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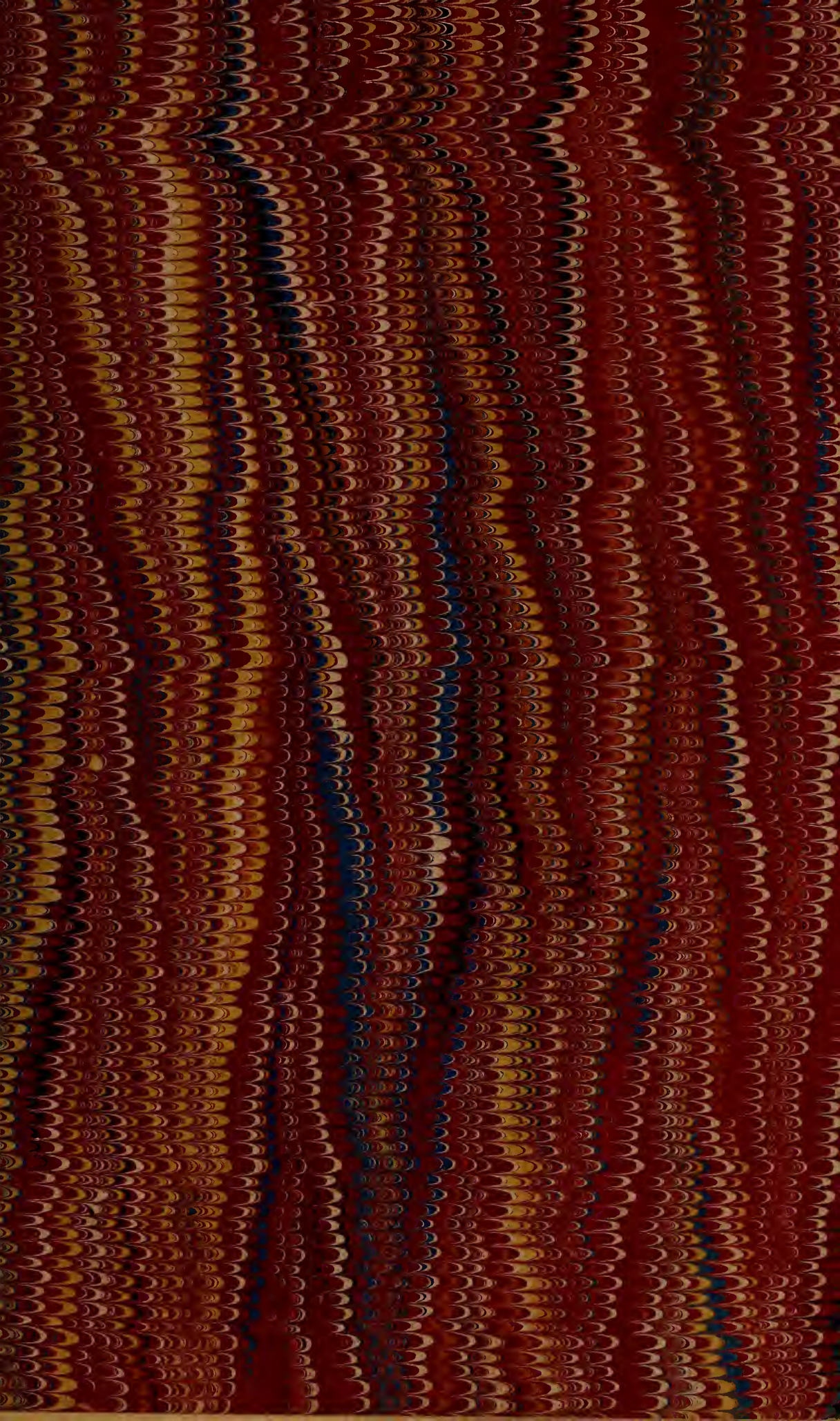
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SIR WILLIAM HAMILTON

AND

HIS PHILOSOPHY.

FROM THE

PRINCETON REVIEW, OCTOBER 1855.

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Samuel Taylor

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FROM THE
PRINCETON REVIEW,

OCTOBER, 1855.

The Works of Thomas Reid, D. D. Preface, Notes, and Supplementary Dissertations. By Sir William Hamilton, Bart. Edinburgh: 1846.

Discussions on Philosophy and Literature, Education and University Reform. By Sir William Hamilton, Bart. Second Edition, enlarged. London: 1853.

THOUGH of Lord Bacon it was said, by his friend Dr. Harvey, the discoverer of the circulation of the blood, "he writes philosophy like a Lord Chancellor," it must be admitted, Sir William Hamilton writes it like a philosopher. For he both thinks and writes, more like a pure intelligence, than any man in the history of speculation. In the first place, his diction is the most concise, the most accurate, the most direct, the most compact, and the most vigorous ever used by any writer on philosophy. Familiar with all systems of philosophy ever proposed, and their criticisms expository, supplementary and adverse, and a master of the languages, in which both the philosophies and the criticisms have been written; he has discovered how much of their errors can be ascribed to the deficiencies of language, both as an instrument and as a vehicle of philosophical thought; and he has, accordingly, formed a language for

himself, adequate to the exigencies of the highest thinking, in the new career of philosophy which he has inaugurated. And his learning, in every department of knowledge supplementary of philosophy, or auxiliary to it, is so abundant, that there seems to be not even a random thought of any value, which has been dropped along any, even obscure, path of mental activity, in any age or country, that his diligence has not recovered, his sagacity appreciated, and his judgment husbanded in the stores of his knowledge. And, in discussing any question of philosophy, his ample learning enables him to classify all the different theories which have, at successive periods, been invented to explain it; and generally, indeed we may say always, he discovers, by the light reciprocally shed from the theories, ideas involved in them which their respective advocates had not discriminated; thereby giving greater accuracy to the theories than they had before. By this mode of discussion, we have the history of doctrines concentrated into a focus of elucidation. And the uses of words, and the mutations in their meaning, in different languages, are articulately set forth; thereby enhancing the accuracy and certainty of our footsteps on the slippery paths of speculation. And his own genius for original research is such, that no subtlety of our intelligent nature, however evasive, no relation however indirect or remote, no manifestation however ambiguous or obscure, can escape or elude his critical diagnosis. Add to all this; his moral constitution, both by nature and by education, is harmonious with his intellectual, imparting to his faculties the energy of a well-directed will, and the wisdom of a pure love of truth. Therefore it is, that in the writings of Sir William Hamilton there is nothing of that vacillation in doctrine which results from unbalanced faculties. He has built upon the same foundation from the beginning. Another notable characteristic is his extraordinary individuality. He seems, in no degree, under the influence of what is called the doctrine of the historical development of human intelligence. He confronts the whole history of doctrines, and with a cold critical eye, surveys them as the products of individual minds, and not as the evolutions of a total humanity. Of eclecticism, there is in his creed, not the smallest taint. Truth seems to him the same everywhere,

unmodified by times. Such is the marvellous man, of whose philosophy we propose to give some account.

The history of philosophy seems, to the superficial observer, but the recurrence of successive cycles of the same problems, the same discussions, and the same opinions. He sees, in modern philosophy, only the repetition of the dreams of the earliest Greek speculators. Philosophy is to him but labour upon an insoluble problem. To the competent critic, however, it presents a far different view. He sees, in each cycle, new aspects of the problems, new relations in the discussions, and new modes in the opinions—all indicating an advancement, however unequal and halting at times, towards the truth. Here then is, at once, evinced the supreme importance of an enlightened philosophical criticism. It is the preparative and precursor of further progress. The different doctrines which, in successive ages, have been elicited, are so many experiments, furnishing, to the enlightened critic, indications more or less obvious of the true solutions of the problems of philosophy.

Sir William Hamilton is the prince of critics in philosophy. In him philosophical criticism has compassed its widest scope, and reached its highest attainments. He is the critic of all ages, equally at home in all. He has sifted all of ancient, all of mediæval, and all of modern thought, with the most delicate sieve ever used by any critic; and while he has winnowed away the chaff, he has lost not a grain of truth. The barriers of different languages have not excluded him from a single field: he unlocked the gates of one as easily as another, and entered where he list. With principles of criticism as broad as nature, with learning as extensive as the whole of what has been written on philosophy, with a knowledge of words, and of the things which they denote or are intended to denote, marvellously accurate and co-extensive with the whole literature of speculation, with a logic both in its pure theory and modified applications, adequate to every need of intelligence, whether in detecting the fallacies or expounding the truths of doctrine, and with a genius exactly suited to use, with the greatest effect, these manifold accomplishments, he stands pre-eminent amongst the critics of philosophy. As we have seen how he unravels the network of entangled discussions, discriminating

the confusions by purifying the doctrines through a more adequate conception and expression of them, often correcting the text of the Greek writer, which for centuries had baffled the grammarians, by the light of the doctrine of the author, and in the sequel making the truth educed the starting-point for new development of doctrine, we have admired the matchless abilities of the critic, until we should have been exhausted in being dragged along the labyrinths of his mighty ratiocination, had we not been refreshed at every turn by the new light of truth disclosed by the master who was conducting the marvellous enterprise of thought. Bentley did not do more to enlarge the scope, and enrich the learning of British literary criticism, when, by his dissertations on the Epistles of Phalaris, he raised it from the platitudes of the grammarian and the rhetorician to the compass, the life, the interest, and the dignity of philological and historical disquisition, than Sir William Hamilton has done to give profundity, subtlety, comprehensiveness, and erudition to British philosophical criticism, by his contributions to the *Edinburgh Review*. These articles mark an era, not only in British but in European criticism in every department of philosophy—metaphysics, psychology, and logic. They were translated into the languages of the continent, and their stupendous learning, matchless subtlety, and ruthless ratiocination, received everywhere unbounded admiration. The very first article, the one on the doctrine of the infinito-absolute of Cousin, utterly subverted the fundamentals of the proud speculations of Germany, and fully exposed the absurdity of the attempt of Cousin to conciliate them with the humble Scottish philosophy of common sense. The continental philosophers saw that a critic had arisen, who, by the might and the majesty of his intellect, and the vastness of his erudition, gave dignity to the humble doctrine which he advocated, and they had all along despised. They began to feel,

“ A chiel’s amang us, takin notes,
And faith, he’ll prent it.”

