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ON

THE METHOD

OF THE

STUDY OF MIND:

AN INTRODUCTORY CHAPTER

TO A

PHYSIOLOGY AND PATHOLOGY

OF THE

MIND.



BY

HENRY MAUDSLEY, M.D. LOND.,

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS; PHYSICIAN TO THE WEST LONDON HOSPITAL;
JOINT EDITOR OF THE 'JOURNAL OF MENTAL SCIENCE'; HONORARY MEMBER OF THE
MEDICO-PSYCHOLOGICAL SOCIETY OF PARIS; FORMERLY RESIDENT PHYSICIAN
OF THE MANCHESTER ROYAL LUNATIC HOSPITAL, ETC. ETC.

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THE
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BEING INTRODUCTORY TO A
PHYSIOLOGY AND PATHOLOGY
OF THE
MIND.



“Ich sag’ es dir : ein Kerl, der speculirt,
Ist wie ein Thier, auf dürrer Heide
Von einem bösen Geist im Kreis herum geführt,
Und rings umher liegt schöne grüne Weide.”

Faust.

THE right estimate of his relations to external nature has ever been to man a matter of extreme difficulty and uncertainty. In the savage state of his infancy he feels himself so little in the presence of nature's vastness, so helpless in conflict with its resistless forces, that he falls down in abject prostration before its various powers. The earth of a sudden heaves beneath his trembling feet, and his shattered dwellings bury him in their ruins ; the swelling waters overpass their accustomed boundaries and indifferently sweep away his property or his life ; the furious hurricane ruthlessly destroys the labour of years ; and famine or pestilence, regardless of his streaming eyes and piteous prayers, stalks in desolating march through a horror-stricken people. In the

deep consciousness of his individual powerlessness he falls down in an agony of terror and worships the causes of his sufferings: he deifies the powers of nature, builds altars to propitiate the angry Neptune, and, by offering sacrifices of that which is most dear to him, even his own flesh and blood, hopes to mitigate the fury of Phœbus Apollo and to stay the dreadful clang of his silver bow. Everything appears supernatural because he knows nothing of the natural; palsied with fear, he cannot observe and investigate; himself he feels to be insignificant and helpless, while to nature he looks up with reverential awe as mighty and all-powerful. Reflect on the fearful feelings which any apparent exception to the regular course of nature even now produces, on the superstitious dread which of a certainty follows such unfamiliar event, and it will not be difficult to realise the extreme mental prostration of primitive mankind.

Through familiarity, however, consternation after a while subsides, and the spirit of inquiry follows upon that of reverence; the prostrate being rises from his knees to examine into the causes of events. Experience, sooner or later, reveals the uniformity with which they come to pass; he learns more or less of the laws of their occurrence, and perceives that he can by observation avoid much of the damage which he has hitherto suffered—that he can, by attending to their laws, even use to his profit those once dreaded physical forces. Now it is that man begins to feel that he has a much higher position in nature than in his infancy he had imagined; for a time he looks upon himself as belonging to the same order as the things around him; and he emancipates himself in great part from the dominion of the priests in whom he had hitherto believed as the sacred propitiators of the gods whom his fears had fashioned. When his creeds are seen to spring from an imperfection of the intellect, the prayers founded on them are abandoned as marking an imperfection of the will.

Thales of Miletus is said to have been the first who, in this advance amongst the Greeks, laid aside the priestly character and stood forth as a pure philosopher; and those who immediately followed him, and constituted the Ionian school of philosophy, having an instinctive feeling of the unity between man and nature, did seek objectively for a first principle of things—the *ἀρχή*—common to him and the rest of nature. This slow and tedious method was soon, however, abandoned for the easier and quicker method of deduction from consciousness: abstractions were made from the concrete by the active mind; and the abstractions, being then converted into objective realities, were looked upon and applied as actual entities in nature. Anaximander, looking into his own mind and finding an imbecility there, gave to it the name of the Infinite, and, transferring it outwards, was thenceforth quite content to pronounce it to be the

true origin of all things; whilst Pythagoras, going perhaps still further into the unmeaning, proclaimed numbers, which are mere arbitrary symbols, to be actual existences and the essences of things. Thus it was that man, forgetful of his early humility, created the laws of an external world after the pattern of his own thoughts: such motives as he felt to influence his own actions were held also to be the principles governing the relations of external objects; and natural phenomena were explained by sympathies, loves, discord, hates. As the child attributes life to the dead objects around it, speaking with them and thinking to receive answers from them, so mankind, in the childhood of thought, assigns its subjective feelings to objective nature, entirely subordinating the physical to the metaphysical: it is but another form of that anthropomorphism by which the Dryad was placed in the tree, the Naiad in the fountain, Atropos with her scissors near the running life-thread, and a Sun-god enthroned in the place of a law of gravitation. As was natural, man, who thus imposed his laws upon nature, soon lost all his former humility, and from one erroneous extreme passed to the opposite; as once he fell abjectly down in an agony of fear, so now he rose proudly up in an ecstasy of conceit.

The assertion that man is the measure of the universe definitely expressed this metaphysical stage of human development. But it was a state that must plainly be fruitless of real knowledge; there could be no general agreement among men when each one looked into his own mind, and, arbitrarily making what he thought he found there the laws and principles of external nature, constructed the laws of the world out of the depths of his own consciousness. Disputes must continually arise about words when words have not definite meanings; and the unavoidable issue must be Sophistry and Pyrrhonism: the history of the human mind does, indeed, show that systems of scepticism have regularly alternated with systems of philosophy. Fruitful of empty ideas and wild fancies, philosophy has not been unlike those barren women who would fain have the rumbling of wind to be the motion of offspring. Convinced of the vanity of its ambitious attempts, Socrates endeavoured to bring philosophy down from the clouds, introduced it into the cities, and applied it to the conduct of human life; while Plato and Aristotle, opposite as were their professed methods, were both alive to the vagueness of the common disputations, and both laboured hard to fix definitely the meanings of words. But words cannot attain to definiteness save as living outgrowths of realities, as the exact expressions of the phenomena of life in the increasing speciality of human adaptation to external nature. As it is with life objectively, and as it is with cognition or subjective life, so is it with the language in which the phenomena are embodied: in the organic growth of a

language there is a continuous differentiation, first of nouns into substantives and adjectives, then of the latter into adjectives proper and nouns abstract; synonymes again disappear, each getting its special appropriation, and superfluous words are taken up by new developments and combinations of thought. How, then, was it possible that a one-sided method which entirely ignored the examination of nature, should do more than repeat the same things over and over again in words which, though they might be different, were yet not less indefinite? The results have answered to the absurdity of the method; for, after being in fashion for more than two thousand years, nothing has been established by it; "not only what was asserted once is asserted still, but what was a question once is a question still, and instead of being resolved by discussion is only fixed and fed." (Bacon, *Prol. Inst. Magn.*)

Perhaps, if men had always lived in the sunny climes of the south, where the luxuriance of nature allowed of human indolence, they might have continued vainly to speculate; but when they were brought face to face with nature in the rugged north, and were driven to force by persevering labour the means of subsistence from her sterile bosom, then there arose the necessity to observe her processes and investigate her secret ways. There was an unavoidable intending of the mind to the realities of nature; and this practice, which the exigencies of living first enforced, became in the fulness of time with those who had leisure and opportunity the disposition consciously to investigate and interpret nature. In Roger Bacon, we see the human mind striving, as it were, unconsciously after the true method of development; while in the Chancellor Bacon, who systematized the principles and laid down the rules of the inductive philosophy, we observe it doing with design and method that which it had hitherto been blindly aiming at. But as it is with the infant, so was it with humanity; action preceded consciousness, and Bacon himself was the efflux of a spirit which prevailed and not the creator of it. By thus humbling himself to obey, man has conquered nature; and those plenteous "fruits and invented works" which Bacon confidently anticipated as "sponsors and sureties" for the truth of his method, have been reaped in the richest abundance.

