still subtler and more ethereal. The last category connects the beautiful with Schelling's *tendency to individuation*, and presupposes the intimate relation of the beautiful to the biological, the plastic, the creative; but, in no respect, invalidates the reference of the idea of beauty to the wave-motion, which constitutes the law of force.

Hogarth, who located the principle in the curve, did, it seems, approximate to the solution of the problem; the principle being really the undulative or indeterminate curve, resultant from the wave-motion of force as it enters into morphization. Prof. Tilman, in a recent paper, has so lucidly developed the relations of the mathematical and geometrical, upon which the symmetrical is grounded, to the musical and rhythmical sound-wave, that argument is really superfluous. The subject may, in fact, be pursued to any extent of illustration by reference to instruments for the study of wave-motion, and to the subtler investigation of the wave-forces that condition the forms of plants. The beautiful must not be confounded with its geometry. The latter is the skeleton, of which the former is the vivification and soul.

This analysis is supported essentially by the psychology of imaginative creation. Longfellow expresses himself as one—

" Who, through long days of labor
And nights devoid of ease,
Still hears in his soul the music
Of wonderful melodies."

Poe interprets the instinct when in "Israfel" he moans out—

" If I could dwell where Israfel
Hath dwelt, and he where I,
He might not sing so wildly well
A mortal melody,
While a bolder note than his might swell
From my lyre within the sky."

Again, depicting the poet under the similitude of a beautiful palace, he sings—

" And travelers in that happy valley,
Through two luminous windows, saw
Spirits moving musically
To a lute's well-tuned law."

Shelley, more profoundly a poet than either mentioned, typifies the poet in his "Skylark" thus—

" Higher still, and higher,
Heavenward thou springest ;
Like a cloud of fire,
The blue deep thou wingest,
And singing still dost soar, and soaring ever singest."

But why multiply instances, when, from the bulbul-hearted Hafiz to ethereally musical Tennyson, no poet has left the instinct for rhythm unexpressed—when, in fact, the undulative is grounded in the very nature of the art-instinct? The wave-motion is the essential element of the beautiful in imaginative *poiesis*, whether it be considered as the rhythm-wave of poetry or as the sound-wave of music, or as the line-wave of art proper. Connect the gamut of musical sound with the spectrum of color, and it will be seen, adopting the undulatory hypothesis of light, that the two have a direct relation. Red, produced by the least number of light undulations, represents the tonic; yellow, the mediant; and blue, the dominant. The darkest color, indigo, falls on the relative minor tonic; the brightest yellow, on the brilliant mediant. It would, in fact, be perfectly easy to set the Ut-Re-Mi-Fa-Sol-La-Si of the sound-septave to the septave of the spectrum; the color translating the sound to the eye harmoniously, and the mathematical correspondence of undulation to undulation being preserved with perfect accuracy. The deduction is that light, heat, and actinism result from undulations of the same attenuated medium; the perception of light and color resulting from the ratio of undulations embraced in a single octave. The deduction, incident to this ratiocination, is, however, a broader one, to wit, that the wave-motion, the rhythmical impulse, is inherent in the objectively beautiful, whether it be represented

in sound color, or form, which latter constitutes simply the permanence of wave-motion—is its mummification, so to speak, in connection with matter; and in this rhythmical impulsion is, no doubt, grounded the æsthetic element of the objective, its existence constituting the basis of the æsthetic perception.

The universality of the rhythmical in the operation of force has been assumed by so acute a Positivist as Herbert Spencer, and proved; and what has been once demonstrated under the scientific method need not be re-argued, further than to point out the parallelism between natural and psychological operations, that is, to identify the objective principle with the subjective idea—further than to admit the conclusion that the art-method of human consciousness is identical with the art-method of the phenomenal.

There is nothing in Mr. Spencer's law of rhythm, except its incorporation as a part of the scientific method. Dreamers were aware of it before thinkers were. Plato expressed it in his music of the spheres; and an old English author propounded it quaintly in the apothegm: "The verie source and, so to speak, springheade of all Musicke is the verie pleasant sound that the trees make when they grow." It has, too, been one of the ever-recurring imaginings of poetry. Mrs. Browning expresses it:

"The divine impulsion cleaves
In dim music to the leaves,
Dropt and lifted, dropt and lifted,
In the sunlight greenly sifted—
In the sunlight and the moonlight
Greenly sifted through the trees.
Ever wave the Eden trees
In the sunlight and the moonlight,
In the nightlight and the noonlight,
Never stirred by rain or breeze."

Or, again, here is a poetic personification of the rhythmical impulse in nature, from "Al Araaf:"

"Ligeia, Ligeia,
My beautiful one,
Whose harshest idea
Will to melody run.
Say is it thy will
On the breezes to toss,
Or, capriciously still,
Like the lone albatross,
Incumbent on night
As she on the air,
To direct with delight
All the harmony there?"