But Sir William Hamilton, the critic, is only the precursor of Sir William Hamilton the philosopher. His criticism is but the preparative of his philosophy. They, however, move on

together. The state of the philosophy of the world made this necessary. The calling of Socrates was not more determined by the condition of thought in his time, than the labours of Sir William Hamilton are by the philosophical needs of this age. His erudition and critical skill are as much needed as his matchless genius for original speculation. Either, without the other, would have been comparatively barren of results. And his preference, like Aristotle, for logic rather than the other branches of philosophy, is the very affection that is desiderated in the great thinker of this age. It seems to be supposed by some, who even pretend to have studied the philosophy of Sir William Hamilton, that he has merely rehabilitated the doctrines of Reid and Stewart. It might, with much more show of truth be said, that Newton only reproduced the discoveries of Copernicus and Kepler. For the philosophy of Sir William Hamilton is a greater stride beyond that of his Scottish predecessors, than the discoveries and deductions of Newton are beyond those of Copernicus and Kepler. Let us then, as far as his published writings and our limits will permit, show what Sir William has done directly to advance philosophy.

With Bacon began a movement in modern philosophy, which parallels that begun by Aristotle in ancient.* Aristotle inaugurated the deductive process; Bacon inaugurated the inductive. These are the distinctive features of those systems of philosophy which they advocated; and they are in accordance with the spirit of philosophizing in the respective eras to which they belonged. Ancient philosophy was more a deduction from principles; modern philosophy is more an inquiry into principles themselves. Aristotle and Bacon both make logic the paramount branch of philosophy; and the forms of the understanding the limits of the knowable. Sir William Hamilton's philo-

* When we say that Bacon and Aristotle began these respective movements, we do not mean literally, that the movements originated with them, but only that, like Luther's in the Reformation, their labours were so signal and paramount, in these movements, as to be associated pre-eminently with them. No great change ever originates with the person who becomes the most conspicuous in it, in the great spectacle of history. It always has antecedents, produced by the agency of inferior persons. We, therefore, beg, that everywhere, in this article, the principle of this note may qualify our general remarks, even in regard to the claims of originality, which we prefer for Sir William Hamilton, unless our remarks preclude qualification.

sophy is a preparative and an initial towards the conciliation of the systems of Aristotle and Bacon. Logic, with him as with them, is the paramount branch of philosophy; and his labours all tend to reconcile induction with deduction, and unify in one method these two great processes of thought. His philosophy is, in fact, a climacteric reclamation, vindication, and development of the one perennial philosophy of common sense, which, like the one true faith, is preserved amidst all schismatic aberrations, and vindicated as the only true philosophy.

It is in the essential unity of human reason returning again and again, from temporary aberrations in different ages, into the same discernments and convictions, that we have the means of verifying the true catholic philosophy. Though there may be nothing in the mutual relations of men, at any given time, nor in the mutual relations of successive generations, that necessarily determines an uninterrupted advance towards truth, yet, notwithstanding the occasional wide-spread and long protracted prevalence of error, the reason of man has hitherto vindicated itself in the long run, and proved that, though the newest phase of thought may not, at all times, be the truest, yet the truest will prevail at last, and come out at the goal of human destiny, triumphant over all errors. This is the drift of the history of human opinion as interpreted by enlightened criticism. Sometimes skepticism, recognizing no criterion of truth; sometimes idealism, knowing nothing but images in ceaseless change; sometimes pantheism, dissolving all individuality, both material and spiritual, in the tides of universal being; sometimes materialism, believing nothing beyond material nature, and that man is only a more perfect species of mammalia, and human affairs but the highest branch of natural history; and other forms of error, each with its peculiar momenta and criteria of knowledge, have in reiterated succession, in different ages of the world, prevailed as systems of philosophy; yet the reason of man has, nevertheless, under the guidance of some master mind, returned to the one perennial philosophy of common sense, and reposed in the natural conviction of mankind, that an external world exists as the senses testify, and that there is in man an element which lifts him above the

kingdom of nature, and allies him in responsible personal individuality with a divine, eternal, and personal God.

The great office of the critic of philosophy, at this day, is to trace the footsteps of this perennial philosophy through the history of human opinion in all its manifold mutations, perversions, and aberrations; and to note its features, observe the paths it walks in, and its method and criteria of truth. This Sir William Hamilton has done. He has shown that the doctrine of common sense, as the basis of all philosophy, has prevailed for more than two thousand years. He has adduced one hundred and six witnesses, Greek, Roman, Arabian, Italian, Spanish, French, British, German, and Belgian, to its truth. Amongst the many Greek witnesses, Aristotle is found, amongst the Roman, Cicero, amongst the Italians, Aquinas, amongst the French, all the great philosophers from Des Cartes to Cousin, both inclusive; amongst the Germans, Leibnitz, Kant, Jacobi, and even Fichte, with a host of others; thus showing, that what is sometimes thought, even by those from whom we might expect better things, to be the superficial foundation of British philosophy, is in truth the only foundation on which the reason of man can repose. Philosophers, amidst all their efforts to break away from the common beliefs of mankind, have at last been compelled to come back to them as the only ultimate criterion of truth. "Fichte (says Sir W. Hamilton,) is a more remarkable, because a more reluctant confessor to the paramount authority of belief than even Kant. Departing from the principle common to him, and philosophers in general, that the mind cannot transcend itself, Fichte developed, with the most admirable rigour of demonstration, a scheme of idealism the purest, simplest, and most consistent which the history of philosophy exhibits. And so confident was Fichte in the necessity of his proofs, that on one occasion he was provoked to imprecate eternal damnation on his head, should he ever swerve from any, even the least of the doctrines which he had so victoriously established. But even Fichte, in the end, confesses that natural belief is paramount to every logical proof, and that his own idealism he could not believe."

With the great fact before us, so triumphantly reclaimed and vindicated by Sir William Hamilton, that philosophers

have never been able to find any other criterion of truth than the common sense of mankind, we will now proceed to show what is its doctrine.

The philosophy of common sense is the doctrine, in its development and applications, that our primary beliefs are the ultimate criterion of truth. It postulates, that consequents cannot, by an infinite regress, be evolved out of antecedents: but that demonstration must ultimately rest upon propositions, which in the view of certain primary beliefs of the mind, necessitate their own admission. These primary beliefs, as primary, must of course be inexplicable, being the highest light in the temple of mind, and borrowing no radiance from any higher cognition by which their own light can be illuminated. Behind these primary beliefs the mind cannot see—all is negation; because, while these primary beliefs are the first energy of the mind, they are also its limitation. The primary facts of intelligence would not be original, were they revealed to us under any other form than that of necessary belief.

As elements of our mental constitution, as essential conditions of intelligence itself, these primary beliefs *must*, at least in the first instance, be accepted as true. Else, we assume that the very root of our intelligence is a lie. All must admit some original bases of knowledge in the mind itself, and must *assume* that they are true.

The argument from common sense is therefore simply to show, that to deny a given proposition would involve a denial of a primary belief, an original datum of consciousness; and as the primary belief or original datum of consciousness must be received as veracious, the proposition necessitated by it must be received as true also.

It is manifest, that in arguing on the basis of our primary beliefs, they cannot be shown to be mendacious, unless it be demonstrated that they contradict each other, either immediately in themselves or mediately in their consequences. Because, there being no higher criterion by which to test their veracity, it can only be tested by agreement or contradiction between themselves.

We will now apply this doctrine, and in discussing the application, we will explicate the doctrine more fully. In the act

of sensible perception we are, equally and at the same time, and in the same indivisible act of consciousness, cognizant of ourself as a perceiving subject, and of an external reality as the object perceived, which are apprehended as a synthesis inseparable in the cognition, but contrasted to each other in the concept as two distinct existences. All this is incontestably the deliverance of consciousness in the act of sensible perception. This all philosophers, without exception, admit as a *fact*. But then, all, until Reid, deny the *truth* of the deliverance. They maintain that we only perceive representations within ourselves, and by a perpetual illusion we mistake these representations for the external realities. And Reid did not fully extricate himself from the trammels of this opinion. For while he repudiated the notion, that we perceive representations distinct from the mind though within the mind, he fell into the error, that we are only conscious of certain changes in ourselves which suggest the external reality. But Sir William Hamilton has, by the most masterly subtlety of analysis, incontestably shown, that we are directly conscious of the external objects themselves, according to the belief universal in the common sense of mankind.

It is manifest, that the whole question resolves itself into one of the veracity of consciousness. All admit that consciousness does testify to the *fact* that we perceive the external reality. To doubt this is to doubt the actuality of the fact of consciousness, and consequently to doubt the doubt itself, which is a contradiction, and subverts itself. The data then of consciousness, simply as *facts*, or *actual manifestations and deliverances*, cannot be denied without involving a contradiction; and therefore, the principle of contradiction, which we have shown is the only one to be applied to the solution of the question, recoils upon the skeptic himself, and makes doubt impossible. But then, the facts or deliverances of consciousness considered as *testimonies to the truth of facts beyond their own phenomenal reality*, are not altogether to be excluded from the domain of legitimate philosophical discussion. For this proposition by no means, like the other, involves a self-contradiction; and thereby repels even the possibility of doubt. Therefore philosophers, while they admit the fact of the testimony of con-

consciousness deny its *truth*. The dispute is not as to *what* is said, but as to the *truth* of what is said.

As then, it has been admitted, that the *fact* is an affirmation of our intelligent nature, its mendacity cannot be consistently assumed; for upon the principle of *falsus in uno, falsus in omnibus*, it would impeach the *fact* itself as an affirmation of nature, which we have shown involves a contradiction, and is therefore impossible. It is clear then, that the burden of proof, in impeaching the absolute veracity of consciousness, lies upon those denying it. And as we have shown, that the attempt to prove its mendacity has in all ages failed, and that all the most schismatic and skeptical have at last found repose for the struggling intellect only in the testimony of our primary beliefs, we are compelled by analysis, and by history, to acknowledge the doctrine of common sense the one catholic and perennial philosophy.

Here the question obtrudes itself into our view, *What is the logical significance of our primary beliefs?* and it is a question of paramount importance. Perhaps, in the answer to this question, we may differ from Sir William Hamilton; and, therefore, it is, that we wish to signalize it.

It is implied in the doctrine of primary beliefs, that, at the root of every primordial act of the mind, there is a principle or law guaranteeing the procedure. For example, the initial act, from which induction starts, is guaranteed by such a principle or law of intelligence—the *principle of philosophical presumption*. Now, in order to distinguish these principles or laws from the universal truths which are generalized from individual truths of fact, they are called universal truths of intelligence. Now, we prefer to call these principles, *laws* of intelligence as more expressive of their real character, rather than *truths* of intelligence; because, in the operations of the mind, they are regulative and not cogitable, being in fact the poles on which thought turns. They are, in our thinking, silent in laws, rather than articulate in propositions.