It seems strange enough now to us that men should not have sooner hit upon the excellent and profitable method of induction. How came it pass that when they surveyed organic nature, as Aristotle notably did, they failed to perceive the progress in development from the general and simple to the special and complex, which is evident throughout it? Had they but formularised this law of increasing speciality and complexity in organic adaptation to external nature, then they had scarcely failed to apply it to conscious human development; and that would have been to establish deductively the

necessity of the inductive method. Unfortunately, Aristotle stood alone ; and it remains his particular merit to have foreseen in some sort the value of the inductive method. Had he, also, consistently followed it in practice, which he did not, there was an impassable hindrance to its general adoption, in the moral errors engendered by the metaphysical or subjective method, of which Plato was so powerful a representative, and so influential an exponent. Man, as the measure of the universe, esteemed himself far too highly to descend to be the servant and interpreter of nature ; and this erroneous conceit not only affected his conception of his relation to the rest of nature, but penetrated his social nature, and vitiated his whole habit of thought : the superstitious reverence of the Greek who would put to death a victorious general because he had left his dead unburied on the field of battle, must have prevented Aristotle from anatomical examination of the structure of the human body. The same errors are continually reappearing in human history : what happened in the middle ages may illustrate for us the habit of Greek thought ; for at that time mistaken religious prejudice allied itself most closely with the metaphysical method which exalted man so much over the rest of nature, opposing most virulently the birth of positive science, which seemed to threaten to degrade him ; and for a time it was almost doubtful which would win. Can we wonder, then, that the erroneous method was triumphant in Greece in the fourth century before Christ, when it is only recently in England, in the nineteenth century after Christ, that the barbarian's reverence for a dead body has permitted anatomical dissection, and when the finger-bone of a saint, or a rag of his clothing, is still treasured up, in some parts of the world, as a most precious relic endued with miraculous virtues ! The evil of the metaphysical method was not intellectual deficiency only, but a corresponding baneful moral error.

The adoption of the inductive method, which makes man the servant and interpreter of nature, is in reality the systematic pursuance of the law of progress in organic development ; it is the conscious intending of the mind to external realities, the submitting of the understanding to things, in other words, the increasing speciality of internal adjustment to external impressions ; and the result is a victory by obedience, an individual increase through adaptation to outward relations, in accordance with the so-called principle of natural selection. The mental capacity of one who is deprived of any one of his senses, which are the inlets to impressions from without, or the gateways of knowledge, is less than that of one who is in the full possession of all his senses ; and the great advances in science have uniformly corresponded with the invention of some instrument by which the power of the senses has been increased, or their range of action extended. Astronomy is that which the eye has been enabled to see by the telescope ; the revelations of the inmost

processes of nature have been due to the increased power of vision which the microscope has conferred; the extremely delicate balance has supplied to science a numerical exactness; the spectrum has furnished a means of analysing the constitution of the heavenly bodies; and the galvanometer already gives the most hopeful pre-sage of important discoveries in nervous function. Through the senses has knowledge entered; and the intellect has in turn devised means for extending the action and increasing the discriminating exactness of the senses: there has been action and reaction and progressive specialisation and complication thereof. The two aspects of this relation we designate, in their highest manifestations, as cognition and action, or science and art.

Thus much concerning the historical evolution of the inductive method. But now comes the most important question, whether it is available for the study of the whole of nature. Can we apply the true inductive and objective method to the investigation of psychical as well as of physical nature? In the latter case, it has long received universal sanction; but in the study of a man's mind it is still a question what method should rightly be employed. Plainly, it is not possible by simple observation of others to form true inductions as to their mental phenomena; the defect of an observation which reaches only to the visible results of invisible operations, exposes us without protection to the hypocrisy, conscious or unconscious, of the individual; and the positive tendency, which no one can avoid, to interpret the action of another mind according to the measure of one's own, to see not what is in the object, but what is in the subject, frequently vitiates an assumed penetration into motives. If we call to our aid the principles of the received system of psychology, matters are not mended; for its ill-defined terms and vague traditions, injuriously affecting our perceptions, and overruling our understanding, do not fail to confuse and falsify inferences. It must unfortunately be added that, in the present state of physiological science, it is quite impossible to ascertain, by observation and experiment, the nature of those organic processes which are the bodily conditions of mental phenomena. There would appear, then, to be no help for it but to have entire recourse to the subjective method—that method of interrogating self-consciousness which has found so much favour at all times. Before making any such admission, let this reflection be weighed: that the instinctive *nisus* of humanity commonly precedes the recognition of systematic method; that men, without knowing why, do follow a course which there exist very good reasons for. Nay more: the practical instincts of mankind often work beneficially in an actual contradiction to their professed doctrines. When in the middle ages faith was put in the philosophy of the schools, the interrogation of nature by experiment was going on in many places; and the superstitious

people that believes in the direct interference of spirits or of gods, still adopts such means of self-protection as a simple experience of nature teaches. Man does not consciously determine his method and then enter upon it; he enters blindly upon it, and at a certain stage awakes to consciousness. In the onward flowing stream of nature's organic development, life first becomes self-conscious in man: in the slumbering mental development of mankind it is the genius who at due time awakes to active consciousness the sleeping century. It would indeed go hard with mankind if they must act wittingly before they acted at all.

Two facts come out very distinctly from a candid observation of the state of thought at the present day. One of these is the little favour in which metaphysics is held and the very general conviction that there is no profit in it; the consequence of which firmly fixed belief is, that it is cultivated as a science only by those whose particular business it is to do so, who are engaged not in action, wherein the true balance of life is maintained, but in dreaming in professorial chairs; or if by any others, by the ambitious youth who goes through an attack of metaphysics as a child goes through an attack of measles, getting haply an immunity from a similar affection for the rest of his life; or lastly, by the untrained and immature intellects of those metaphysical dabblers who continue youths for life. A second fact, which has scarcely yet been sufficiently weighed, is the extreme favour in which biography is held at the present time, and the large development which it is receiving.

Let us look first at the import of biography. As the business of a man in the world is action of some kind, and as his action undoubtedly results from the relations between him and his surroundings, it is plain that biography, which estimates both the individual and his circumstances, and displays their reactions, can alone give an adequate account of the man. What was the mortal's force of character, what was the force of circumstances, how he struggled with them, and how he was affected by them,—what was the life-product under the particular conditions of its evolution:—these are the questions which a good biography aspires to answer. It regards man as a concrete being, acknowledges the differences between men in characters and capabilities, recognises the helpful or baneful influence of surroundings, and patiently unfolds the texture of life as the inevitable result of the elements out of which, and the conditions under which, it has been worked. It is, in fact, the application of positive science to human life, and the necessary consequence of the progress of the inductive philosophy. No marvel, then, that biography forms so large a part of the literature of the day, and that novels, its more or less faithful mirrors, are in so great request. The instincts of mankind are here, as heretofore, in advance of systematic knowledge or method.

On the other hand, the metaphysician deals with man as an abstract or ideal being, postulates him as a certain constant quantity, and thereupon confidently enunciates empty propositions. The consequence is, that metaphysics has never made any advance, but has only appeared in new garb; nor can it in truth advance, unless some great addition is made to the inborn power of the human mind. It surely argues no little conceit in any one to believe that what Plato and Descartes have not done, he, following the same method, will do. Plato interrogated his own mind, and set forth its answers with a clearness, subtlety, and elegance of style that is unsurpassed and unsurpassable; until then the very unlikely event of a better mind than his making its appearance, his system may well remain as the adequate representative of what the metaphysical method can accomplish. Superseded by a more fruitful method, it is practically obsolete; and its rare advocate, when such an one is found, may be said, like the Aturian parrot of which Humboldt tells, to speak in the language of an extinct tribe to a people which understand him not.