Indeed, it is not the uncommonness of the fancy, but the commonness of it, which gives it dignity; and its admission into the scientific method is valueless except as demonstrative proof of the hypothesis

that the æsthetic evolution of nature is identifiable with the æsthetic evolution of art.

As philosophy, historically speaking, is a response to the rational ideal, so art, music, poetry is a response—vague it may be as the music of Memnon's statue, unsatisfactory as the fatuous fire of the Will-o'-the-Wisp, but a response nevertheless to the psychal ideal, to the toiling to embody the ultimate in form. For this the musician trickles music from his finger-tips, and the poet sets his vision to melody of numbers; for this, the insensate blossoms into forms of supernal loveliness; for this, the quarried marble is fashioned into shapes of beauty by the hand of the artist; for this, in short, the imagination creates unto itself an ideal Eden, reflecting in form, in color, in melody, its own vague prophecies of the absolute in beauty. In the rustle of leaves, in the sighing of winds, in the muffled music of rain upon grass, in the rhythmical laughter of rills, in the tremulous swinging of reeds—in all things, in a word, in which the wave-motion is expressed, it seeks expression for its own sublimated conceptions of the ideal—that ideal which is forever restless, and which, probably, no collocation of present physical forms could fully embody.

Men deficient in the art-instinct may sneer at the æsthetic inspiration as *fare il santo*, but it has its historical significance, nevertheless. Truth, in essence, is sublime; but its loftiest sublimity is lifeless—is pulseless—is utterly ineffective when brought into comparison with the inspiration of the beautiful. Dismiss rhapsody, and make a last deduction—a deduction that logically ensues and offers a solution of the riddle. It is that, the absolute in consciousness attained, man, still ceasing not to be man, shall find in the full evolution of beauty the historical answer to the struggle to create forms of physical loveliness. It is that matter, mastered by consciousness and answering immediately, as it now answers mediately, to the art-instinct, shall yield itself to the expression of the psychal ideal with perfect fluidity and subjection. Whence, from beauty ephemeral is deduced beauty eternal.

The imaginative *poiesis* having been identified in principle with the natural evolution of the beautiful, as the philosophical *poiesis* is identifiable with the *rationale* of that phenomenal evolution, a more minute analysis of the processes of the philosophical and imaginative may be attempted. Both begin with perception, and proceed from perception to *poiesis*. The gradations from perception to philosophy in the rational intellect are:

1. Perception of the object as object.
2. Perception of the object as subject, that is, rational cognition—understanding.

3. Rational discursion, or pure reason—eventuating in philosophy.

The rational cognition or understanding is inclusive alike of the cognition of the mathematical and of the logical relations of the object.

The gradations of the imaginative or sensitive intellect are:—

1. Perception of the object as object.
2. Sensitive cognition, or cognition of the object as subject, that is, in its relation to the idea of beauty—taste.
3. Sensitive discursion, or imagination—eventuating in artistic, musical, or poetic creation.

Taking up the third *poiesis*, that is, the inspirational, springing historically from the theanthropic instinct, a third formulation is necessary to complete the formulations of the historical manifestation of the human consciousness in what may be termed the literary form. This third *poiesis* begins with the intuitional, and may be formulated thus:

1. Intuitional perception, that is, perception of the absolute as the ground (*Urgrunde*) of the relative.
2. Intuitional cognition, that is, cognition of the absolute as subjective—faith.
3. Intuitional discursion—eventuating in prophecy, in revelation, or, more comprehensively stated, in theanthropomorphization.

This formulation agrees substantially with that adopted in the phrenological scheme—which, however, can have no scientific psychology—though I may suggest that, in phrenology, that which is termed the semi-intellectual would be more accurately described by the word psychal, while for intellectual I should substitute rational, and for religious, intuitional. In relation to the phenomenal, the rational identifies itself with causation; the imaginative or psychal with morphization; the intuitional with theanthropomorphization as the historical deduction of consciousness and the historical destiny of man.

Any who may wish to study the *data* upon which the preceding generalizations are based, may, without subjecting themselves to the trouble of looking further, consult Mr. Lewes' history of philosophy, the admirable work of M. Henry Taine, on art-criticism, and the profoundly philosophical treatise on sacred history, in the publication of which Prof. Kurtz has done more to turn back the current of rationalism than the whole body of his orthodox *confrères* taken together; referring them to which, I may be permitted to take leave of historical induction, and devote the remainder of the argument to the evolution of a biological definition, sufficiently broad to cover not only the structural, physiological, and psychological *per se*, but also the ultimate theanthropomorphization which historical induction indicates as the final historical sublimate of humanity.