We think that this is a discrimination that ought not to be slighted; and we venture to find fault that Sir William Hamilton uses the expressions, “fundamental facts,” “beliefs,” “primary propositions,” “cognitions at first hand,” as deno-

ting the same primary data of consciousness only from different points of view. We are not convinced of the propriety of his opinion implied in such various designations; and are constrained to believe, that the confusing the distinction, which we have endeavoured to indicate, is the initial, the root of that cardinal heresy in philosophy which makes all cognition encentric—makes thought start out from a general notion native to the mind. We repudiate the doctrine that there ever is a belief or a cognition of the mind without its corresponding object. The deliverance of the primary and most incomprehensible belief is, *That its object is*. Thought never evades the fundamental antithesis of subject and object, which is the primary law of consciousness itself. In no instance is a notion, not even that of cause, time, or space, native to the mind, acquired from no adequate object, but purely subjective and regulative, imposing upon objective thought an illusive interpolation of itself.

We therefore, repeat, that our primary beliefs are not *within* consciousness as comprehended thought, but *in* consciousness as bases of thought. We cannot therefore assent, that, in different points of view, they may or may not be regarded as cognitions or propositions. We think they have not the equivocal character, which the ambiguous and various designations applied to them, by Sir William Hamilton, seem to us to indicate. They are but modes of one unifying consciousness, not rising, in degree of intellection, to cognitions.

But to call them, “primary propositions,” is what we chiefly object to. There are primary propositions, undoubtedly, which in the view of our primary beliefs, necessitate their own admission: but then, they are not to be confounded with the primary beliefs themselves. They are made up of a plurality of primary beliefs unified in a common conviction in consciousness, and articulated in language. The point of our objection is, to every form and semblance of the doctrine, *that all knowing is through previous knowledge*, (which will be considered in the sequel,) instead of merely through *the power of knowing*.

But to return from this digression: And while Sir William Hamilton thus points out the bases and the elements of truth, he exhibits the canons by which philosophical research is to be

conducted. As Bacon, in the first book of the *Novum Organum*, exposed the sources of error in physical inquiry, and laid down precautionary rules for conducting future investigation, so Sir William Hamilton has enounced maxims for conducting the loftier and far more difficult research into our intellectual nature. And his philosophy is, in this particular, the consummation of that of Bacon. It explores the depths of consciousness, and educes those primary beliefs and fundamental laws of intelligence which Bacon merely assumed in his philosophy. Sir William Hamilton has lighted his torch at the lamps of both induction and deduction, and it burns with their combined light; and therefore it is, that he has been able to penetrate depths in the abysses of thought, which to Bacon and Aristotle were unfathomable darkness. How, in the spirit of Bacon, is the following admonition! "No philosopher has ever formally denied the truth, or disclaimed the authority of consciousness; but few or none have been content implicitly to accept, and consistently to follow out its dictates. Instead of humbly resorting to consciousness to draw from thence his doctrines and their proof, each dogmatic speculator looked only into consciousness, there to discover his preadopted opinions. In philosophy men have abused the code of natural, as in theology, the code of positive revelation; and the epigraph of a great Protestant divine on the book of Scripture is certainly not less applicable to the book of consciousness:

Hic liber est in quo quærit sua dogmata quisque;
Invenit et pariter dogmata quisque sua."

And Hamilton, like Bacon, is not at all dismayed by the past failures in philosophy; but with the proud hopes of a great mind, conscious of the power of truth, he anticipates mighty triumphs in future for that philosophy which he has shown to have prevailed for more than two thousand years. "And yet, (says he) although the past history of philosophy has, in a great measure, been only a history of variation and error; yet the cause of the variation being known, we obtain a valid ground of hope for the destiny of philosophy in future. Because, since philosophy has hitherto been inconsistent with

itself, only in being inconsistent with the dictates of our natural beliefs—

‘For Truth is catholic and Nature one;’—

it follows, that philosophy has simply to return to natural consciousness, to return to unity and truth.

“In doing this, we have only to attend to three maxims or precautions :

“1. That we admit nothing, not either an original datum of consciousness, or the legitimate consequence of such datum ;

“2. That we embrace all the original data of consciousness, and all their legitimate consequences ; and

“3. That we exhibit each of these in its individual integrity, neither disturbed nor mutilated, and in its relative place, whether of pre-eminence or subordination.”

But Sir William does not stop his directions for investigation with these maxims. He gives marks, by which we can distinguish our original from our derivative convictions—by which we can determine what is, and what is not, a primary datum of consciousness. These marks or characters are four ;—1st, *their incomprehensibility*—2d, *their simplicity*—3d, *their necessity and absolute universality*—4th, *their comparative evidence and certainty*. These characters are explicated by him, and rendered entirely capable of application to the purpose of analyzing thought into its elements.

But, besides these positive directions for ascertaining truth, Sir William Hamilton exposes the very roots of the false systems of philosophy which have prevailed in different times. As he shows, by the most searching analysis, that the philosophy of common sense has its root in the recognition of the absolute veracity of consciousness in sensible perception ; so he shows, that all philosophical aberrations, or false systems of philosophy, have their respective roots either in a full or partial denial of its veracity. And he does not deal merely in generalities ; but he articulately sets forth five great variations from truth and nature, which have prevailed as systems of philosophy, and shows the exact degree of rejection of the veracity of consciousness which constitutes the root of each. We are thereby enabled to see the roots of these great heresies laid

bare, and can extirpate them, by the argument from common sense.

Such are the rules which Sir William Hamilton lays down for conducting inquiry in the province of mind. They are a development of the method of Bacon in its application to psychology, the highest branch of phenomenal philosophy.

We now approach a new development of the philosophy of common sense, called the philosophy of the conditioned. It constitutes the distinguishing feature of the philosophical system of Sir William Hamilton; and was developed by him to satisfy the needs of intelligence in combating the proud and vainglorious philosophy of Germany. It is a remarkable monument of the largeness, the profundity, and the penetrating acuteness of his intellect.

The philosophy of common sense assumes, that consciousness is the supreme faculty—in fact, that it is the complement of all the faculties—that what are called faculties are but acts of consciousness running into each other, and are not separated by those lines of demarcation which are imposed upon them by language for the needs of thinking about our intelligent nature. The supremacy of consciousness was the doctrine of Aristotle, of Des Cartes, and of Locke. Reid and Stewart reduced consciousness, in their system, to a special faculty only co-ordinate with the others. This heresy Sir William Hamilton, amongst his innumerable rectifications and developments of Reid's philosophy, has exposed, and by a singular felicity of analysis and explication, has restored consciousness to its rightful sovereignty over the empire of intelligence.

Having postulated that consciousness is the highest, and fundamental faculty of the human mind, it becomes necessary, in order to determine the nature of human knowledge, to determine the nature of consciousness.

Now, consciousness is only possible under the antithesis of the thinking mental self, and an object thought about, in correlation and limiting each other. It is, therefore, manifest, that knowledge, in its most fundamental and thoroughgoing analysis, is discriminated into two elements in contrast of each other. These elements are appropriately designated, the *subject* and the *object*, the first applying to the conscious mind

knowing, and the last, to that which is known. And all that pertains to the first is called *subjective*, and all that pertains to the last is called *objective*.

Philosophy is the science of knowledge. Therefore, philosophy must especially regard the grand and fundamental discrimination of the two primary elements of the *subjective* and *objective*, in any theory of knowledge it may propound.

Now, the first and fundamental problem, which presents itself in the science of knowledge is, *What can we know?* Upon the principles of the philosophy of common sense, the solution of the problem is found, by showing what are the conditions of our knowledge. These conditions, according to the thoroughgoing fundamental analysis of our knowledge just evinced, arise out of the nature of both of the two elements of our knowledge, the *subjective* and the *objective*.

Aristotle, who did so much towards analyzing human thought into its elements, strove also to classify all objects real under their ultimate identifications or categories in relation to thought. In modern times, Kant endeavoured to analyze intelligence into its ultimate elements in relation to its objects, and to show in these elements the basis of all thinking, and the guarantee of all certainty. Aristotle's categories, though extremely incomplete, and indeed, we may say bungling, as they confound derivative with simple notions, did something for correct thinking in pointing out, with more exactness, the relations of objects real to thought. But Kant, making a false division of intelligence itself into reason and understanding, blundered at the threshold, and while he analyzed reason into its supposed peculiar elements, to which he gave the Platonic name of Ideas, he analyzed understanding into its supposed peculiar elements, and gave them the Aristotelic name of Categories. Kant's analysis of our intelligence into its pure forms, made the human mind a fabric of mere delusion. The ideas of reason he proposed as purely subjective and regulative, and yet delusively positing themselves objectively in thought. And so too, in like manner, are his categories of understanding expounded as deceptive. His philosophy is thus rendered, at bottom, a system of absolute skepticism.

It is seen, from this account of them, that Aristotle's Cate-

gories or Predicaments, are exclusively objective, of things understood; and that those of Kant are exclusively subjective, of the mind understanding. Each is therefore one-sided.

Sir William Hamilton, discriminating more accurately than his predecessors, the dual nature of thought, has distinguished its two fundamental elements, the subjective and the objective, by a thoroughgoing analysis, and at the same time has observed that these elements are ever held together in a synthesis which constitutes thought in its totality. He has therefore endeavoured to accomplish, in one analysis of thought, what Aristotle and Kant failed to do by their several but partial analyses. As thought is constituted of both a subjective and an objective element, the conditions of the thinkable or of thinking must be the conditions of both knowledge and existence—of the possibility of knowing, both from the nature of thought, and from the nature of existence; and must therefore embrace intelligence in relation to its objects, and objects in relation to intelligence, and thus supersede the one-sided predicaments of Aristotle and Kant.

The first step towards discriminating the fundamental conditions of thought, is to reduce thought itself to its ultimate simplicity. This Sir William Hamilton has done, by showing that it must be either positive or negative, when viewed subjectively, and either conditioned or unconditioned when viewed objectively. And he has discriminated, and signalized the peculiar nature of negative thought, by showing that it is conversant about the unconditioned, while positive thought is conversant about the conditioned. This is a salient point in Sir William's philosophy. He shows that the Kantean Ideas of pure reason, are nothing but negations or impotences of the mind, and are swallowed up in the unconditioned; and that the Kantean Categories of the understanding are but subordinate forms of the conditioned. And while he thus reduces the Predicaments of Kant to ultimate elements, he annihilates his division of our intelligence into reason and understanding. He shows that what Kant calls the reason is in fact an impotence, and what he calls the understanding is the whole intellect.