But the method of interrogating self-consciousness may be employed, and is largely employed, without carrying it to a metaphysical extreme. Empirical psychology, founded on *direct* consciousness as distinguished from the *transcendental* consciousness on which metaphysics is based, claims to give a faithful record of our different states of mind and their mutual relations, and has been extravagantly lauded, by the Scotch school, as an inductive science. Its value as a science must plainly rest upon the sufficiency and reliability of consciousness as a witness of that which takes place in the mind. Is the foundation then sufficiently secure? It may well be doubted; and for the following reasons:

(a.) There are but few individuals who are capable of attending to the succession of phenomena in their own minds; such introspection demanding a particular cultivation, and being practised with success by those only who have learned the terms, and been imbued with the theories, of the system of psychology supposed to be thereby established.

(b.) There is no agreement between those who have acquired the power of introspection; and men of apparently equal cultivation and capacity will, with the utmost sincerity and confidence, lay down directly contradictory propositions. It is not possible to convince either opponent of error, as it might be in a matter of objective science, because he appeals to a witness whose evidence can be taken by no one but himself, and whose veracity, therefore, cannot be tested.

(c.) To direct consciousness inwardly to the observation of a particular state of mind is to isolate that activity for the time, to cut it off from its relations, and, therefore, to render it unnatural. In

order to observe its own action, it is necessary that the mind pause from activity; and yet it is the train of activity that is to be observed. As long as you cannot effect the pause necessary for self-contemplation, there can be no observation of the current of activity: if the pause is effected, then there can be nothing to observe. This cannot be accounted a vain and theoretical objection; for the results of introspection too surely confirm its validity: what was a question once is a question still, and instead of being resolved by introspective analysis is only fixed and fed.

(*d.*) The madman's delusion is of itself sufficient to excite profound distrust, not only in the objective truth, but in the subjective worth, of the testimony of an individual's self-consciousness. Descartes laid it down as the fundamental proposition of philosophy that whatever the mind could clearly and distinctly conceive, was true: if there is one thing more clearly and distinctly conceived than another, it is commonly the madman's delusion. No marvel, then, that psychologists, since the time of Descartes, have held that the veracity of consciousness is to be relied upon only under certain rules, from the violation of which, Sir W. Hamilton believed, the contradictions of philosophy have arisen. On what evidence then do the rules rest? Either on the evidence of consciousness, whence it happens that each philosopher and each lunatic has his own rules, and no advance is made; or upon the observation and judgment of mankind, to confess which is very much like throwing self-consciousness overboard—not otherwise than as was advantageously done by positive science when the figures on the thermometer, and not the subjective feelings of heat or cold, were recognised to be the true test of the individual's temperature.

It is not merely a charge against self-consciousness that it is not reliable in that of which it does give information; but it is a proveable charge against it that it does not give any account of a large and important part of our mental activity: its light reaches only to states of consciousness, and not to states of mind. Its evidence then is not only untrustworthy save under conditions which it nowise helps us to fix, but it is of little value, because it has reference only to a small part of that for which its testimony is invoked. May we not then justly say that self-consciousness is utterly incompetent to supply the facts for the building up of a truly inductive psychology? Let the following reasons further warrant the assertion:

1. It is the fundamental maxim of the inductive philosophy that observation should begin with simple instances, ascent being made from them through appropriate generalisations, and that no particulars should be neglected. How does the interrogation of self-consciousness fulfil this most just demand? It is a method which is applicable only to mind at a high degree of development, so that

it perforce begins with those most complex instances which give the least certain information; while it passes completely by mind in its lower stages of development, so that it ignores those simpler instances which give the best or securest information. In this it resembles the philosopher who, while he gazed upon the stars, fell into the water; for if, as Bacon says, "he had looked down he might have seen the stars in the water, but looking aloft he could not see the water in the stars." Where has the animal any place in the accepted system of psychology? or the child the direction of whose early mental development is commonly decisive of its future destiny? To speak of induction where so many important instances are neglected, and others are selected according to caprice or the ease of convenience, is to rob the word of all definite meaning, and most mischievously to misuse it. A psychology which is truly inductive must follow the order of nature, and begin where mind begins in the animal and infant, gradually rising thence to those higher and more complex mental phenomena which the introspective philosopher discerns or thinks he discerns. Certainly it may be said, and it has been said, that inferences as to the mental phenomena of the child can be correctly formed from the phenomena of the adult mind. But it is exactly because such erroneous inferences have been made, that the mental phenomena of the child have been misunderstood, and misinterpreted, and that psychology has not received the benefit of the correction which a faithful observation of them would have furnished. It was the physiologist who by a careful observation of the lower animals, "having entered firmly on the true road, and submitting his understanding to things," arrived at generalisations which were found to explain many of the mental phenomena of the child, and which have furthermore thrown so much light upon the mental life of the adult. The careful study of the genesis of mind is as necessary to a true knowledge of mental phenomena as the study of its plan of development confessedly is to an adequate conception of the bodily life.

Again, it might be thought a monstrous mistake of nature to have produced so many idiots and lunatics, seeing that the inductive psychologists take no notice whatever of the large collection of instances afforded by these unwelcome anomalies. Certainly it may be said, and no doubt it has been said, that the mental phenomena of the idiot or lunatic are morbid, and do not, therefore, concern psychology. It is true that they do not concern a psychology which violently separates itself from nature. But it is exactly because psychology has thus unwarrantably severed itself from nature—of which the so-called morbid phenomena are no less natural a part than are the phenomena of health—that it has not sure foundations; that it is not inductive; that it has not received the benefit of the correction which a faithful observation of the unsound mind would

have afforded. In reality insanity furnishes what in such matter ought to have been seized with the utmost eagerness—for they cannot be made—namely, actual experiments well suited to the establishment of the principles of a truly inductive science. The laws of mental action are not miraculously changed nor reversed in madness, though the conditions of their operation are different; and nature does not recognise the artificial and ill-starred divisions which men, for the sake of convenience, and not unfrequently in the interests of ignorance, make.

2. Consciousness gives no account of the essential material conditions which underlie every mental manifestation, and determine the character of it: let the function of an individual's optic ganglia be abolished by disease or otherwise, and he would not be conscious that he was blind until experience had convinced him of it. On grounds which will not easily be shaken it is now indeed admitted, that with every display of mental activity there is a correlative change or waste of nervous element; and on the condition of the material substratum must depend the degree and character of the manifested energy or the mental phenomenon. Now the received system of psychology gives no attention to these manifold variations of feeling in the same individual which are due to temporary modifications of the bodily state, and by which the ideas of the relations of objects to self and to one another are so greatly influenced. The quality of the ideas which arise in the mind under certain circumstances, the whole character, indeed, of our insight at the time, is notably determined in great part by the feeling which may then have sway; and that feeling is not always objectively caused, but may be entirely due to a particular bodily condition, as the daily experience of every one may convince him, and as the earlier phenomena of insanity so strikingly illustrate.

Again, Bacon long ago set down *individual psychology* as wanting; and insisted on a scientific and accurate dissection of minds and characters, and the secret dispositions of *particular* men, so "that from the knowledge thereof better rules may be framed for the treatment of mind." As far as the present psychology is concerned, the individual might have no existence in nature; he is an inconvenience to a system which, in neglecting the individual constitution or temperament, ignores another large collection of valuable instances. As far as truth is concerned, however, the individual is of some moment, seeing that he often positively contradicts the principles arbitrarily laid down by a theoretical system.

When the theologian, who occupies himself with the supersensuous, has said all that he has to say from his point of view; when the jurist, who represents those principles which the wisdom of society has established, has in turn exhaustively argued from his point of view; then the ultimate appeal in a concrete case must be

to the physician, who deals with the bodily life ; through his ground only can the theologist and jurist pass to their departments ; and they must accept their knowledge of it from him : on the foundation of facts which the faithful investigation of the bodily nature lays, must rest, if they are to rest safely, their systems. Certainly it is not probable that this most desirable and inevitable result will come to pass in this day or generation ; for it is not unknown how slowly the light of knowledge penetrates the thick fogs of ignorance, nor how furiously irritated prejudice opposes the gentle advent of new truth. Happily, it is certain that in the mortality of man lies the salvation of truth.