I cannot, however, pass to the evolution of the biological definition without noticing a curious and very superficial error, into which, misled by eminent English thinkers and *savans*, Mr. Fiske has fallen in his summary lecture on Positivism. "Since," says that gentleman—"since the process of generalization has successively metamorphosed

fetishism into polytheism, and polytheism into monotheism, the inference is that it must eventually complete the metamorphosis of monotheism into Positivism; and thus Positivism regards itself as the legitimate successor of theology." So partial is this generalization, and so inconsequent and unpsychological is its conclusion, that it seems strange that Mr. Fiske should have gravely enunciated it. So far as the historical fact is concerned, monotheism began with the beginning of history. Historically speaking, the relapse was from monotheism into polytheism, that is, monotheism preceded. Fetishism cannot be postulated as the starting-point of theism: Accepting the book of Genesis as the initial attempt at history, which is demonstrably true, it is obvious that theology began with monotheism in the Semitic stem. The history of this stem presents the only completed cycle of theanthropomorphization grounded in the persistence of the monotheistic conception. The Indo-European stem presents at the beginning of history a series of mythological cosmogonies essentially similar, but evidently deduced from the Semitic, which, though polytheistic in terminology, are pantheistic in ultimate analysis. The Hindoo, Persian, Gothic, Grecian, and Roman systems constitute a group, in which monotheism original seems, by gradual process of theanthropomorphization, imaginative rather than historical, to have been metamorphosed into mythologies, superficially polytheistic, but essentially pantheistic. In their cosmological systems they are evidently derivative from the Semitic, which is historically older. The Egyptian and Assyrian systems are still more obviously derivative from the Semitic. All these derivative mythologies begin with the postulation of a monotheistic original, answering to the *Elohim*, as in the Jupiter of the Greeks, for example, and proceed to polytheism upon the principle of multiplication; effecting a partial return to monotheism in the pantheism that succeeds. The Mongolian stem differs from the Indo-European in details of mythology and cosmology, but not so essentially as to stand aloof from the generalization; and, again, historically considered, fetishism is rather representative of a degraded monotheism than original. In all the so-called pagan systems, there are prismatic reflections of the original element of the theanthropomorphization more historically developed in the Semitic system. They appear in the Vedas, in the Zendavesta. They are written in hieroglyphics amid the relics of Egypt. They reappear in the Gothic, Greek, and Roman mythologies, though more feebly; and, generally, the remoter the antiquity of the system, the more distinctly derivative from the Semitic are these prismatic reflections. The pagan cycle, therefore, begins with monotheism, descends to polytheism by theistic multiplication, and ends in pantheism by generalization of the polytheistic. The return to monotheism is effected through the historical triumph of the Semitic system, which, having completed its first cycle in the synthesis (theoretical at least) of the divine consciousness with the human, assumes

universality by general diffusion and propagation, and becomes the great developing element of an historical civilization, grounded upon monotheism and the ultimate historical theanthropomorphization of man. The utmost deduction of the rational intellect postulates ultimate cause, which the realistic instinct of the imagination transforms into a world-soul, which is pantheism; and, as a generalization, it may be observed that, in the ancient pagan civilizations, in the old Indo-European civilization generally—in which the rational and imaginative have had the ascendancy—the theistic idea has lapsed from monotheism into polytheism, and from polytheism, by synthesis of polytheistic generalizations, has ascended into pantheism, and there has been arrested. The historical generalization is, it is seen, in substantial concord with the psychological deduction that the dominance of the æsthetic instinct universally results in pantheism. Poets are inevitably pantheistic in proportion to the dominance of the imagination—that is, in proportion to the dominance of the psychal over the intuitional—as artists are in ratio to the intensity of the art-insight. The philosophical insight, on the other hand, is neutral—neither theistic nor atheistic—and concerns itself with the absolute in causation without regard to the realization of the absolute in causation in some absolute ego supposed to stand at the head of the cosmology in the attitude of the cosmical soul. The element of theanthropomorphization, in as far as it colors the Greek system, must be referred, partially, to the elements of monotheism *perdu* and transmuted from the Semitic, and, partially, to the struggle of the intuitional to assert itself in the Greek civilization.

The elements of polytheism and pantheism have, historically considered, always been ephemeral and fluctuating. The element of monotheism, having as its historical end the theanthropomorphization of the human, has, on the other hand, been permanent, and constitutes the basis of most that is valuable in the present European system of civilization. The historical induction, therefore, denies the validity of Mr. Fiske's conclusion, and leads to the hypothesis that monotheism and theanthropomorphization will complete the cycle of history in the realization of the latter. Thus, the present cycle of history is found to embrace the interval of biological evolution included between the realization of the ego as conditioned consciousness and the realization of the ego as unconditioned consciousness; and thus egotism, in its better sense, appears as the definition of history. Thus, too, biology must be considered as divisible into two cycles, to wit, the cycle of pre-historic evolution, and that of evolution historical; and thus, again, the historical permanence of theology, as at present constituted, may be assumed; the post-historical being of course represented by perfected theanthropomorphization.