It had been shown by Aristotle, that negation involves affir-

mation—that non-existence can only be predicated by referring to existence. This discrimination has become a fruitful principle in the philosophy of Sir William Hamilton. He, therefore, begins the announcement of the conditions of the thinkable, by showing the nature of negative thought. He shows that negative thought is realized only under the condition of relativity and positive thinking. For example: we try to think—to predicate existence, and find ourselves unable. We then predicate incogitability. This incogitability is what is meant by negation or negative thought.

If then negative thinking be the opposite of positive thinking, it must be the violation of one or more of the conditions of positive thinking. The conditions of positive thinking are two; 1st. The condition of *non-contradiction*: 2d. The condition of *relativity*. To think at all, (that is positively, for positive thinking is properly the only thinking,) our thinking must not involve a contradiction, and it must involve relativity. If it involve contradiction, the impossible both in thought and in reality results. If the condition of relativity be not purified, the impossible in thought only results.

Now the condition of non-contradiction is brought to bear in thinking under three phases constituting three laws:—1st. The law of *identity*; 2d. The law of *contradiction*; 3d. The law of *excluded middle*. The science of these laws is Logic. Thus, is shown the ultimate condition of the thinkable on which depends the science of explicative or analytical reasoning. This we shall show fully in the sequel, when we come to treat of what Sir William Hamilton has done for Logic.

The condition of non-contradiction is in no danger of being violated in thinking; therefore its explication is only of theoretical importance.

The condition of relativity is the important one in thought. This condition, in so far as it is *necessary*, is brought to bear under two principal relations; one of which arises from the subjective element of thought, the mind thinking (called the *Relation of Knowledge*;) the other arises from the objective element of thought, the thing thought about, (called the *Relation of Existence*.)

The relation of *Knowledge* arises from the reciprocal relation

of the subject and the object of thought. Whatever comes into consciousness is thought, by us, as belonging to the mental self exclusively, or as belonging to the not-self exclusively, or as belonging partly to both.

The relation of *Existence* arising from the object of thought is two-fold: this relation being sometimes intrinsic, and sometimes extrinsic; according as it is determined by the qualitative or quantitative character of existence. Existence conceived as substance and quality, presents the intrinsic relation, called *qualitative*; substance and quality are only thought as mutual *relatives* inseparable in conception. We cannot think either separate from the other.

All that has thus far been said applies to both mind and matter.

The extrinsic relation of *Existence* is three-fold; and as constituted by three species of quantity, it may be called *quantitative*. It is realized in or by the three quantities, time, space, and degree, called respectively, protensive, extensive and intensive quantity. The notions of time and space are the necessary conditions of all positive thought. Positive thought cannot be realized except in time and space. Degree is not, like time and space, an absolute condition of thought. Existence is not necessarily thought under degree. It applies only to quality and not to quantity; and only to quality, in a restricted sense which Sir William Hamilton has explicated in his doctrine of the qualities of bodies, dividing them into primary, secundo-primary, and secondary.

Of these conditions and their relations in their proper subordinations and co-ordinations Sir William has presented a table, which he calls the Alphabet of Thought.

Out of the condition of relativity springs the science of metaphysics, just as we have indicated that logic springs out of the condition of non-contradiction. Thus the respective roots of the two great cognate branches of philosophy are traced to their psychological bases in the alphabet of thought.

We will now exhibit the metaphysical doctrine, which Sir William Hamilton educes from the analysis of thought which we have endeavoured to present. And here he elevates the philosophy of common sense into the philosophy of the condi-

tioned, borrowing this appellation from this different point of view from which philosophy is considered. The former appellation is derived from a psychological point of view, the latter from a metaphysical—the former from a subjective, the latter from an objective.

It is sufficiently apparent that the condition of relativity limits our knowledge. This is the fundamental fact which it is proposed to establish. It is proposed to show that of the absolute we have no knowledge, but only of the relative. This is the whole scope of the philosophy of the conditioned.

With a view of showing the argument from the philosophy of the conditioned, let us turn, for a moment, to the philosophy of the absolute, the unconditioned, which is the reverse doctrine, and of the refutation of which the conditions of the thinkable are adduced as a basis.

From the dawn of philosophy in the school of Elea, the absolute, the infinite, the unconditioned has been the highest principle of speculation. The great master amongst ancient philosophers, Aristotle, in accordance with the general drift of his philosophy, denied that the Infinite was even an object of thought, much less of knowledge. And that profound, and subtle, but perverse and paradoxical genius, Kant, who, towards the close of the eighteenth century, made the first serious attempt ever made, to investigate the nature and origin of the notion of the Infinite, maintained that the notion is merely regulative of our thoughts; and declared the Infinite to be utterly beyond the sphere of our knowledge. But out of the philosophy of Kant, from a hidden germ, grew a more extravagant theory of the absolute than any which had before perplexed and astounded the practical reason of man. It was maintained by Fichte and Schelling—who fell back on the ancient notion, that experience, because conversant only about the phenomenal and transitory, is unworthy of the name of philosophy as incapable of being a valid basis of certainty and knowledge—that man has a faculty of *intellectual intuition* which rises above the sphere of consciousness, as well as of sense, and enthroning the reason of man on the seat of Omniscience, with which it in fact becomes identified, surveys existence in its all-comprehensive unity and its all-pervading relations, and unveils to us the nature of God,

and, by an ontological evolution, explains the derivation of all things, from the greatest to the very least.

This philosophy captivated the brilliant and sympathetic genius of M. Cousin, of France, who strove to conciliate and harmonize it with the Scottish philosophy of experience as promulgated by Reid, with which M. Cousin had been imbued. He denied the *intellectual intuition* of the German philosophers, and claimed that the Infinite was given as a datum in consciousness along with its correlative the Finite; that these two notions, being necessarily thought as mutual relatives, must therefore be both equally objectively true. These two notions and their relations to each other are, at once, the elements and the laws of the reason of both man and God, and that all this is realized in and through consciousness. This theory M. Cousin proclaimed as a powerful eclecticism, which conciliated not only what had been before considered counter and hostile in the reflections of individual philosophers, but also, in the different systems of philosophy preserved in the history of the science. Thus, the history of philosophy, with its various systems, was shown to be but the growth of one regularly developed philosophy, gradually culminating towards that one consummate knowledge completed in the all-comprehending eclecticism inaugurated, in the central nation of Europe, by M. Cousin in a splendour of discourse worthy of the grand doctrine which makes the proud rationalism of Germany acknowledge its doctrinal affiliation with the humble Scottish philosophy of observation. When this doctrine reached Scotland, Sir William Hamilton, at once, entered the great olympic of philosophical discussion, and stood forth, as the champion of the humble doctrine of common sense, against the host of continental thinkers.

And now, for the first time in the history of philosophy, the doctrine of the Absolute, the Infinite, the Unconditioned, was made definite. It was shown, by Sir William Hamilton, that so far from the Absolute and the Infinite meaning the same thing or notion, they were contradictory opposites; the Absolute meaning the unconditional affirmation of limitation, while the Infinite means the unconditional negation of limitation—the one thus an affirmative, the other a negative. And he

further showed, that both were but species of the unconditioned. The question being thus purified from the inaccuracy of language and the confusion of thought; and it being shown that the unconditioned must present itself to the human mind in a plural form; it was seen that the inquiry resolves itself into the problem, whether the unconditioned, as either the Absolute or the Infinite can be realized to the mind of man. Sir William Hamilton shows that it cannot. He demonstrates that in order to think either alternative, we must think away from those conditions of thought under which thought can alone be realized; and that, therefore, any attempt to think either the Absolute or the Infinite must end in a mere negation of thought. These notions are thus shown to be the results of two counter imbecilities of the mind—the inability to realize the unconditionally limited, and the unconditionally unlimited. The doctrine of M. Cousin is shown to be assumptious, inconsequent, and self-contradictory. His Infinite is shown to be, at best, only an Indefinite, and therefore a relative. And it is shown, by a comprehensive application of the Aristotelic doctrine, that the knowledge of opposites is one, that so far from the fact, of the notions of the Infinite and Finite mutually suggesting each other, furnishing evidence of the objective reality of both, it should create a suspicion of the reverse. The truth is, the searching analysis, to which the doctrine of M. Cousin is subjected, clearly evinces that he did not at all apprehend the state of the question discussed, and in fact was confusing himself in a vicious circle of words.

And the *Intellectual Intuition* of Fichte and Schelling is shown to be a mere chimera; and his Absolute, a mere nothing. As Schelling could never connect his Absolute with the Finite in any doctrinal affiliation, so he was unable to discover any cognitive transition from the Intellectual Intuition to personal consciousness. This hiatus in his theory could not, of course, escape the penetrating sagacity of Sir William Hamilton. It was at once demonstrated as the Intellectual Intuition is out of and above consciousness, and to be realized, the philosopher must cease to be the conscious man Schelling, that if even the Intellectual Intuition were possible, still it could only be remembered, and *ex hypothesi*, it could not be remembered,

for memory is only possible under the conditions of the understanding which exclude the Absolute from knowledge. By this analysis the Absolute is shown to be a mere mirage in the infinite desert of negation, conjured up by a self-delusive imagination, conceiting itself wise above the possibilities of thought. It may also be argued against the Intellectual Intuition, that it is only through the organism of sense, that the mind realizes *form*, the image of an object; for consciousness in and of itself is not an imaging faculty. Now the Intellectual Intuition realizes *image* in the Absolute. It therefore partakes of the character of sensation; and it, in fact, by this analysis stands revealed as a sublimated sense postulated, by reason overleaping itself, in the attempt to clear the circle of the thinkable. The doctrine of the Absolute is thus proved to be a sensational philosophy, disguised under terms of supposed high spiritual import. And thus, it is demonstrated, that to abandon consciousness as the highest faculty, is to necessitate a fall into sensuism, though we imagine, all the while, we are soaring on the wings of reason, above the region of consciousness. Schelling and Condillac are thus found in the darkness of a common error listening to the same oracle. And this analysis is confirmed, by the fact, that Oken, who, next to Hegel, was the most distinguished disciple of Schelling, in his Physio-Philosophy, makes the Absolute *nothing*, zero; and then, by pure reason, evolves, out of it, all physics; thus ascribing to a faculty, above consciousness, the imaging power of the senses. And Oken thus enthrones the physical sciences, as he imagines, on a seat above consciousness, when it is, in fact, the footstool of consciousness, the senses, on which they sit the while.

Thus was trampled down, this proud doctrine which had misled speculation; and philosophy was again brought back from its aberrations into the sober paths of common sense. And never before did so mighty a champion lead it. For whatever else may be thought, in comparing Sir William Hamilton with other philosophers, it must be admitted that as a man of hostilities, a dialectician and a critic, he is altogether matchless.