3. There is an appropriation of external impressions by the mind or brain which regularly takes place without any, or only with a very obscure, affection of consciousness. As the various organs of the body select from the blood the material suitable to their nourishment, and assimilate it, so the organ of the mind unconsciously appropriates, through the inlets of the senses, the influences of its surroundings. The impressions which it thus receives and retains do not produce definite ideas and feelings, but they nevertheless permanently affect the mind's nature ; so that as an individual consciously provides his food, and then leaves the due assimilation of it to the unconscious action of the organism, in like manner may he consciously arrange the circumstances in which he will live, but cannot then prevent the unconscious assimilation of their influence, and the corresponding modification of his character. Not only slight habits of movement are thus acquired, but habits of thought and feeling are imperceptibly organised ; so that an acquired nature may ultimately govern one who is not at all conscious that he has changed. Let any one take careful note of his dreams, and he will find that many of the seemingly unfamiliar things with which his mind is then occupied, and which appear to be new and strange productions, are traceable to the unconscious appropriations of the day. There are other stories on record, like that of the servant-girl which Coleridge quotes, who, in the ravings of fever, repeated long passages in the Hebrew language, which she did not understand, and could not repeat when well, but which, when living with a clergyman, she had heard him read aloud. The remarkable memories of certain idiots, who, utterly destitute of intelligence, will repeat the longest stories with the greatest accuracy, testify also to this unconscious cerebral action ; and the way in which the excitement of a great sorrow, or some other cause, as the last flicker of departing life, will sometimes call forth in idiots manifestations of mind of which they always seemed incapable, renders it certain that much is unconsciously taken up by them which cannot be uttered, but which leaves its relics in the mind.

It is a truth which cannot be too distinctly borne in mind, that

consciousness is not co-extensive with mind. From the first moment of its independent existence the brain begins to assimilate impressions from without, and to re-act thereto in corresponding organic adaptations; this it does at first without consciousness, and this it continues to do unconsciously more or less throughout life. Thus it is that mental power is being organised before the supervention of consciousness, and that the mind is subsequently regularly modified as a natural process without the intervention of consciousness. The preconscious action of the mind, as certain metaphysical psychologists in Germany have called it, and the unconscious action of the mind, which is now established beyond all rational doubt, are assuredly facts of which the most ardent psychologist must admit that self-consciousness can give us no account.

4. Everything which has existed with any completeness in consciousness is preserved, after its disappearance therefrom, in the mind or brain, and may reappear in consciousness at some future time. That which persists or is retained has been differently described as a residuum, or relic, or trace, or vestige, or again as potential, or latent, or dormant idea; and it is in the existence of such residua that memory depends. Not only definite ideas, however, but all affections of the nervous system, feelings of pleasure and pain, desires, and even its outward reactions, thus leave behind them their residua and lay the foundation of modes of action, feeling, and thought. Particular talents are sometimes formed quite, or almost quite, involuntarily; and complex actions which were first consciously performed by dint of great application, become by repetition automatic; ideas, which were at first consciously associated, ultimately call one another up without any consciousness, as we see in the quick perception or intuition of the man of large worldly experience; and feelings, once active, leave behind them their unconscious residua, thus affecting the general tone of the character, so that, apart from the original or inborn nature of the individual, contentment, melancholy, cowardice, bravery, and even moral feeling, are generated as the results of particular life experiences. Consciousness is not able to give any account of the manner in which these various residua are perpetuated, and how they exist latent in the mind; but a fever, a poison in the blood, or a dream, may at any moment recall ideas, feelings, and activities which seemed for ever vanished. The lunatic sometimes reverts, in his ravings, to scenes and events of which, when in his sound senses, he has no memory; the fever-stricken patient may pour out passages in a language which he understands not, but which he has accidentally heard; a dream of being at school again brings back with painful vividness the school feelings; and before him who is drowning every event of his life seems to flash in one moment of strange and vivid consciousness.

It has been before said that mind and consciousness are not synonymous; it may now be added, that the existence of mind does not necessarily involve the activity of mind. Descartes certainly maintained that the mind always thinks, and others, resting on that assumption, have held that we must always dream in sleep, because the mind, being spiritual, cannot cease to act; for non-activity would be non-existence. Such opinions only illustrate how completely metaphysical conceptions may overrule the best understanding; so far from the mind being always active, it is the fact that at each moment the greater part of the mind is not only unconscious but inactive. Mental power exists in statical equilibrium as well as in manifested energy; and the utmost tension of a particular mental activity may not avail to call forth from their secret repository the dormant energies of latent residua, even when most urgently needed: no man can call to mind at any moment the thousandth part of his knowledge. How utterly helpless is consciousness to give any account of the statical condition of mind! But as statical mind is in reality the statical condition of the organic element which ministers to its manifestations, it is plain that if we ever are to know anything of inactive mind, it is to the progress of physiology that we must look for information.

5. Consciousness reveals nothing of the process by which one idea calls another into activity, and has no control whatever over the manner of the reproduction; it is only when the idea is made active by virtue of some association, when the *effect* solicits or extorts attention, that we are conscious of it; and there is no power in the mind to call up ideas indifferently. If we would recollect something which at the moment escapes us, the best way of succeeding confessedly is to permit the mind to work unconsciously; and while the consciousness is otherwise occupied, the forgotten name or circumstance will oftentimes flash into the memory. In composition the writer's consciousness is engaged chiefly with his pen, and the sentences which he is forming, while the results of the mind's unconscious working flow, as it were, from unknown depths into consciousness, and are by its help embodied in appropriate words.

Not only is the actual process of the association of our ideas independent of consciousness, but that assimilation or blending of similar ideas, or of the like in different ideas, by which general ideas are formed, is in no way under the control or cognisance of consciousness. When the like in two perceptions is appropriated, while that in which they differ is neglected, it would seem to be by an assimilative action of the nerve-cell or cells of the brain which, particularly modified by the first impression, have an attraction or affinity for a like subsequent impression: the cell so modified and so ministering takes to itself that which is suitable and which it can

assimilate, or make of the same *kind* with itself, while it rejects for appropriation by other cells that which is unlike and which will not blend. Now this organic process takes place, like the organic action of other elements of the body, quite out of the reach of consciousness; we are not aware how our general and abstract ideas are formed; the due material is consciously supplied, and there is an unconscious elaboration of the result. Mental development thus represents a sort of nutrition and organisation; or, as Milton aptly says of the opinions of good men, that they are truth in the making, so we may truly say of the formation of our general and complex ideas, that it is mind in the making. When the individual brain is a well constituted one, and has been duly cultivated, the results of its latent activity, starting into consciousness suddenly, sometimes appear like intuitions; they are strange and startling, like the products of a dream oftentimes are, to the mind which has actually produced them. Hence it was no extravagant fancy in Plato that he looked upon them as *reminiscences* of a previous higher existence. Plato's mind was a mind of the highest order, and the results of its unconscious activity as they flashed into consciousness might well seem intuitions of a better life quite beyond the reach of present will.

But the process of unconscious mental elaboration is sufficiently illustrated in daily experience. In dreams some can compose vigorously and fluently, or speak most eloquently, who can do nothing of the sort when awake; schoolboys know how much a night's rest improves their knowledge of a lesson which they have been learning before going to bed; great writers or great artists, as is well known, have been truly astonished at their own creations, and cannot conceive how they contrived to produce them; and to the unconscious action of the mind is owing most probably that occasional sudden consciousness, which almost every one at some time has, of having been before in exactly the same circumstances as those which are then happening, though the thing was impossible; but the action of the mind in the assimilation of events here anticipates consciousness, which, when aroused, finds a familiarity in them. Inventions seem, even to the discoverers, to be matters of accident and good fortune; the most voracious plagiarist is commonly the most unconscious; the best thoughts of an author are always the unwilling thoughts which surprise himself; and the poet in the inspiration of creative activity is, as far as consciousness is concerned, being dictated to. If we reflect, we shall see that it must be so; the products of creative activity, in so far as they transcend the hitherto experienced, are unknown to the creator himself before they come forth, and cannot therefore be the result of a definite act of his will; for to an act of will a conception of the result is necessary. "The character," says Jean Paul, speaking of the poet's

work, "must appear living before you, and you must hear it, not merely see it; it must, as takes place in dreams, dictate to you, not you to it; and so much so that in the quiet hour before you might perhaps be able to foretell the *what* but not the *how*. A poet who must reflect whether in a given case he shall make a character say yes or no—to the devil with him: he is only a stupid corpse."