II.—THE NECESSARY BIOLOGICAL DEFINITION.

The imperfect condition of biology prevented the contemporary appreciation of the value and significance of Hartley's interpretation of Lockian philosophy; and, until the end of the eighteenth century the glittering sensationalism of Condillac divided the philosophical laurels with crude materialism. The first reaction was constituted by the *le cœur* system advocated by Laromiguiere and Victor Cousin—a spiritualistic reaction of the most superficial kind, consisting in equal quantities of tawdry rhetoric and rhapsodical appeal to the testimony of the heart. Having deluged France with a diarrhoea of words that meant nothing, the system died of its own want of vitality. In England, at the same time, the scepticism of Hume had produced a philosophical crisis.

Then came Kant, in Germany, and Comte, in France—the former laying the foundation for Hegelism, and the latter appearing as the founder of the Positive system, which may be conditioned as the synthesis of the methods and doctrines of science. The distinctively Positive attitude of Galileo, Descartes, and Bacon, to the last of whom is due the authoritative enunciation of the second canon of Positivism, prepared the way for that system as elaborated by Comte. The first canon of Positivism resulted from the reconsideration of the metaphysics of Spinoza, in England, and was the direct consequence of the movement begun by Hobbes and continued by Locke, Berkeley, and Hume. The first two canons of Positivism are, therefore, pre-Comteian. The last three propositions are peculiar to Comte and Spencer, the two great apostles of the Positive system, the ground-theorem of which is that the sciences can be made to furnish the materials necessary to the evolution of a complete, synthetic, and unified conception of the world. Fundamentally, the practical realization of this unified conception depends upon the biological definition which must be equal to the covering of the metaphysical as well as the physical, and equal to the explanation, not only of the pre-historic and historical, but also of the post-historic. For the latest and most lucidly-arranged collection and collation of the *data* of biology, the student is referred to Herbert Spencer's "First Principles" and his two volumes on biological science, issued by the Appletons.

The direction of foreign scientific investigation tends to lessen the number of primary assumptions; and it is now substantially conceded that hardness, solidity, rigidity, impenetrability, elasticity, and the like, are not properties of matter, but manifestations of attendant force. "The monstrous assumption of philosophers that the infinitely perennial specific quality of matter-atoms is due to infinite strength and infinite rigidity, has for its only pretext," says Sir William Thomson, "that adopted by Newton and eminent modern physicists, namely: that it seems to account for the unalterable distinguishing qualities of

different kinds of matter. The movement toward the rejection of the hypothesis that atoms are infinitely strong and infinitely rigid was started by Helmholtz, three years since, in his investigation of the dynamical properties of vortex rings, from which he eliminates an important conclusion. Describing their motion as *wirbel-bewegung* (whirling motion), he concludes, from his experiments, that, if once set up a perfect fluid, that is, a fluid with no viscosity or friction of particles, it would be absolutely perpetual. Inertia would then be overcome. Vortex rings may be produced by smokers by arranging the lips so as to pronounce the letter O, and expelling smoke from the mouth gently, with the lips in that position. The smoke answers the function to render the rings visible—they being just as readily producible in transparent air, as has been experimentally demonstrated. These cylindrical rings move upward, when expelled from the mouth, perpendicularly to their planes, revolving rapidly, as they move, around a circular axis. This rotation corresponds in direction on the inner side with the general motion of the ring; the outer side moving in a contrary direction. They are not broken by impelling them one against another, but rebound with singular elasticity, the integrity of the ring being preserved.

It was this investigation upon which Sir Wm. Thomson grounded his new theory of the molecular constitution of matter; its ground-theorem being that a closed vortex core is literally indivisible by any action resultant from vortex motion. All bodies being composed of vortex atoms, therefore, the infinitely perennial specific quality of atoms is explicable without the Newtonian assumption.

Helmholtz, having proved that this quality exists in a perfect fluid when the motion he terms *wirbel-bewegung* has been created, and actual experiments having proved that when smoke rings in air are so impelled as to come in collision they cannot be made to penetrate each other, but rebound resiliently, Sir William deduces the conclusion that, by packing them more closely than gases are packed under the dynamical theory, the properties of liquids and solids might be explained without assuming the atoms themselves to be either liquid or solid, and the further conclusion that the number of primary assumptions may be lessened by one on the hypothesis that all bodies are composed of vortex atoms in a perfectly homogeneous fluid. The dynamic theory of gases, now received by Thomson, Tait, Joule, Helmholtz, and others—European physicists of eminence all of them—is in concord with Prof. Thomson's hypothesis also, which as generalization is of eminent value to physicists. Prof. Huxley, more recent in his conclusions, seems to assume the matter-atom as *per se* dynamic, if his biological definition is indicial of any opinion on the subject; and, generally, it will be noted, the tendency of physical science is to lessen the number of primary assumptions by rejecting the Newtonian enumeration of the primary properties.