Having given an all-comprehensive example of the argument from the philosophy of the conditioned, we will now proceed to expound, in outline, the philosophy of the conditioned. The

distinguishing feature of this philosophy, the one which most articulately enounces its character, is the doctrine of a mental *Impotence*. This doctrine we will now expound.

The problem most fruitful of controversy in philosophy is that of the distinction between experiential and non-experiential notions and judgments. Some philosophers contend that there is no such distinction; but that all legitimate notions and judgments are experiential. And those, who have admitted the distinction have quarrelled about the criterion of the distinction. Leibnitz, at last, established the quality of *necessity*, the necessity of so thinking, as the criterion of our non-experiential notions and judgments. Afterwards Kant, in his Critic of Pure Reason, developed and applied this criterion. And it may now be considered as the acknowledged test of our unacquired cognitions amongst those who admit that there are non-experiential notions and judgments. Now, it is in relation to this fundamental distinction, that Sir William Hamilton has developed the philosophy of the conditioned. He admits that we have non-experiential notions and judgments, (we prefer to call the two classes of notions and judgments, *primary* and *secondary*, as we think both classes, from a certain point of view, can appropriately be considered as experiential in a restricted sense,) and he concurs with Leibnitz and Kant, that *necessity* is their distinctive quality. But then, he maintains, that the doctrine, as developed by all previous philosophers, is one-sided, when it should be two-sided. And the side of the doctrine, which philosophers have overlooked, is the important one. The doctrine, as heretofore enounced and recognized, is that the necessity is a positive one, *so to think*, and is determined by a mental power. But Sir William Hamilton considers, and very justly, that this is only half of the truth, and the least important half; because this necessity is never illusive, never constrains to error; while the necessity which he indicates is naturally illusive. His doctrine is, that this necessity is both positive and negative: "The one, the necessity of so thinking (the impossibility of *not so thinking*,) determined by a mental power, the other the necessity of *not so thinking* (the impossibility of *so thinking*,) determined by a mental impotence." This negative necessity, which has been overlooked by philosophers,

plays an important part on the theatre of thinking. It is to the development of its function in our mental economy, that the philosophy of the conditioned is directed. As philosophy stood, the very highest law of intelligence, which asserts that of two contradictories, both cannot, but one must, be true, led continually to the most pervasive and fundamental errors. Because when one alternative was found incogitable, the mind immediately recoiled to the conclusion that the other contradictory must be true. When, for example, in examining the doctrine of the will, it was discovered that the freedom of the will was incomprehensible, could not be speculatively construed to the mind, the inquirer immediately recoiled to the alternative, of the necessity of human actions; and so on the other hand, when the necessity of the will was found incogitable, the inquirer fell back upon the alternative of liberty. So that philosophers, like Milton's fallen angels, had

“ reason'd high
Of Providence, foreknowledge, will, and fate,
Fixt fate, freewill, foreknowledge absolute,
And found no end, in wandering mazes lost.”

Thus the negative necessity, of *not so thinking*, which was not ever even suspected to exist, had been a source of constant errors utterly incapable of solution. But Sir William Hamilton has discovered, that we may be negatively unable to think one contradictory, and yet find ourselves equally impotent to conceive the opposite. To this fundamental psychological fact he has applied the highest law of intelligence, *that of two contradictories, one must of necessity be true*; and that therefore, there is no ground for inferring a fact to be impossible, merely from our inability to conceive its possibility. And thus is disclosed the hidden rock on which speculation, in its highest problems, had foundered.

The philosophy of the conditioned is the development and application of this Negative Necessity in combination with the Positive. In order to give precision to the doctrine of the conditioned, the conditions of the thinkable are evoked and systematized under the two fundamental categories of positive and negative thinking. And these categories are themselves subdivided in order to bring out their import in generic

instances of their application in practical thought. These conditions of the thinkable we have exhibited; but it now becomes necessary to recur to them, for the needs of the discussion and exposition on which we now enter.

The most important and comprehensive question in metaphysics is, *The origin and nature of the causal judgment*. No less than seven theories had been propounded on the problem; and now, Sir William Hamilton has propounded an eighth, entirely new. He attempts to resolve the causal judgment into a modification of the law of the conditioned, which is so obtrusive in his view of philosophy. He makes the causal judgment a mere inability to think an absolute beginning:—a mere necessity to deny that the object, which we apprehend as beginning to be, really so begins:—an inability to construe it in thought, as possible, that the complement of existence has been increased or diminished:—a mere necessity to affirm the identity of its present sum of being, with the sum of its past existence. The supposed connection between cause and effect is, in its last analysis, resolved into a mental impotence, the result of the law of the conditioned.

It is manifest, that in this theory, the fact of our inability to conceive the complement of existence, either increased or diminished, is the turning point in the question. That, because we are unable to construe it, in thought, that such increase or diminution is possible, we are constrained to refund the present sum of existence into the previous sum of existence, is given as an explanation of the causal judgment.

Now, it seems to us, that this solution avoids the important element in the phenomenon to be explained. The question in nature, is not whether the present complement of existence had a previous existence—has just begun to be? but, how comes its new appearance? The obtrusive and essential element, is the *new appearance*, the *change*. This is the fact which elicits the causal judgment. To the *change* is necessarily prefixed, by the understanding, a cause or potence. The cause is the correlative to the change, elicited in thought and posited in nature. The question as to the origin of the sum of existence, does in no way intrude into consciousness, and is not involved in the causal judgment. Such a question may, of course, be

raised; and then the theory of Sir William Hamilton is a true account of what would take place in the mind. And this is the question, which, it seems to us, Sir William has presented as the problem of the causal judgment. His statement of the problem is this: "When aware of a *new* appearance, we are *unable* to conceive that therein has originated any new existence, and are therefore constrained to think that what now appears to us under a new form, had previously an existence under others—others conceivable by us or not. We are utterly unable to construe it in thought, as possible that the complement of existence has been increased or diminished."

This seems to us, not a proper statement of the problem of causation. This problem does not require the *complement of existence* to be accounted for; but the *new form* to be accounted for; and a new form must not be confounded with an *entirely new existence*. Causation must be discriminated from creation; in the first, *change* only, in the last, the *complement of existence*, is involved. If we attempt to solve the problem of *creation*, the notion of an absolute beginning is involved; consequently, a negative impotence is experienced, as we cannot think an absolute beginning, and we would fall back on the notion of causation—would stop short at the causal judgment, unable to rise to a higher cognition—the cognition of creation.

The causal judgment consists in the necessity we are under of prefixing in thought a cause to every change, of which we think. Now change implies previous existence; else it is not change. Of what does it imply the previous existence? Of that which is changed, and also of that by which the change is effected. Now change is effect. It is the result of an operation. Operation is cause (potence) realizing itself in effect. It seems to us, by this somewhat tautological analysis, that cause and effect necessarily imply each other, both in nature and in thought. Causality is thought both as a law of things and a law of intelligence. When we attempt to separate effect from cause, in our thought, contradiction emerges. It is realized to consciousness in every act of will, and in every act of positive thinking as both natural and rational. Cause and effect are related to each other, as terms in thought, as well as realities in existence. Causality is primarily natural, secondarily

rily rational. The woof of reasoning, into which its notion is woven, has the two threads of the material and the rational running together, by which existence and thought are harmonized into truth; the objective responding to the subjective. If this were not the law of material thinking, we do not see how there could be any consecutive thinking about nature. The notion of cause always leads thought in material reasoning—always determines the mental conclusion, as the notion of reason does in formal or pure reasoning. The law of cause and effect is, in material thought, what the law of reason and consequent is in formal thought.

It is doubtless true, that the negative impotence to think an absolute beginning necessarily connects in thought present with past existence; and as all change must take place in some existence, the change itself is connected in thought with something antecedent; and, therefore, the mind is necessitated by the negative impotence to predicate something antecedent to the change. But, then, as a mere negative impotence cannot yield an affirmative judgment, it cannot connect present with past existence, in the relation of cause and effect, but only in sum of existence which it is unable to think either increased or diminished. The causal judgment is determined by a mental power elicited into action by an observed change, and justified thereby as an affirmation of a potence evinced in the changed existence; and it matters not whether the change be the result of many concurring causes, or of one; still the notion of potence cannot but be thought as involved in the phenomenon. When we see a tree shivered to atoms by a flash of lightning, it is difficult to be convinced, that the causal judgment elicited by the phenomenon, is merely the impotence to think an absolute beginning.

We are conscious that we are the authors of our own actions; and this is, to be conscious of causation in ourselves. But if we attempt to analyze this fact in consciousness by considering it as made up of two elements related in time, we confuse ourselves by the impotence to conceive any causal nexus between the supposed antecedent and consequent. The fact is, that they are a simultaneous deliverance of consciousness realizing an antithesis in one inseparable act; because cause and effect

are never realized separately, but conjointly. Efficiency is twofold, partly cause, partly effect, and cannot be thought otherwise without contradiction. Cause is thus thought as an indefinite, as not having either an absolute beginning or ending. Absolute beginning is not more necessary to the notion of cause than to that of time. Both are thought as quantities, and though both are thought as indeterminates, like all indeterminates, are capable of a determinate application. And while realized as particular, they are thought as universal.

We are prone to postulate principles more absolutely than they are warranted by nature. Therefore it is, that the subtleties of nature so often drop through the formulas of the logician; and he retains in their stead abstractious not corresponding with existence. Excessive study of formal logic tends to lessen the capacity for appreciating the imports of intuition. The apodictic character of logical relations is so different from that of mere material relations, that a mind, long addicted to the estimation of the former, cannot but contract a fallacious bias somewhat like that of the mere analytical mathematician, but of course to a much less degree. And on the other hand, a metaphysician, who like Locke, is deficient in a knowledge of logic, and unpractised in its precise distinctions and forms, becomes loose, inconsequent, and contradictory in his opinions. We venture to suggest, that the former of these biases is apparent in the application of the law of the conditioned to the causal judgment, by Sir William Hamilton. He postulates it too unqualifiedly.