If an inherited excellence of brain has conferred upon the individual great inborn capacity, it is well; but if he has not such heritage, then no amount of conscious effort will completely make up for the defect. As in the germ of the higher animal there is the potentiality of many kinds of tissue, while in the germ of the lower animal there is only a potentiality of a few elements of tissue; so in the good brain of a happily endowed man there is the potentiality of great assimilation, and great and varied development, while in the man of low mental endowment there is only the potentiality of a scanty assimilation and small development. But it is ridiculous to suppose that the man of genius is ever a self-generating fountain of energy; whosoever expends much in productive activity must take much in by appropriation; whence comes what of truth there is in the observation that genius is a genius for industry. To believe that any one, how great soever his natural genius, can pour forth with spontaneous ease the results of great productive activity, without corresponding labour in appropriation, is no less absurd than it would be to believe that the acorn can grow into the mighty monarch of the forest without air and light, and without the kindly influence of the soil.

It has been previously said that mental action does not necessarily imply consciousness, and again, that mental existence does not necessarily involve mental activity: it may now be affirmed that the most important part of mental action, the essential process on which thinking depends, is unconscious mental activity. We repeat, then, the question: how can self-consciousness suffice to furnish the facts of a true mental science?

6. The brain not only receives impressions unconsciously, registers impressions without the co-operation of consciousness, elaborates material unconsciously, calls latent residua again into activity without consciousness, but it responds also as an organ of organic life to the internal stimuli which it receives unconsciously from other organs of the body. As the central organ to which the various organic stimuli of a complex whole pass, and where they are duly co-ordinated, it must needs have most important and intimate sympathies with the other parts of the harmonious system; and a regular quiet activity of which we only become occasionally conscious in its abnormal results does prevail, as the consequence and expression of these organic sympathies. On the whole, this activity is even of more consequence in determining the character of our

feeling, or the tone of our disposition, than that which follows impressions received from the external world; when disturbed in a painful way, it becomes the occasion of that feeling of gloom or discomfort which does not itself give rise to anything more than an indefinite anticipation of coming affliction, but which renders ideas that arise obscure, unfaithfully representative, and painful. The rapidity and success of conception, and the reaction of one conception upon another, are much affected by the state of this active but unconscious cerebral life: the poet is compelled to wait for the moment of inspiration; and the thinker, after great but fruitless pains, must often tarry until a more favorable disposition of mind. In insanity, the influence of this activity is most marked; for it then happens that the morbid state of some internal organ becomes the basis of a painful but formless feeling of profound depression, which ultimately condenses into some definite delusion. In dreams, its influence is no less manifest; for he who has gone to sleep with a disturbance of some internal organ may find the character of his dreams determined by the feeling of the repression of self of which the organic trouble is the cause; he is thwarted, he is afflicted, he is at school again, or under sentence of death; in some way or other his personality is oppressed. Most plainly of all, however does the influence of the sexual organs upon the mind witness to this operation; and it was no wild flight of 'that noted liar fancy' in Schlegel, but a truly grounded creation of the imagination, that he represented a pregnant woman as being visited every night by a beautiful child, which gently raised her eyelids and looked silently at her, but which disappeared for ever after delivery. Whatever then may be thought of the theory of Bichat, who located the passions in the organs of organic life, it must be admitted that he therein evinced a just recognition of the importance of that unconscious cerebral activity which is the expression of the organic sympathies of the brain.

In dealing with unconscious mental activity, and with mind in a statical condition, it has been a necessity to speak of brain and cerebral action where I would willingly, to avoid offence that might be taken thereat, have spoken, had it been possible, of mind and mental action; but it was impossible, if one was to be truthful and intelligible, to do otherwise. When the important influence on mental life of the brain as an organ of organic life comes to be considered, there are no words available for expressing the phenomena in the language of the received psychology, which, though it admits the brain to be the organ of the mind, takes no notice whatever of it as an organ. Let us briefly add, then, what the relations of the brain as a bodily organ are.

1. The brain has, as previously set forth, a life of relation; which may be properly distinguished into—(a) a relation with external

nature through the inlets of the senses ; and (b) a relation with the other organs of the body, through the nervous system distributed throughout the body. These have already been sufficiently dwelt upon here ; they will receive fuller attention afterwards.

2. But the brain has also a life of nutrition, or, if we might so call it, a vegetative life. In this its true organic life there is a nutritive assimilation of suitable material from the blood by the nerve-cell, and a restoration thereby of the statical equilibrium after each display of energy. The extent of the nutritive repair and the mould which it takes must plainly be determined by the extent and form of the waste which has been the condition of the display of function : the material change or waste in the nervous cell, which the activity of an idea implies, is replaced from the blood according to the mould or pattern of the particular idea ; statical idea thus following through the agency of nutritive attraction upon the waste through functional repulsion of active idea. This organic process of repair is not usually attended with consciousness, and yet it may obtrude itself into consciousness : as the function of any organ, which proceeds when all is well without exciting any sensation, does, under conditions of disorder, give rise to unusual sensation or to actual pain ; so the organic life of the brain, which usually passes peaceably without exciting consciousness, may under certain conditions thrust itself forward into consciousness and produce anomalous effects. When this happens, the abnormal effect is not manifest in sensation, for the hemispheres of the brain, as physiologists well know, are not sensitive in that sense ; but it is displayed in the involuntary appearance of emotional ideas in consciousness, and consequent confusion of thought ; the statical idea becomes energy, not through the usual train of association, but by reason of the abnormal stimulus from the inner life. Thus it is that the presence of alcohol, or some other such foreign agent, in the blood will excite into activity ideas which lie out of the usual path of association, which the utmost tension of consciousness would fail to arouse, and which the will cannot repress nor control. Whosoever will be at the pains of attending to his own daily experience will find that ideas frequently arise into consciousness without any apparent relation to those previously active, without, in fact, any possibility of explaining, *quoad* consciousness, why and whence they come.

To what has been before said of unconscious mental action this more may now be added—that the deep basis of all mental action lies in the organic life of the brain, the characteristic of which in health is, that it proceeds without consciousness. He whose brain makes him conscious that he has a brain is not well, but ill ; and thought that is conscious of itself is not natural and healthy thought. How little competent, then, is consciousness to supply the facts of an inductive science of mind ! Pneumatology was at one time sub-

divided into theology, demonology, and psychology ; all three resting on the evidence of the inner witness. Demonology has taken its place in the history of human error and superstition ; theology is confessedly now best supported by those who ascend from nature's law up to nature's God ; and psychology, generally forsaken, stays its fall by appropriating the discoveries of physiology, preserving only in its nomenclature the shadow of its ancient authority and state. On what foundation can a science of mind surely rest save on the faithful observation of all available instances, whether psychical or physiological ?

Such are the charges against self-consciousness whereon is founded the conclusion as to its incompetency : they show that he who attempts to illuminate the whole range of mental action by the light of his own consciousness is not unlike one who should go about to illuminate the universe with a rushlight. A reflection on the true nature of consciousness will surely tend to confirm that opinion. Whosoever faithfully and firmly endeavours to obtain a definite idea of what is meant by consciousness, will find it nowise so easy a matter as the frequent and ready use of the word might imply. Metaphysicians, faithful to the vagueness of their ideas, and definite only in unfounded assumption, are by no means agreed in the meaning which they attach to it ; and it sometimes happens that the same metaphysician uses the word in two or three different senses in different parts of his book : it is at one time synonymous with mind, at another time with knowledge, and at another time it is used to express a condition of mental activity. That there should be such little certainty about that upon which their philosophy fundamentally rests must be allowed to be a misfortune to the metaphysicians.