The same general tendency may be observed in relation to the physical forces. Prof. Grove has proved that light and heat are moods of the same force. Faraday long since demonstrated that magnetism would produce electricity, with the important condition, however, that the electricity so produced is static, not dynamic; directive, not active; while Helmholtz has developed many curious analogies in his work on the interaction of forces. Mayer has done considerable in the same direction; while Carpenter has brought out the essential relation of the physical to the vital forces. These *data* have been all collected by Prof. Youmans, and brought together into a single ably edited volume.

This vortex-atomic theory involves, however, an unverifiable hypothesis in the determination of the specific form of the atom, which is an assumption to be avoided if possible, and can be by postulating that matter is dynamo-atomic. The qualities or properties of matter are thus reducible to a single postulate, which is self-evident, to wit, *capacity for motion*. Carrying the deduction a step further, from the correlation and interaction of all forces so-called, and from the demonstrated identity of light and heat; from the proved convertibility of forces and the demonstrated conservation of them, the generalization is valid that force is essentially the same, and that what are termed forces are only moods of one universal force, which may be either dynamic or static, either directive or motive, and the law of the motion of which is undulation, or rhythm, or, more properly, the wave or progressive motion.

The physicist may begin, therefore, with three simple postulates, two of which are self-evident:

I. Force, that which causes to move—affording a very simple explanation of gravitation, light, heat, electricity, magnetism, and consciousness, by reference of either to mood.

II. Matter, that which is moved—rigidly excluding all assumption of so-called primary qualities from the definition.

III. The explanation of physical, psychal, and intellectual phenomena in strict accordance with the dynamical hypothesis, that is, upon principles strictly mathematical.

The presupposition of the undulatory theory of light is that of an ethereal and exceedingly attenuated medium, which may, perhaps, answer the definition of the perfect homogeneous fluid necessary to the permanence of the *wirbel-bewegung* in Helmholtz's deduction or Thomson's vortex-atomic hypothesis. The dynamo-atomic hypothesis presupposes the same attenuated medium or ethereal matter pervading all cosmical interval. The cosmological evolution begins, therefore, with a dynamic element or causative of motion, that is, force, and a static element or vehicle of motion, that is, matter—which, strangely enough, answer very minutely to the ancient cosmological postulates of the male and female principles in the genesis of cosmogonies. This

force is either motive or directive, either transitive or modal. Magnetism may be made to produce static electricity, as has been demonstrated by Prof. Faraday. Both electricity and magnetism may be developed into activity by motion or revolution—the difference between them being that electricity seems to be eccentric and diffusive, while magnetism is concentric and attractive. Assuming that polar magnetism is magnetic force set free by revolution, and that the magnetic force is concentric—the needle, when magnetized at only one end, should point to the centre of the earth, which is in correspondence with the fact. Both ends being magnetized and the needle balanced, it points in the direction of the magnetic pole, parallel with the magnetic current. Again, place a compass near the magnetic pole and compel the needle to keep its horizontal position, and it points any way at random; but, if left to itself, it points downward toward the centre of the earth, and this constitutes what is termed the dip of the needle, as you move it from the equator in the direction of either pole. The conclusion is, therefore, that magnetism is concentric, which accounts for the facts, without supposing the interior of the earth to be a fixed natural magnet, which is disproved by the variation of the needle from year to year in the same locality, an exhaustive investigation of the laws of which was instituted by John A. Parker in 1866, and printed in the volume of American Institute reports for 1867, under the general head of *Polar Magnetism*. The conclusion is that electricity and magnetism represent the eccentric and concentric moods of the same force—the latter constituting the ground of what Newton terms gravitation. The former is diffusive; the latter, attractive. Heat and light resulting from undulations of the same attenuated medium, differ materially in this: that the former varies inversely as the length of the undulation, while the perception of the latter results from the ratio of undulations embraced in a single octave; and, again, heat appears to be attractive, while light is diffusive. Assuming these four to represent the concentric and eccentric moods, affinity may be postulated as their synthesis; and this completes the cosmological generalization. Again, assume the vitality which is allied to electricity as eccentric, and nervousity allied to magnetism as concentric, and consciousness represents the synthesis of all the moods in biology. The cosmological analysis is formulated thus:—

Eccentric moods — Light — Electricity > Affinity.
 Concentric moods — Heat — Magnetism >

The biological formulary of the forces proceeds further, and stands thus:—

Eccentric moods — Light — Electricity > Affinity < Vitality > Consciousness.
 Concentric moods — Heat — Magnetism >