The doctrine of the conditioned rescues thought from otherwise insoluble contradictions, by carrying up the contradictory phenomena into a common principle of limitation of our faculties. For example: If we attempt to think an absolute beginning, we find it impossible; and on the other hand, if we attempt to think its contradictory opposite, an infinite non-beginning, we find it equally incogitable. If therefore, both be received as positive affirmative deliverances of our intelligence, then our minds testify, by necessity, to lies. But the philosophy of the conditioned emphatically forbids us to confound, as equivalent, non-existence with incogitability; because it does not make the human mind the measure of existence,

but just the reverse. It postulates as its fundamental principle, that the incogitable may and must be necessarily true upon the acknowledged highest principle of intelligence, that of two contradictories one must, but both cannot be true. Thus by carrying up these contradictions into the common principle of a limitation of our faculties, intelligence is shown to be feeble, but not false; and the contradictory phenomena are rescued from contradiction, by showing that one must be true. And by this doctrine, the moral responsibility of man is vindicated from all cavil. Thus while the liberty of the will is inconceivable, so is its contradictory opposite, the necessity of human actions. As then, these two negations are at equipoise, and can neither prove nor disprove anything, the testimony of consciousness, that we are, though we know not how, the real and responsible authors of our actions, gives the affirmance to our accountability. And out of this moral germ springs the root of the argument for the existence of God, which combined with the lately too much disparaged argument from design, constitutes a valid basis for the doctrine of natural Theology. Thus are vindicated, by this new development of the philosophy of common sense, the great truths of our practical reason, as they have been called; and speculation and practice are reconciled. And the doctrine that God is incognizable is demonstrated; and that it is only through the analogy of the human with the divine nature, that we are percipient of the existence of God. Power and knowledge, and virtue cognized in ourselves, and tending to consummation, reveal the notion of God. For unless all analogy be rejected, the mind must *believe* in that first cause, which by the limited nature of our faculties we cannot *know*. In the language of the great Puritan divine, John Owen: "All the rational conceptions of the minds of men are swallowed up and lost, when they would exercise themselves directly on that which is absolutely immense, eternal, infinite. When we say it is so, we know not what we say, but only that it is not otherwise. What we *deny* of God we know in some measure—but what we *affirm* we know not; only we declare what we *believe* and adore."

While therefore, this philosophy confines *our knowledge* to

the conditioned, it leaves *faith* free about the unconditioned; indeed constrains us to believe in it, by the highest law of our intelligence. This fundamental truth of his philosophy Sir William Hamilton has enounced in this comprehensive canon: "Thought is possible only in the conditioned interval between two unconditioned contradictory extremes or poles, each of which is altogether inconceivable, but of which, on the principle of Excluded Middle, the one or the other is necessarily true." As therefore the unconditioned, as we have seen, presents itself to the human mind, under a plural form of contradictory opposites, as either the absolute or the infinite, the problem comes under this canon, and the unconditioned is established as a verity, incognizable but *believable*. Thus, in the very fact of the limitation of our knowledge, is discovered the affirmation, by the highest law of our intelligence, of the transcendent nature of faith: There is no philosophy, which in its spirit, its scope, and its doctrines, both positive and negative, so conciliates and upholds revealed religion, as that which is based on this great canon of Metaphysics. The conditions on which revelation with its complement of doctrines, is offered to our belief, are precisely those which this canon enounces.

Having exhibited an outline of what Sir William Hamilton has done for Metaphysics, we will now proceed to show what he has done for Logic.

In what we have said about the relation, which the philosophy of Sir William Hamilton bears to that of Bacon, we, by no means, intend to affirm, that there is much intellectual sympathy between the two great thinkers. It is quite otherwise. Bacon was preeminently objective, exhausting his great powers chiefly in the field of physics, because, in his time, there lay the needs of truth; while Hamilton, rather turning his back on physics, because of their now extravagant cultivation, is supremely subjective, throwing his vast energies upon inquiries in the province of intellectual philosophy. And though Sir William Hamilton does not directly disparage the labours of Bacon, yet he vaunts those of Des Cartes at their expense, and certainly nowhere does those of Bacon justice. But still the philosophies of Bacon and of Hamilton are concordant developments of the

one philosophy of common sense, and are affiliated in unity of fundamental doctrine. Bacon is the forerunner, in that great intellectual movement, to which Hamilton has communicated such a mighty energy of thought, contributed the light of such vast erudition, and adduced such stringent historical proofs of its perennial existence. It is the inductive branch of Logic with its kindred doctrines, which Sir William Hamilton has brought out into bold relief, from the subordination in which it was held by Aristotle: while, at the same time, he has so developed, and simplified by a completer analysis, the deductive branch, that the Stagirite only retains his superior fame by being the precursor. And it is, by his successful labours upon these two great branches of Logic, that Sir William Hamilton conciliates the philosophies of Aristotle and Bacon; and gives to modern thought a force of reasoning, through the practical application of nicer discriminations of the forms of thought, and more adequate logical expression, which elevates this century to a higher intellectual platform. All this shall sufficiently appear in the sequel.

When in the year 1833, Sir William Hamilton published in the *Edinburgh Review*, his criticism on Whately's *Logic*, there was prevalent in Britain, total ignorance of the higher logical philosophy. The treatise of Whately was the highest logical standard; which, though in ability it is much above mediocrity, in erudition is far below the literature of the subject. The article of Sir William elevated the views of British logicians above the level of Whately, and gave them glimpses of a higher doctrine. But the chief service rendered by this masterly criticism, was the precision with which it defined the nature and the object matter of logic, and discriminated the whole subject doctrinally and historically, in the concentrated light of its literature.

The treatise of Whately presents indistinct, ambiguous and even contradictory views of the proper object matter of logic. Sometimes it makes the process or operation of reasoning, the total matter about which logic is conversant; at other times, it makes logic entirely conversant about language. Now, though it involves a manifest contradiction to say, that logic is exclusively conversant about each of two opposite things, yet Whately

was praised by British logicians for the clearness with which he displayed the true nature and office of logic. In the low state of logical knowledge in Britain, which these facts indicate, it behoved whoever undertook to point out Whately's blunders to enter into the most elementary discussion of logic both name and thing. This Sir William Hamilton did in the article now under consideration.

Aristotle designated logic by no single term. He employed different terms to designate particular parts or applications of logic; as is shown by the names of his several treatises. In fact, Aristotle did not look at logic from any central point of view. And, indeed, his treatises are so overladen with extralogical matter, as to show that the true theoretical view of logic as an independent science had not disclosed itself to its great founder. In fact, it has only been gradually, that the proper view of the science has been speculatively adopted—practically it never has been; and no contribution to the literature of the subject has done so much to discriminate the true domain of logic, as this article of Sir William Hamilton. It marks an era in the science. Mounting up to the father of logic himself, it showed that nineteen twentieths of his logical treatises, treat of matters that transcend logic considered as a formal science. It is shown that the whole doctrine of the modality of syllogisms does not belong to logic; for if any matter, be it demonstrative or probable, be admitted into logic, none can be excluded. And thus, with the consideration of the *real truth or falsehood* of propositions, the whole body of *real* science must come within the domain of logic, obliterating all distinction between *formal* and *real* inference.

The doctrine maintained in this article is, that logic is conversant about the laws of thought considered merely as thought. The import of this doctrine we will now attempt to unfold. The term *thought* is used in several significations of very different extent. It is sometimes used to designate every mental modification of which we are conscious, including will, feeling, desire. It is sometimes used in the more limited sense of every *cognitive* fact, excluding will, feeling, desire. In its most limited meaning, it denotes only the acts of the understanding or faculty of comparison or relation, called also the discursive

or elaborative faculty. It is in this most restricted sense that the word *thought* is used in relation to logic. Logic supposes the materials of thought already in the mind, and only considers the manner of their elaboration. And the operation of the elaborative faculty on these materials is what is meant by *thought proper*. And it is the laws of thought, in this, its restricted sense, about which logic is conversant.

It must be further discriminated, that logic is conversant about thought as a product, and not about the producing operation or process; this belongs to psychology. Logic, therefore, in treating of the laws of thought, treats of them in regard to thought considered as a product. What, then, is thought? In other words, what are the acts of the elaborative faculty? They are three, conception, judgment, reasoning. These are all acts of comparison—gradations of thought. Of these, as producing acts, psychology treats. Logic treats of the products of these, called respectively, a concept, a judgment, a reasoning. The most articulate enunciation, therefore, of the intrinsic nature of logic is, *the science of the formal laws of thought considered as a product, and not as a process*.

But we will show still further what a form of thought is. In an act of thinking there are three things, which we can discriminate in consciousness. First, there is a thinking subject; second, an object which we think, called the matter of thought; and third, the relation subsisting between the subject and object of which we are conscious—a relation always manifested in some mode or manner. This last is the form of thought. Now logic takes account only of this last—the form of thought. In so far as the form of thought is viewed in relation to the subject, as an act, operation, or energy, it belongs to psychology. It is only in reference to what is thought about, only considered as a product, that the form of the act, or operation, or energy, has relation to logic.

With this explanation, we will now enounce the laws of thought, of which logic is the science.

In treating of the conditions of the thinkable, as systematized by Sir William Hamilton, we have pointed out the fact, that it is shown, that logic springs out of the condition of non-contradiction; for that this condition is brought to bear only

under three phases constituting three laws: 1st, the law of *Identity*; 2d, the law of *Contradiction*; 3d, the law of *Excluded Middle*: of which laws logic is the science. Of these laws we will treat in their order, and explicate the import or logical significance of each.

The principle of *Identity* expresses the relation of total sameness, in which, a product of the thinking faculty, be it concept, judgment, or reasoning, stands to all, and the relation of partial sameness, in which it stands to each, of its constituent characters. This principle is the special application of the absolute equivalence of the whole and its parts taken together, applied to the thinking of a thing, by the attribution of its constituent or distinctive characters. In the predicate, the whole is contained explicitly, and in the subject implicitly. The logical significance of the law lies in this—that it is the principle of all logical affirmation—of all logical definition.

The second law, that of *Contradiction*, is this: What is contradictory is unthinkable. Its principle may be thus expressed: When a concept is determined by the attribution or affirmation of a certain character, mark, note, or quality, the concept cannot be thought to be the same when such character is denied of it. Assertions are mutually contradictory, when the one affirms that a thing possesses, or is determined by, the characters which the other affirms it does not possess or is not determined by. The logical significance of this law consists in its being the principle of all logical negation, or distinction.

The laws of *Identity* and *Contradiction* are co-ordinate and reciprocally relative: and neither can be deduced from the other; for each supposes the other.

The third law, called the principle of *Excluded Middle*, embraces that condition of thought which compels us, of two contradictory notions (which cannot both exist by the law of contradiction) to think either the one or the other as existing. By the laws of *Identity* and *Contradiction*, we are warranted to conclude from the truth of one contradictory to the falsehood of the other; and by the law of *Excluded Middle*, we are warranted to conclude from the falsehood of one, to the truth of the other. The logical significance of this law consists in this—that it determines that, of two forms given in the laws of

Identity and *Contradiction*, and by these laws affirmed as those exclusively possible, that of these two only possible forms, the one or the other must be affirmed, as necessary, of every object. This law is the principle of disjunctive judgments, which stand in such mutual relation, that the affirmation of the one is the denial of the other.