What consciousness is will appear better if its relations be closely examined without prejudice. It will then appear that it is not separable from knowledge ; that it exists only as a part of the concrete mental act ; that it has no more power of withdrawing from the particular phenomena and taking full and fair observation of it, than a boy has of jumping over his own shadow. Consciousness is not a faculty or substance, but a quality or attribute of the concrete mental act ; and it may exist in different degrees of intensity or it may be absent altogether. In so far as there is consciousness, there is certainly mental activity ; but it is not true that in so far as there is mental activity there is consciousness ; it is only with a certain intensity of representation or conception that consciousness appears. What else, then, is the so-called interrogation of consciousness but a self-revelation of the particular mental act, whose character it must needs share ? Consciousness can never be a valid and unprejudiced witness ; for although it testifies to the existence of a particular subjective modification, yet when that modification has anything of a

morbid character, consciousness is infected by the taint and is morbid also. Accordingly, the lunatic appeals to the evidence of his own consciousness for the truth of his hallucination or delusion, and insists that he has as sure evidence of its reality as he has of the argument of any one who may try to convince him of his error; and he is right: to a man who has vertigo the world turns round. A man may easily be conscious of freewill when, isolating the particular mental act, he cuts himself off from the consideration of the causes which have preceded it, and on which it depends. "There is no force," says Leibnitz, "in the reason alleged by Descartes, to prove the independence of our free actions by a pretended lively internal sentiment. It is as if the needle should take pleasure in turning to the north; for it would suppose that it turned independently of any other cause, not perceiving the insensible motions of the magnetic matter." Is it not supremely ridiculous that while we cannot trust consciousness in so simple a matter as whether we are hot or cold, we should be content to rely entirely on its evidence in the complex phenomena of our highest mental activity? The truth is, that what has very often happened before has happened here; the quality or attribute of consciousness has been abstracted from the concrete, and the abstraction then converted into an entity; the attribute has miraculously got rid of its substance, and with a wonderful assurance assumed the office of judging upon its nature. Descartes was in this case the clever architect; and his success has fully justified his art: while the metaphysical stage of human development lasts, his work will doubtless endure.

That the subjective method, the method of interrogating self-consciousness, is not adequate to the construction of a true mental science, has now seemingly been sufficiently established. This is not to say that it is worthless; for when not strained beyond its capabilities, its results may, in the hands of competent men, be very useful. D'Alembert compares Locke to Newton, and makes it a special praise to him that he was content to descend within, and after having contemplated himself for a long while, he presented in his 'Essay' the mirror in which he had seen himself; "in a word, he reduced psychology to that which it should be, the experimental physics of the mind." But it was not because of this method, but in spite of it, that Locke was greatly successful; it was because he possessed a powerful and well-balanced mind, the direct utterances of which he sincerely expressed, that the results which he obtained, in whatever nomenclature they may be clothed, are and ever will be valuable; they are the self-revelations of an excellently constituted and well-trained mind. The insufficiency of the method used is proved by the fact that others adopting it, but wanting his sound sense, directly contradicted him at the time, and do so still. Furthermore, Locke did not confine himself to the interrogation of

his own consciousness; for he introduced the practice—for which Cousin was so angry with him—of referring to savages and children. And we may take leave to suggest that the most valuable part of Locke's psychology, that which has been an enduring addition to knowledge, really was the result of the employment of the inductive or rather objective method. Nay more: if any one will be at the pains to examine into the history of the development of psychology up to its present stage, he may be surprised to find how much the important acquisitions of new truth and the corrections of old errors have been due, not to the interrogation of self-consciousness, but to external observation, though it was not recognised as a systematic method. The past history of psychology—its instinctive progress, so to speak—no less than the consideration of its present state, proves the necessity of admitting the objective method.

That which a just reflection incontestably teaches, the present state of physiology practically illustrates. Though very imperfect as a science, physiology is still sufficiently advanced to prove that no psychology can endure except it be based upon its investigations. Let it not, moreover, be forgotten, as it is so apt to be, that the divisions in our knowledge are artificial; that they should be accepted, and used rather, as Bacon says, "for lines to mark or distinguish, than sections to divide and separate; in order that solution of continuity in sciences may always be avoided." Not the smallest atom that floats in the sunbeam, nor the minutest molecule that vibrates within the microcosm of an organic cell, but is bound as a part of the mysterious whole in an inextricable harmony with the laws by which planets move in their appointed orbits, or the laws which govern the marvellous creations of godlike genius. Above all things it is now necessary that the absolute and unholy barrier set up between psychical and physical nature be broken down, and that a just conception of mind be formed founded on a faithful recognition of all those phenomena of nature which lead by imperceptible gradations up to this its highest evolution. Happily the beneficial change is being gradually effected, and ignorant prejudice or offended self-love in vain opposes a progress in knowledge which reflects the course of progress in nature: the stars in their courses fight for such truth, and its angry adversary might as well hope to blow out with his pernicious breath the all inspiring-light of the sun as to extinguish its ever waxing splendour.

No one pretends that physiology can for many years to come furnish the complete data of a positive mental science: all that it can at present do is to overthrow the data of a false psychology. It is easy, no doubt, for any one to point to the completeness of our ignorance, and to maintain that physiology never will securely fix the foundations of a mental science, just as it was easy to say, before the invention of the telescope, that the ways of the planets could

never be traced and calculated. The confident dogmatist in this matter might well learn caution from the following example of the rash error of a greater man than himself: "It is the absurdity of these opinions," said Bacon, "that has driven men to the diurnal motion of the earth; *which, I am convinced, is most false.*" What should fairly and honestly be weighed is, that mind is the last, the highest, the consummate evolution of nature's development, and that, therefore, it must be the last, the most complex, and most difficult object of human study. There are really no grounds for expecting a positive science of mind at present; for to its establishment the completion of the other sciences is necessary; and, as is well known, it is only lately that the metaphysical spirit has been got rid of in astronomy, physics, and chemistry, and that these sciences, after more than two thousand years of idle and shifting fancies, have attained to certain principles. Still more recently has physiology emerged from the fog, and that for obvious reasons: in the first place it is absolutely dependent upon the physical and chemical sciences, and must, therefore, wait for the progress of them; and in the second place, its close relations to psychology have tended to keep it the victim of the metaphysical spirit. That, therefore, which should be in this matter is that which is; and instead of being a cause of despair, is a ground of hope.

But let it not be forgotten that the physiological method is only one (I.) division of the objective method; there are other divisions not less valuable:—

II. The study of the *plan of development* of mind, as exhibited in the animal, the barbarian, and the infant, furnishes results of the greatest value, and is as essential to a true mental science as the study of its development confessedly is to a full knowledge of the bodily organism. By that means we get at the deep and true relations of phenomena, and are enabled to correct the erroneous inferences of a superficial observation; by examination of the barbarian, for example, we eliminate the hypocrisy which is the result of the social condition, and which is apt to mislead us in the civilised individual.

III. The study of the *degeneration* of mind, as exhibited in the different forms of idiocy and insanity, is indispensable, as it is invaluable. So we avail ourselves of the experiments provided by nature, and bring our generalisations to a most searching test. Hitherto the phenomena of insanity have been most grievously misinterpreted by the vulgar, because interpreted by the false conclusions of a subjective psychology. Had not the revelations of consciousness in dreams and in delirium been completely ignored by pretended empirical psychologists, truer generalisations must perforce ere this have been formed, and fewer irresponsible lunatics would have been executed as responsible criminals. Why those

who put so much faith in the subjective method do reject such a large and important collection of instances as dreams and madmen furnish, they have never thought proper to explain.