The classification of vitality with the eccentric, and of nervousity with the concentric, is in concord with the fact that temperaments in which vitality predominates are the more electric; while temperaments

having a predominance of nervosity are the more magnetic. Or, again, the temperament of vitality develops more color; while the temperament of nervosity develops more intensity. The formulation propounded need not, however, be further verified, since the argument from comparative anatomy is conclusive as to its validity—the *data* being matters of every-day observation. Two points of the ground-assumption remain to be stated, to wit, the persistence of force and the persistence of matter; the mutable element appearing in form. Of the two former the absolute may be predicated; the latter constitutes the basis of phenomenal evolution and dissolution, or, in other words, the element of non-persistence and limitation. It is, therefore, neither in force nor in matter *per se* that the relative element appears, but in morphization. The formulation of the two primary assumptions as cosmological or biological includes, therefore, motion and form, and is represented as: Force, that which causes motion, the law of the evolution of which (motion) is rhythm; Matter, that in which motion appears, either as simple and continuous, the law of which is rhythm; or as arrested and limitedly persistent, that is, form or morphization, the law of which is beauty. As morphization, form pertains to cosmology; as individuation, to biology.

It is not proposed to attempt here the framing of a *mécanique cèleste* adopted to the dynamo-atomic theory, though, given the *wirbel-bewegung*, the elements upon which to ground a cosmological system are complete. Neither is it purposed to enter upon an analysis and enumeration of the *data* of biology, in which little could be added to the admirable induction and collation already developed by Herbert Spencer. The aim of this critique is, on the other hand, to develop an adequate biological definition. The definitions thus far propounded are referable to three generalizations, to wit:

1. Life is the tendency to individuation, which is German and connotes the essential physical condition of the evolution of organism, that is, individuality.

2. Life is the twofold internal movement of composition and decomposition, at once general and continuous—which is essentially physiological and merely the assertion of a fact, rather than a generalization from a collection of facts.

3. Life is the co-ordination of actions—which, again, is simply the assertion of a fact, and the same fact as before, looked at from the stand-point of the physicist rather than from that of the physiologist.

The first represents life merely as a tendency impressed upon the constitution of matter; the second apprehends physiologically the necessary condition of a living organism; while the third apprehends the same condition scientifically. The post-Kantian or Hegelian period of German philosophy, if valuable for no other reason, is to be credited with the only proximately satisfactory definition of life, as well as a great many valuable contributions to literary criticism. The

sin of German speculators has been—owing to a certain realistic tendency or disposition to mistake words for things, expunged from the Latin stock by dialectics, but still inherent in German—the seemingly profound at the expense of the really and intelligibly profound—as all philosophy postulated upon so-called intellectual intuition necessarily must be. Still, it is by no means a *sequitur* that the postulate is to be denied, for there can exist no doubt as to the validity of the conclusion that, as there is a poetic intuition or imaginative insight as to the ideal in beauty, so the highest sublimation of the rational intellect is intuitional in its processes. Of course, it is possible to explain the seemingly intuitional by assuming insensible processes of deduction going on in the mind, but not perceived as going on, and, therefore, occult; but the fact remains: both the imaginative vision and the rational vision are, in their most sublimated phases, rather immediate than mediate. The evidence of fact is ample as to this point and this mood of intellect, the paroxysms of which are rare—are, in their illumination, as if a star had burst inside of one's head—often astonish, as if a sun had shot athwart the heavens at midnight. Having no method of proof, however, the rational intuition is valueless to philosophical speculation; and this fact Bacon, himself most profoundly intuitional, was sensible enough to apprehend and announce in the promulgation of the objective method. Logically, therefore, upon Bacon, as the father of the objective method in philosophy, and Newton, almost the father of physical discovery, the Positive system depends; and yet the evolution of the only profound biological definition is due to one of the dreamiest disciples of the subjective.

If the wave-motion be taken as the basis of the law of rhythm in the action of motive force, it is to be considered in itself as both progressive and analogous to Helmholtz's *wirbel-bewegung*, since it has been proved by Gerstner and Scott Russell that, in the typical wave-motion of a liquid, in the ocean-wave, for example, all the particles revolve at the same time, in the same direction, and in vertical columns. This pulsating motion appears at least in a couple of species of plants—the *Hedysarum gyrans* and the *Colocasia esculenta*, as to the rhythmical tremor, of which latter M. Lecoq reported to the Academy of Sciences, France, in 1867, some very curious and interesting observations—and upon it and its dynamical laws is, no doubt, to be grounded the permanent hypothesis of *mécanique celeste*, all cosmical creation being analogous to a limitless and palpitating heart. At the basis of all motion lies this rhythmical impulse.