These three laws stand to each other in relation like the three sides of a triangle. They are not the same, not reducible to unity, yet each giving, in its own existence, that of the other. They form one principle in different aspects.

These laws are but phases of that condition of the thinkable which stipulates for the absolute absence of non-contradiction. Whatever, therefore, violates these laws is impossible not only in thought but in existence; and they thus determine, for us, the sphere of possibility and impossibility, not merely in thought but in reality. They are therefore not wholly logical but also metaphysical. To deny the universal application of these laws is to subvert the reality of thought; and as the subversion would be an act of thought, it annihilates itself. They are therefore insuperable.

There is a fourth law which is a corollary of these three primary laws, called the law of *Reason* and *Consequent*, which is so obtrusive in our reasoning that it needs to be specially considered. The logical significance of this law lies in this, that in virtue of it, thought is constituted into a series of acts indissolubly connected, each necessarily inferring the other. The mind is necessitated to this or that determinate act of thinking, by a knowledge of something different from the thinking process itself. That which determines the mind is called the reason, that to which the mind is determined is called the consequent, and the relation between the two is called the consequence. By reason of our intelligent nature, there is a necessary dependence of one notion upon another, from which all logical inference results as an inevitable consequent. This inference is of two kinds. It must proceed, from the whole to the parts, or from the parts to the whole. When the determining notion (the reason) is conceived as a whole *containing* (under it) and therefore necessitating the determined notion (the consequent) conceived as its *contained part* or *parts*, argu-

mentation proceeds, by mental analysis, from the whole to the parts into which it is separated. When the determining notion is conceived as the *parts constituting*, and therefore necessitating the determined notion conceived as the constituted whole, argumentation proceeds, by mental synthesis, from the parts to the whole. The process from the whole to the parts is called deductive reasoning; the other process, from the parts to the whole, is called inductive reasoning. There is therefore in logic a deductive syllogism and an inductive syllogism. The former is governed by the rule:—*what belongs (or does not belong) to the containing whole, belongs (or does not belong) to each and all of the contained parts.* The latter by the rule:—*What belongs (or does not belong) to all the constituent parts, belongs (or does not belong) to the constituted whole.* These rules exclusively determine all formal inference; whatever transcends or violates them, transcends or violates logic.

Sir William Hamilton was the first to discriminate accurately the difference between the deductive and the inductive syllogism. All that had been said by logicians, except Aristotle, and he is brief, and by no means unambiguous, on logical induction, is entirely erroneous; for they all, including Whately, confound logical or formal induction, with that which is philosophical, and material, and extralogical. They consider logical induction not as governed by the necessary laws of thought, but as determined by the probabilities of the sciences from which the matter is borrowed. All inductive reasoning logical and material proceeds from the parts (singulars) to the whole (universal:) but in the formal or subjective, the illation is different from that in the material or objective. In the former, the illation is founded on the necessary laws of thought; in the latter, on the general or particular analogies of nature. The logician knows no principle, but the necessary laws of thought. His conclusions are necessitated, not presumed.

All this confusion was produced by the introduction, into formal logic, of various kinds of matter. Aristotle himself, corrupted logic in this way; and Sir William Hamilton has been the first to expel entirely this foreign element, and to purify logic from the resulting errors, though Kant had done much towards the same result. When we reflect, that the only

legitimate illation in formal logic, is that regulated by the law of reason and consequent, which connects thought into a reciprocally dependent series, each necessarily inferring the other, it is, at once, manifest, that the distinction of matter into possible, actual, and necessary, is a doctrine wholly extralogical. Logical illation never differs in degree—never falls below that of absolute necessity. The necessary laws of thought constraining an inevitable illation, are the only principle known to the logician.

We have just seen that Sir William Hamilton is the first to signalize the fact, that reasoning from the parts to the whole, is just as necessary, and exclusive of material considerations, as reasoning from the whole to the parts. And he has evolved the laws of the Inductive Syllogism, and correlated them with those of the Deductive Syllogism.

We now proceed to another important addition which he has made to logic. He has shown that there are two logical wholes, instead of one, as the logicians had supposed. These two wholes are the whole of Comprehension, called by Sir William, Depth, and the whole of Extension, called by him, Breadth. These two wholes are in an inverse ratio of each other. The maximum of depth and the minimum of breadth are found in the concept of an individual (which in reality is not a concept, but only a single representation;) while the minimum of breadth and the maximum of depth is found in a simple concept—the concept of being or existence. Now, the depth of notions affords one of two branches of reasoning, which, though overlooked by logicians, is, at least, equally important as that afforded by their breadth, which alone has been developed by the logicians. The character of the former is that the predicate is contained *in the subject*; of the latter, that the subject is *contained under* the predicate. All reasoning, therefore, is either from the whole to the parts, or from the parts to the whole, in breadth; or from the whole to the parts, or from the parts to the whole, in depth. The quantity of breadth is the creation of the mind, the quantity of depth is at once given in the very nature of things. The former therefore is factitious, the latter is natural. The same proposition forms a different premise in these

different quantities, they being inverse ratios; the Sumption in Breadth being the Subsumption in Depth.

Another fundamental development of logic, made by Sir William, is that the Categorical Syllogism though mentally one (for all mediate inference is one and that categorical,) is either Analytic or Synthetic, from the necessity of adopting the one order or the other, in compliance with that condition of language which requires that a reasoning be distinguished into parts and detailed in order of sequence. Because explication is sometimes better attained by an analytic and sometimes by a synthetic enunciation; as is shown in common language. The Aristotelic syllogism is exclusively synthetic. Sir William Hamilton thus relieves the syllogism from a one-sided view; and also rescues it from the objection of *Petitio Principii* or of an idle tautology, which has been so often urged against it. Such objection does not hold against the analytic syllogism, in which the conclusion is expressed first, and the premises are then stated as its reasons. And this form of reasoning being shown to be valid, the objection of *Petitio Principii* is, at once, turned off as applicable only to the accident of the external expression, and not to the essence of the internal thought. The analytic syllogism is not only the more natural, but is presupposed by the synthetic. It is more natural to express a reasoning in this direct and simple way, than in the round-about synthetic way.

We will next consider the most important doctrine, perhaps, which Sir William Hamilton has discovered in the domain of logic. Logicians had admitted that the *subject* of a proposition has a determinate quantity in thought, and this was, accordingly, expressed in language. But logicians had denied, that the *predicate* in propositions has a determinate quantity. Sir William Hamilton has, therefore, the honour to have first disclosed the principle of the thorough-going quantification of the predicate, in its full significance, in both affirmative and negative propositions. By keeping constantly in view, that logic is conversant about the internal thought and not the external expression, he has detected more, of what it is common to omit in expression, of that which is efficient in thought, than any other philosopher. Inferences, judgments, problems, are often occult in the

thought, which are omitted in the expression. The purpose of common language is merely to *exhibit with clearness the matter of thought*. This is often accomplished best, by omitting the expression of steps in the mental process of thinking; as the minds of others will intuitively supply the omitted steps, as they follow the meaning of the elliptical expression. This elliptical character of common language has made logicians overlook the quantification of the predicate. The purpose of common language does not require the quantity to be expressed. Therefore, it was supposed, that there is no quantification in the internal thought. When we reflect that all thought is a comparison of less and more, of part and whole, it is marvellous that it should not have been sooner discovered that all thought must be under some determinate quantity. And, as all predication is but the expression of the internal thought, predication must have a determinate quantity—the quantity of the internal thought. But such has been the iron rule of Aristotle, that, in two thousand years, Sir William Hamilton has been the first logician, who, while appreciating the labours of the Stagirite in this paramount branch of philosophy, has been, in no degree, enslaved by his authority, and has made improvements in, and additions to, logic, which almost rival those of the great founder of the science himself.

The office of logic is to exhibit, *with exactness, the form of thought*, and therefore to supply, in expression, the omissions of common language, whose purpose is merely to exhibit, *with clearness, the matter of thought*. Logic claims, therefore, as its fundamental postulate, *That we be allowed to state, in language, what is contained in thought*. This is exemplified in the syllogism, which is a logical statement of the form of thought in reasoning, supplying in expression, what has been omitted in common language. Apply this rule to propositions; and it is at once discovered, that the predicate is always of a given quantity in relation to the subject.

Upon the principle of the quantification of the predicate, Sir William Hamilton has founded an entirely new analytic of logical forms. The whole system of logic has been remodelled and simplified. The quantification of the predicate reveals, that the relation between the terms of a proposition is one not

only of similarity, but of identity; and there being consequently an equation of subject and predicate, these terms are always necessarily convertible. So that simple conversion takes the place of the complex and erroneous doctrine, with its load of rules, heretofore taught by logicians.

By the new analytic, Sir William Hamilton has also amplified logic. The narrower views of logicians, in accordance with which an unnatural art had been built up, have been superseded by a wider view commensurate with nature. Logic should exhibit all the forms of thought, and not merely an arbitrary selection; and especially where they are proclaimed as all. The rules of the logicians ignore many forms of affirmation and negation, which the exigencies of thinking require, and are constantly used, but have not been noted in their abstract generality. Accordingly, Sir William Hamilton has shown that there are eight *necessary* relations of propositional terms; and, consequently, eight propositional forms performing peculiar functions in our reasonings, which are implicitly at work in our concrete thinking; and not four only, as has been generally taught. Logic has been rescued from the tedious minuteness of Aristotle, and his one sided view, and from the trammels of technicality, and restored to the amplitude and freedom of the laws of thought.

The analysis of Sir William Hamilton enables us also to discriminate the class, and to note the differential quality of each of those syllogisms, whose forms are dependent on the internal essence of thought, and not on the contingent order of external expression, such as the disjunctive, hypothetical, and dilemmatic syllogism, and to show the special fundamental law of thought by which each distinctive reasoning is more particularly regulated. And those forms of syllogism, which are dependent on the contingent order of the external expression embraced in the three figures of Aristotle, are expounded anew; and while their legitimacy is vindicated, the fourth figure, which has been engrafted on the system by some alien hand, is shown to be a mere logical caprice. But we cannot particularize further. In fact, the workshop of the understanding has been laid open, and the materials, the moulds, and the castings of thought, in all their variety of pattern have been exhibited,

and the great mystery of thinking revealed by this great master, on whom the mantle of Aristotle has fallen in the nineteenth century.