IV. The study of the progress or regress of the human mind, as exhibited in *history*, most difficult as the task is, cannot be neglected by one who wishes to be thoroughly equipped for the arduous work of constructing a positive mental science. The unhappy tendencies which lead to individual error and degeneration are those which on a national scale conduct peoples to destruction ; and the *nisus* of an epoch is summed up in the biography of its great man. Freed from the many disturbing conditions which interfere so much with his observation of the individual, the philosopher may perhaps in history discover the laws of human progress in their generality and simplicity, as Newton discovered in the motions of the heavenly bodies the law which he would in vain have looked for had he watched the fall of every apple in Europe.

May we not then truly say that he only is the true psychologist who, occupied with the observation of the whole of human nature, avails himself not only of every means which science affords for the investigation of the bodily conditions which assuredly underlie every display of function, conscious or unconscious, but also of every help which is furnished by the mental manifestations of animal and of man, whether undeveloped, degenerate, or cultivated ? Here, as everywhere else in nature, man must deliberately apply himself to a close communion with the external, must intend his mind to the realities which surround him, and thus by patient internal adjustment to outward relations gradually evolve into conscious development those inner truths which are the unavoidable expressions of the harmony between himself and nature. Of old it was the fashion to try to explain nature from a very incomplete knowledge of man ; but it is the certain tendency of advancing science to explain man on the basis of a perfecting knowledge of nature.

Having fairly admitted a method, it behoves us to take heed that we are not too exclusive in its application. To this there is a strong inclination : even in the investigation of physical nature men now frequently write of induction as Bacon himself never wrote of it. It might seem from the usual fashion of speech that the function of the mind was merely that of a polished and passive mirror, in which natural phenomena should be allowed simply to reflect themselves ; whereas every state of consciousness is a developmental result of the relation between mind and the impression, of the subject and object. What Bacon strove so earnestly to abolish was that method of systematically looking into the mind and, by torture of self-consciousness, drawing thence empty ideas, as the spider forms a web out of its own substance, that ill-starred divorce between mind and nature which had been cultivated by the schoolmen as a method. What he

wished, on the other hand, to establish was a happy marriage between mind and matter, between subject and object, to prevent the "mind being withdrawn from things longer than was necessary to bring into a harmonious conjunction the ideas and the impressions made upon the senses."* For, as he says, the testimony and information of the senses has reference always to man, not to the universe; and it is a great error, therefore, to assert that the sense is the measure of things. But by his method of effecting, as completely as possible, a reconciliation between the subjective and objective, he hoped to have "established for ever a true and lawful marriage between the empirical and the rational faculty, the unkind and ill-starred divorce and separation of which has thrown into confusion all the affairs of the human family." The mind that is in harmony with the laws of nature, in an intimate sympathy with the

* "*Nos vero intellectum longius à rebus non abstrahimus quam ut rerum imagines et radii (ut in sensu fit) coire possint.*" ('Proleg. Instaurat. Magn.') This passage, as usually rendered, is not intelligible; the translation in the text, if not literally exact, evidently, as the context proves, expresses Bacon's true meaning. He had objected to all before him that some had wrongly regarded the sense as the measure of things, while others, equally wrongly, "after having only a little while turned their eyes upon things, and instances, and experience, then straightway, as if invention were nothing more than a certain process of excogitation, have fallen, as it were, to invoke their own spirits to utter oracles to them. But we," he goes on, "modestly and perseveringly keeping ourselves conversant among things, never withdraw our understanding, &c." Mr. Spedding, in his admirable edition of Bacon's works, translates the passage thus:—"I, on the contrary, withdraw my intellect from them no further than may suffice to let the images and rays of natural objects meet in a point, as they do in the sense of vision." According to this interpretation,—if there really is any meaning in it—the images and rays of objects express the same thing. Mr. Wood's translation, in Mr. Montagu's edition, is:—"We abstract our understanding no further from them than is necessary to prevent the confusion of the images of things with their radiation, a confusion similar to that we experience by our senses." This is worse still; *ut possint coire* means, certainly, that they may come together, not that they may not mingle or may be prevented from mingling. After all, the 95th aphorism furnishes the clearest and surest commentary on the passage—"Those who have treated the sciences were either empirics or rationalists. The empirics, like ants, only lay up stores and use them; the rationalists, like spiders, spin webs out of themselves; but the bee takes a middle course, gathering her matter from the flowers of the field and garden, and digesting and preparing it by her native powers. In like manner, that is the true office and work of philosophy which, not trusting too much to the faculties of the mind, does not lay up the matter, afforded by natural history and mechanical experience, entire or unfashioned in the memory, but treasures it after being first elaborated and digested in the understanding. And, therefore, we have a good ground of hope, from the close and strict union of the experimental and rational faculty, which have not hitherto been united." In the very place where the obscure passage occurs, he says, after speaking of the inauspicious divorce usually made between mind and nature—"The explanation of which things, and of the true relation between the nature of things and the nature of the mind, is as the strewing and decoration of the bridal chamber of the Mind and Universe, the Divine Goodness assisting; out of which marriage let us hope (and this be the prayer of the bridal song) there may spring helps to man, and a line and race of inventions that may in some degree subdue and overcome the necessities and miseries of humanity." Coleridge and Emerson have not failed to apprehend the true method of Bacon's philosophy.

course of events, is strong with the strength of nature, and is developed by its force.

A contemplation of the earliest stages of human development, as exhibited by the savages, certainly constrains the admission that the conscious or deliberate co-operation of the mind in the adaptation of man to external nature was not great. The fact is, however, in exact conformity with what has already been asserted with regard to the nature and domain of consciousness; assuredly it is not consciousness, the natural result of a due development, which gives the impulse to development; *this* coming from a source that is past finding out—from the primeval central Power which hurled the planets on their courses, and holds the lasting orbs of heaven in their just poise and movement. In virtue of the fundamental impulse of its being mankind struggles, at first blindly, towards a knowledge of and adaptation to external nature, until that which has been insensibly acquired through generations becomes an inborn addition to the power of the mind, and that which was unconsciously done becomes conscious method.

It were well, then, that this idea took deep and firm root in our thoughts: that the development of mind, both in the individual and through generations, is a gradual process of organisation—a process in which nature is undergoing her latest and most consummate development. In reality we do not fail virtually to recognise this in the case of language, whose organic growth, as we scientifically trace it, is the result of the unseen organisation of thought that lies beneath, and alone gives it meaning. His own consciousness, faithfully interpreted, might suffice to reveal to each one the gradual maturing, or becoming, through which a process of thought continually goes in his mind. So has it been with mankind: at first there was an instinctive or pure organic development, the human race struggling on, as the child does, without being conscious of its *ego*; then, as it got to a certain stage of development, it becomes, as the youth does, exceedingly self-conscious, and an extravagant and unhealthy metaphysical subjectivity was the expression of an undue self-feeling; and finally, as the happily developing individual passes from an undue subjectivity to a calm objective method of viewing things, so Bacon may be said to mark the epoch of a corresponding happy change in the development of mankind. Let us entirely get rid, however, of the notion that the objective study of nature means merely the sensory perception of it; we see, not with the eye, but through it; and to any one who is above the level of the animal the sun is not a bright disc of fire about the size of a cheese, but an immense orb moving through space with its attendant planetary system, at the rate of some 400,000 miles a day. Now, such is the wondrous harmony, connection, and continuity pervading that mysterious whole which we call nature, that it is impossible to

get a just and clear idea of one pure circle of her works without that idea becoming most useful in flashing a light into obscure and unknown regions, and in thus aiding the conscious establishment of a further harmony of adaptation between man and nature. The brilliant insight or intuition of the man of genius, who so often anticipates the slow result of systematic investigation, witnesses with singular force to that truth. Far wiser than many of his commentators have been, Bacon accordingly failed not clearly to appreciate the exceeding value of idea in the interpretation of nature.