It is not scientific to assume special creations in biology. For its purposes, evolution is the fundamental conception of organism; and, as Mr. Spencer has been lucid in his definition of evolution and of its processes, quotation is admissible:

“1. An object is said to be *homogeneous* when one of its parts is like every other part. An illustration is not easy to find, as perfect homo-

geneity has probably never existed in the universe. But one may say that a piece of gold is homogeneous as compared with a piece of wood; or that a wooden ball is homogeneous as compared with an orange.

"2. An object is said to be *heterogeneous* where its parts have no resemblance to one another. All objects whatever are more or less heterogeneous. But a tree is said to be heterogeneous as compared with the seed from which it has sprung; and an orange is heterogeneous as compared to a wooden ball.

"3. *Differentiation* is the arising of an unlikeness between any two of the units which make up an aggregate. A piece of iron, before it is exposed to the air, is, to all intents and purposes, homogeneous. But when, by exposure to the air, it has acquired a coating of oxide, it is heterogeneous. The units composing its outside are unlike the units composing its inside; or, in other words, its outside is differentiated from its inside.

"4. *Integration* is the grouping together of those units of a heterogeneous aggregate which resemble one another. A good example is afforded by crystallization. The particles of the crystallizing substance, which resemble each other, and which have no resemblance to the particles of the solvent fluid, gradually unite to form the crystal; which is that said to be *integrated* from the solution. Another case of integration is seen in the rising of cream upon the surface of a dish of milk, and in the frothy collection of carbonic acid bubbles covering a lately filled glass of ale. When small pebbles, mixed with sand, are thrown into a tumbler and gently agitated, the result is an integration of the pebbles at the bottom of the vessel and of the sand above them."

From these definitions, which are definitions of processes, he deduces his definition of evolution:

"Whether it be in the development of the earth, in the development of life upon its surface, in the development of society, of government, manufactures, of commerce, of language, literature, science, art, this same advance from the simple to the complex, through successive differentiations, holds uniformly. From the earliest traceable cosmical phenomena down to the latest results of civilization, it will be found that the transformation of the homogeneous into the heterogeneous is that in which evolution essentially consists."

There may be doubts as to the precision of the definition of evolution as applied to biology. The tendency of matter to organization would, perhaps, express Mr. Spencer's meaning more definitively; the tendency to individuation expressing with more precision that which Mr. Spencer terms integration. In fact, the definitions of the English philosopher pertain rather to non-biological evolution than to the evolution of living organism.

Pre-historically considered, the tendency of matter to organization expresses the biological definition with sufficient precision; but, with the advent of humanity, the necessity for a broader and deeper gene-

realization appears. The phenomenon of self-consciousness must be accounted for and admitted into the generalization, if it is to cover more than the mere physical conditions of being, which are expressed definitely enough in the first definition quoted, which is attributable to Schelling, or in the second, proposed by De Blainville, or in the third, which belongs to Mr. Spencer. For philosophical purposes, as inclusive of the phenomenon of self-consciousness, it is necessary to attempt a deeper generalization—to begin with the beginning, that is, with matter, and end with the result, that is, with self-consciousness. Individuation must appear simply as a law of biological evolution; and the co-ordination of actions as a condition of its persistence. The word *tendency* expresses the dynamic idea sufficiently lucidly, and is, perhaps, preferable to *motion* or *impulse* for purposes of definition. The three words, *matter*, as expressive of the ground of organism, *tendency*, as expressive of its dynamical direction, and *consciousness*, as expressive of its logical end, may, therefore, be adopted as the basis of definition. The collateral of consciousness, to wit, self-hood, must be included in the generalization, as also must that of realization; and the fabric is logically complete. Put in the form of a proposition, it stands thus:

Life is the tendency of matter to self-consciousness.

The propositions of Schelling, De Blainville and Spencer are expressive simply of certain laws of evolution incident to the tendency of matter toward the realization of self-consciousness, and may be formulated thus:

1. Law of evolution: progressive individuation.
2. Law of persistence: co-ordination of actions.
3. Law of physiology: twofold internal movement of composition and decomposition, at once general and continuous.

The first might, perhaps, be better designated as the law of morphization, though evolution is more comprehensive, and, for philosophical purposes, is the most important of the three—the two latter pertaining merely to physics. There remains yet a fourth law, grounded upon the ratiocination which has preceded: it is the law of beauty. For investigation of the question, What is to be the ultimate sublimate of humanity? the two latter may be rejected, and the law of beauty added. The formulary will then be expressed:

Life is the tendency of matter to self-consciousness.

1. First law of morphization: progressive individuation.
2. Second law of morphization: progressive beauty, that is, progress from beauty as relative to beauty as absolute, from beauty as ephemeral to beauty as persistent and eternal.