But if the due co-operation of the mind is necessary, if the harmony of subjective and objective was Bacon's real method, in the prosecution of physical science, how much more useful must the just union of the empirical and rational faculty be in the study of mental science; the task then being to apply the ideas of the mind to the interpretation of the mind's processes of activity. It must assuredly be allowed that the light of one's own train of thought is often most serviceable in interpreting the mind of another; so much so, indeed, that one may know what is passing therein with not less certainty, sometimes even with greater certainty, than when it is actually uttered. In order to be successful in this sort of intuition, however, not only good natural insight, but a large experience of life and men, is most necessary, else the most grievous mistakes may be made; here, as elsewhere, power is acquired by intending the mind to external realities, by submitting the understanding to things. Plainly, too, this objective application of our ideas is a very different matter from the deliberate direction of consciousness to its own states, that introspective analysis of the processes of thought whereby, as before said, the natural train of ideas being interrupted and the tension of a particular activity maintained, an artificial state of mind is produced, and a tortured self-consciousness, like as an individual put to the torture, makes confessions that are utterly unreliable. The genuine utterances of his inner life, or the sincere and direct revelations of the man of great natural ability and good training, are the highest truths—what Plato has written is of eternal interest; but the contradictory anatomical revelations of internal analysis by the professed psychologists are the vainest word jugglings with which a tenacious perseverance has vexed a long-suffering world. They should justly be opposed, as by Bacon; or shunned, as by Shakespeare; or abhorred, as by Goethe:—"Ich habe nie an Denken gedacht." As in the child there is no consciousness of the *ego*, so in the highest development of humanity, as represented by these our greatest, there seems to have been reached a similar unconsciousness of the *ego*; and the individual in intimate and congenial sympathy with nature carries forward its organic evolution with a childlike unconsciousness and a childlike success.

Before concluding this chapter it is necessary distinctly to affirm

a truth which is an unwelcome one, because it flatters not the self-love of mankind; and it is this, that there is all the difference in the world between the gifted man of genius, who can often anticipate the slow results of systematic investigation, and who strikes out new paths, and the common herd of mortals, who must plod on with patient humility in the old tracks, "with manifold motions making little speed:" it is the difference between the butterfly which flies and feeds on honey and the caterpillar which crawls and gorges on leaves. Men, ever eager to "pare the mountain to the plain," will not willingly confess this; nevertheless it is most true.* Rules and systems are necessary for the ordinarily endowed mortals, whose business it is to gather together and arrange the materials; the genius, who is the architect, has, like nature, an unconscious system of his own. It is the fate of its nature, and no demerit, that the caterpillar must crawl: it is the fate of its nature, and no merit, that the butterfly must fly. The question, so much disputed, of the relative extent of applicability of the so-called inductive and deductive methods, often resolves itself into a question as to what manner of man it is who is to use them—whether one who has senses only, who has eyes and sees not, or one who has senses and a soul; whether one who can only collect so-called facts of observation, or one who can bind together the thousand scattered facts by the organizing idea, and thus guarantee them to be facts. What an offence to the chartered imbecility of industrious mediocrity that Plato, Shakespeare, Goethe, Humboldt, Bacon too, and, in truth, every man who had anything of inspiration in him, were not mere sense-machines for registering observations, but rather instruments on which the melody of nature, like sphere-music, was made for the benefit and delectation of such as have ears to hear!† That some

* Lorsque des faits extraordinaires attestent un génie éminent, quoi de plus contraire au bon sens que de lui prêter toutes les passions et tous les sentimens de la médiocrité? Quoi de plus faux que de ne pas reconnaître la prééminence de ces êtres privilégiés qui apparaissent de temps à autre dans l'histoire comme de phases lumineux, dissipant les ténèbres de leur époque et éclairant l'avenir? Nier cette prééminence serait d'ailleurs faire injure à l'humanité, en la croyant capable de subir, à la longue et volontairement, une domination qui ne reposerait pas sur une grandeur véritable et sur une incontestable utilité. Soyons logique, et nous serons justes."—Preface to the 'Histoire de Jules César,' by the Emperor of the French.

† "Talent," says Jean Paul, "represents to us only portions of nature; the genius represents the whole of nature and brings to us a world-intuition." "Every natural body feels everything that happens in the universe. . . . The present is pregnant with the future; the future may be read in the past; the remote is expressed in the near. The beauty of the universe might be apprehended by every mind if all its potentialities could be unfolded, which, however, are only observably developed with time. But as every clear idea comprehends an infinite number of confused ideas which contain undeveloped in them the whole universe, so the mind itself apprehends those things of which it has ideas only so far as it has ideas which stand out clearly and distinctly; and it acquires perfection according to the measure of its clear ideas. Every mind recognises the infinite, recognises the All, although in a confused manner. When I walk on the

so virulently declaim against theory is as though the eunuch should declaim against lechery: it is the chastity of impotence.

So rarely, however, does nature produce one of these men gifted with that high and subtle quality called genius—being scarce, indeed, equal to the production of one in a century—and so self-sufficing are they when they do appear, that we, gratefully accepting them as visits of angels, or much as Plato accepted his super-celestial ideas, need not vainly concern ourselves about their manner of working. It is not by such anxious troubling that one will come; it is not by introspective prying into and torture of its own self-consciousness that mankind evolves the genius; the mature result of its unconscious development flows at due time into consciousness with a grateful surprise, and from time to time the slumbering centuries are thus awakened. It is by the patient and diligent work at systematic adaptation to the external by the rank and file of mankind; it is by the conscientious labour of each one, after the inductive method, in that little sphere of nature, whether psychical or physical, which in the necessary division of labour has fallen to his lot—that a condition of evolution is reached at which the genius starts forth. Tiresome, then, as the minute man of observation may sometimes seem as he exults over his scattered facts as if they were final, and magnifies his molecules into mountains as if they were eternal, it is well that he should thus enthusiastically esteem his work; and no one but will give a patient attention as he reflects how indispensable the humblest unit is in the social organism, and how excellent a spur vanity is to industry. Not unamusing, though somewhat saddening, is it, however, to witness the painful surprise of the man of observation, his jealous indignation and clamorous outcry, when the result at which he and his fellow-labourers have been so patiently, though blindly, working—when the genius-product of the century which he has helped to create, starts into life—when the metamorphosis is completed: amusing, because the patient worker is supremely astonished at a result which, though preparing, he nowise foresaw; saddening, because individually he is annihilated, and all his toil for which he spent is swallowed up in the product which, gathering up the different lines of investigation and thought, and giving to them a unity of development, now by epigenesis ensues. We perceive, then, how it is that a great genius cannot come save at long intervals, as the tree cannot blossom but at its due season.

But why should any one, great or little, fret and fume because he is likely soon to be forgotten? The genius himself, as individual, is

sea-shore, and listen to its mighty roar, I hear the single sounds of every wave of which the roar is composed, but without distinguishing them. Just in like manner are our confused ideas the result of the impressions which the whole universe makes upon us.”—*Leibnitz*.

after all of but little account ; it is only as the birth of the travailing centuries that he exists, only so far as he is a true birth of them and adequately representative, that he is of value : the more individual he is the more transitory will be his fame. When he is immortal he has become a mere name marking an epoch, and no longer an individual. Whosoever, in a foolish conceit of originality, neglects the scattered and perhaps obscure labours of others who have preceded him, or who are contemporaneous with him ; whosoever, over-careful of his individual fame, cannot carry forward his own evolution with a serene indifference to neglect or censure, but makes puerile demands on the approbation of the world—may rest content that he is not a complete birth of the age, but more or less an abortive monstrosity : the more extreme he is as a monstrosity the more original must he needs be.

Viewing mental development, whether in the individual or in the race, as a process of organization, as the consummate display of nature's organic evolution, and recognising, as we must do, the most favorable conditions of such evolution to be the most intimate harmony between man and nature, we may rightly conclude, as far as concerns the rule of a conscious method of inquiry, with the ancient and well-grounded maxim—" Learn to know thyself in nature, that so thou mayest know nature in thyself."