The persistence of the dynamic and static elements in organism, that is, force and matter, has never been denied. The morphization has constituted the element of mutation; and that its mutation or want of absolute persistence is due to the imperfect realization of the

individual and the beautiful in organism, ensues as a logical consequence. Again, as the struggle of matter is to apprehend itself in consciousness, and as the struggle of the limited in consciousness is to attain the absolute in consciousness, it ensues, as a logical consequence, that the realization of the theological ideal of the historical destiny of man is by no means undemonstrable from the *data* and inductions of science. There is one law worth noting here, as to the persistence of the dynamic element, not only *per se*, but in any special mood that it may develop. The modal persistence of force has given occasion to assume plurality of forces; and there is as little reason to suppose that the mood of self-consciousness—its most sublimated mood, certainly—is not persistent as there is to suppose that the mood of magnetism is not persistent. Admitting, therefore, the persistence of conservation of force, as Prof. Carpenter terms it, and the further persistence of mood, which is demonstrable from Prof. Grove's investigations as to the correlation of forces—the scientific induction proves the persistence of self-consciousness, which may be termed the individuation of force; demonstrating thereby the theological dogma of the immortality of the soul.

It is obvious, therefore, that theology may be brought within the circle of scientific induction, provided the biological definition be deepened in its generalization, as heretofore suggested, so as to include the phenomenon of consciousness. This conclusion is, of course, fatal to the pretensions of Positivism as the successor of theology, and indicates, with the precision that a weather-vane indicates the direction of an air-current, that the historical persistence of the two fundamental propositions in which the theological system is grounded, to wit, monotheism and the historical theanthropomorphization of humanity, is both a valid deduction from the phenomenon of consciousness and a valid induction of science. Moreover, this induction, valid upon the hypothesis of the unity of force, is of equal validity, whether what are termed forces be simply moods, or original dynamic principles. The ego, therefore, is a persistent and indestructible individuality, the self-expression of which constitutes history, the evolution of which constitutes the pre-historic biology, the finality of which, historical progress being interpreted as the struggle of the limited in consciousness to compass the absolute in consciousness, is theanthropy or that realization of the absolute, which the inspirational *poiesis* historically foreshadows.

At first glance, the biological definition herein proposed resembles a truism, and, if I mistake not, a truism it is. The fact, however, that it has been overlooked in the dreary annals of physical and metaphysical speculation, answers sufficiently well as an apology for having inflicted upon the reader a rather obvious train of ratiocination looking to its elimination. So many have been the fantastic pagodas of logic upreared with the view of topping them with the solution of the mystery of being, that it must be refreshing to peruse something obvious—at least

semi-occasionally; and this is my apology for having discussed at length and rather discursively—for having endeavored to demonstrate, step by step, a theorem which is, in all respects, almost too self-evident to need elaborate demonstration.

The key is simple; but, with it may be unraveled the riddle. It unlocks the door, at least, of a reconciliation of theology with the scientific method; and, as both must be ranked as persistent, the reconciliation is desirable. Simple as is its generalization, it opens the way, too, for bringing metaphysics within the circle of scientific demonstration, and finds a durable scientific basis upon which to build the structure of theological metaphysics: for, theologically stated, the biological definition is equally explicit in its adherence to scientific induction. Let me state it theologically:

Life is the tendency of the material toward the spiritual, eventuating in the consciousness of self.

Supplement this definition with a second definition, that is, a definition of history from the theological point of view, and the basis of the theological fabric is complete and grounded on inexorable scientific induction as well. This second definition may be thus formulated:

History is the struggle of the human in the direction of theanthropy, eventuating in incarnation, and having for its end the ultimate historical synthesis of the human with the God-consciousness.

This is the goal of the toilers after knowledge, and the goal that forever eludes their pursuit. It is the basis of the dreams of Kepler; of the scientific reveries of Comte; of the inexorable inductions of Bucan, of the splendid cosmogony of La Place; of the goblin philosophical structures of Hegel and Schelling. It constitutes the secret of the vain pursuit of man after the phantom of truth, of beauty, of novelty—in short, after the distant and vaguely apprehended ideals he seeks to attain, but to attain which were yet madness. Rudderless and compassless, he presses on, in thought, in dream, in reverie, in art, in poetry, in philosophy, through fens of speculation and morasses of ontology, until at last his fate overtakes him, and an epitaph is all that is left to tell the story of his vain struggle after the Egeria of his dreams—the absolute.

If materialism is to be the coming philosophy, therefore, the subjective tendency (or element) of matter must be admitted in order to render philosophy possible. The definition of evolution as the progressive struggle of matter in the direction of subjectivity, will then constitute the true meaning of Mr. Spencer's generalization; while life (in definition) will be represented by matter as apprehending itself in subjectivity, and philosophy will return to a profounder era of metaphysics in the explanation of the phenomenal upon psychological principles. The problem will be: Given the objective and subjective poles in matter to find the x of the grand unity; and this is a problem in the study of which theologians can join with scientists.