Logic may be discriminated into two grand divisions—the Doctrine of Elements, and the Doctrine of Method. Thought can only be exerted under the general laws of Identity, Contradiction, and Excluded Middle, and Reason and Consequent; and through the general forms of concepts, judgments, and reasonings. These, therefore, in their abstract generality, are the elements of thought; and that part of logic, which treats of them, is the Doctrine of Elements. To this part of logic, we have thus far confined our remarks. And the writings of Sir William Hamilton treat only of this part of logic. But, in order to show the historical position of Sir William, and to exhibit the relation, which, we have said his philosophy bears to the philosophy of Aristotle and the philosophy of Bacon, as an initial, or step of progress towards harmonizing the logic of the one with the Method of the other, it becomes necessary to remark briefly upon the second part of Logic, the Doctrine of Method.

Method is a regular procedure, governed by rules which guide us to a definite end, and guard us against aberrations. The end of Method is logical perfection, which consists in the perspicuity, the completeness, and the harmony of our knowledge. As we have shown, our knowledge supposes two conditions, one of which has relation to the thinking subject, and supposes that what is known, is known clearly, distinctly, completely, and in connection; the second has relation to what is known, and supposes that what is known, has a veritable or real existence. The former constitutes the logical, or formal perfection of knowledge; the latter, the scientific, or material perfection of knowledge. Logic, as we have shown, is conversant about the form of thought only; it is, therefore, confined exclusively to the formal perfection of our knowledge, and has nothing to do with its scientific, or material truth, or perfection. Method, therefore, consists of such rules as guide to logical perfection. These rules are, definition, division, and concatenation, or probation. The doctrine of these rules is Method.

Logic, as a system of rules, is only valuable, as a mean, to-

wards logic as a habit of the mind—a speculative knowledge of its doctrines, and a practical dexterity with which they may be applied. Logic, therefore, both in the doctrine of elements and the doctrine of method, is discriminated into abstract or pure, and into concrete or applied. We have thus far, only had reference to abstract or pure logic; and Sir William Hamilton treats only of this. It becomes, however, necessary for our purpose, to pass into concrete or applied logic. Now, as the end of abstract, or pure logical method is merely the logical perfection of our knowledge, having reference only to the thinking subject; the end of concrete or applied logical method, is real or material truth, having reference only to the real existence of what is thought about. Concrete logic is, therefore, conversant about the laws of thought, as modified by the empirical circumstances, internal and external, in which man thinks; and, also, about the laws under which the objects of existence are to be known. We beg our readers to remember these distinctions, and that all that now follows is about concrete or applied logic.

In order to show how the improvements and developments in formal logic, which we have exhibited, that have been made by Sir William Hamilton, conciliate the deductive, or explicative logic of Aristotle, with the inductive or ampliative logic of Bacon, it becomes necessary to state the difference of the philosophical methods of the two philosophers.

The great difficulty, with the ancient philosophers of the Socratic School, was to correlate logically, the *a priori* and the *a posteriori* elements of our knowledge. The difficulty seems to have been suggested by the question, *How can we know a thing for the first time?* This question raised the doubt, that it is vain to search after a thing which we know not, since not knowing the object of our search, we should be ignorant of it when found, for we cannot recognize what we do not know. Plato, and Socrates perhaps, solved the difficulty by the doctrine, that to discover, or to learn, is but to remember what has been known by us in a prior state of existence. Investigation was thus vindicated as a valid process; and also a useful one, as it is important to recall to memory what has been forgotten. Upon this theory of knowledge, Plato made intellect,

to the exclusion of sense, the faculty of scientific knowledge, and ideas or universals the sole objects of philosophical investigation. The Platonic philosophy, called, in this aspect of it, Dialectic, had for its object of investigation, the true nature of that connection which exists between each thing and the archetypal form or idea which makes it what it is, and to awaken the soul to a full remembrance of what had been known prior to being imprisoned in the body.

Aristotle made a great advance beyond Plato, towards correlating the *a priori* and *a posteriori* elements of our knowledge. He rejected the Platonic doctrine of Ideas, as universals existing anterior to and separate from singulars; and thereby ignored the Platonic doctrine of reminiscence. Still, he did not extricate himself out of the difficulties which environed the problem of human knowledge. He seems to have believed in the existence of universals or forms, not apart from, but in, particulars or singulars. And to correspond with this metaphysical doctrine, he made both intellect and sense important faculties in science. He maintained an *a priori* knowledge paramount to, but not exclusive of, the *a posteriori*. That while universals are known through the intellect, and implicitly contain particulars or singulars, yet we may be ignorant of the singulars or particulars, until realized in and through sense; and that, therefore, though all knowing is through previous knowledge, yet the investigation of particulars is not superfluous; because, while we may know the universal, we may be ignorant of the particular. Therefore, intellect and sense combine in framing the fabric of our knowledge.

The Aristotelic method of investigation is, therefore, twofold, Deductive and Inductive; the first allied with intellect and with universals, the latter allied with sense and with particulars. Aristotle, in accordance with this doctrine of method, seems to have considered syllogism proper, or deduction, no less ampliative than induction—that deductive inference did, in some way, assure us, or fortify our assurance of real truth. We greatly doubt whether he discriminated at all, the difference between formal and material inference; we think that he rather referred all difference in the cogency of inference, to the difference of necessity or contingency in the matter. He,

strangely enough, maintains for the syllogism proper, the power to deduce true conclusions from false premises. Therefore, the syllogistic inference is not wholly dependent on the premises. And consequently, Deduction is not dependent on Induction, whose office it is to supply the premises.

This logical doctrine of Aristotle corresponds with his metaphysical, and his psychological doctrine. As he makes universals the paramount object of science, and intellect its paramount principle, so does he make syllogism the paramount process, and induction the inferior process in logic; for though intellect is not with him as with Plato, the sole principle of science, but conjunct with sense, yet sense is logically subordinate to intellect. There are, according to his theory of knowledge, certain universal principles of knowledge existing in the mind, rather as native generalities than as mere necessities of so thinking, which furnish the propositions for syllogism; therefore syllogism is not dependent for these on induction. It is nevertheless true, that according to the Aristotelic theory, there is perfect harmony between intellect and sense, between syllogism and induction. And though syllogism is the more intellectual, the more scientific; yet induction can be legitimately used as corroborative and complementary of syllogism, and particularly by weak minds, who can discern the universal in the particulars, but cannot apprehend it *a priori* as a native generality. It was because of this theory of knowledge, that induction holds so subordinate and inferior a place in the Aristotelic logic.

Whether our account of Aristotle's theory of knowledge be the true one or not, for there is much obscurity over his doctrine, it is nevertheless certain, that Aristotle had a very imperfect insight into induction as an objective process of investigation. And the slighting manner, in which he passes induction over, shows how little he appreciated it. He has made a crude and superficial distinction, which has been perpetuated to this day, between the universals derived from induction, and universals derived from similars. In other words, he has correlated induction and analogy as different kinds of reasoning. And all writers on logic, including, we suspect, even Sir William Hamilton, still speak of reasoning by induction, and rea-

soning by analogy. This, it seems to us, is a great confusion and error. We make induction the process, and analogy or similarity the evidence by which the illation is warranted. That analogy, which is the mere resemblance of relations, has nothing to do with philosophy; but only that analogy, which consists of an essential resemblance or similarity. The tendency to generalize our knowledge, by the judgment, *that where partial resemblance is found, total resemblance will be found*, is an original principle of our intelligence, and may be called, the principle of philosophical presumption. Upon this principle the objective process of induction is founded, by which we conclude from something observed, to something not observed; from something within the sphere of experience, to something without its sphere. This principle of philosophical presumption, is brought to bear under two objective laws: the first proclaims, *One in many, therefore one in all*; the second proclaims, *Many in one, therefore all in one*. Through the first law, we conclude from a certain attribute being possessed by many similar things or things of the same class, that the same attribute is possessed by all similar things or things of the same class. Through the second law, we conclude from the partial similarity of two or more things in some respects, to their complete or total similarity. Both laws conclude to unity in totality; by the first, from the recognized unity in plurality; by the second, from the recognized plurality in unity. Both of the laws, it is very apparent, are phases of the principle of resemblance or analogy. To call the first of these laws *induction*, and the second, *analogy*, as has been done, destroys the correspondence between abstract or pure, and concrete or applied logic. In abstract or pure logic, induction is recognized, but analogy not; therefore analogy cannot rest on the same basis with induction in concrete or applied logic, else, like induction, it would have its counterpart in abstract logic.

The theory of knowledge, which we have expounded as his, in which the *a priori* element is so paramount to the *a posteriori*, prevented Aristotle from having any but the shallowest insight into the scope of induction. The inevitable result of this was to make him slight observation through sense; and to rely chiefly on deduction from principles supplied by the intel-

lect. This was the cardinal vice of Plato, and also of Aristotle, but not nearly to so great an extent. The philosophy, therefore, of Aristotle, is rather the result of an analysis of the contents of language, than a product of an original observation of nature. The philosophy of Bacon is just the reverse—it is a product of the observation of nature, and not an analysis of the contents of language. One of the chief precautions of the *Novum Organum* is, that language is but the registry of the crude notions of imperfect observation, and consequently that nature herself must be interpreted, to ascertain the truth. The logic of Aristotle was designed more for evolving, sifting, and methodizing what had already been thought, than for conducting new investigations. The great purpose of Bacon was to bring philosophy from books and tradition to nature, from words to things, from the Syllogism to Induction.

The true excellence of the Aristotelic logic, therefore, consists in its being considered formal and not material. In this view, the *Organon* of Aristotle is conversant about the laws under which the subject thinks; while the *Novum Organum* of Bacon is conversant about the laws under which the object is to be known. Viewed in this aspect, the two logics, though contrariant, are not antagonistic; but are the complements of each other. The Aristotelic without the Baconian is null; the Baconian without the Aristotelic is deficient. The Baconian supplies the material of the Aristotelic; and while the truth of science is wholly dependent on the Baconian, its logical perfection is wholly dependent on the Aristotelic. The transition, in thinking, from the Baconian to the Aristotelic is as follows. The *process* of Induction, as founded on probability, is relative, but its conclusion is absolute. Similarities or analogies retain their character of difference and plurality in the inductive process, but become one and identical in the conclusion, or class, into which they are combined by an act of abstraction and generalization. This conclusion becomes the premise of Deduction. It is then within the domain of formal logic.

That Sir William Hamilton has done much to reconcile the Aristotelic logic with the Baconian, by purifying the theory of both, and showing their interdependence, by developing that side of the Aristotelic which lies next to particulars and induc-

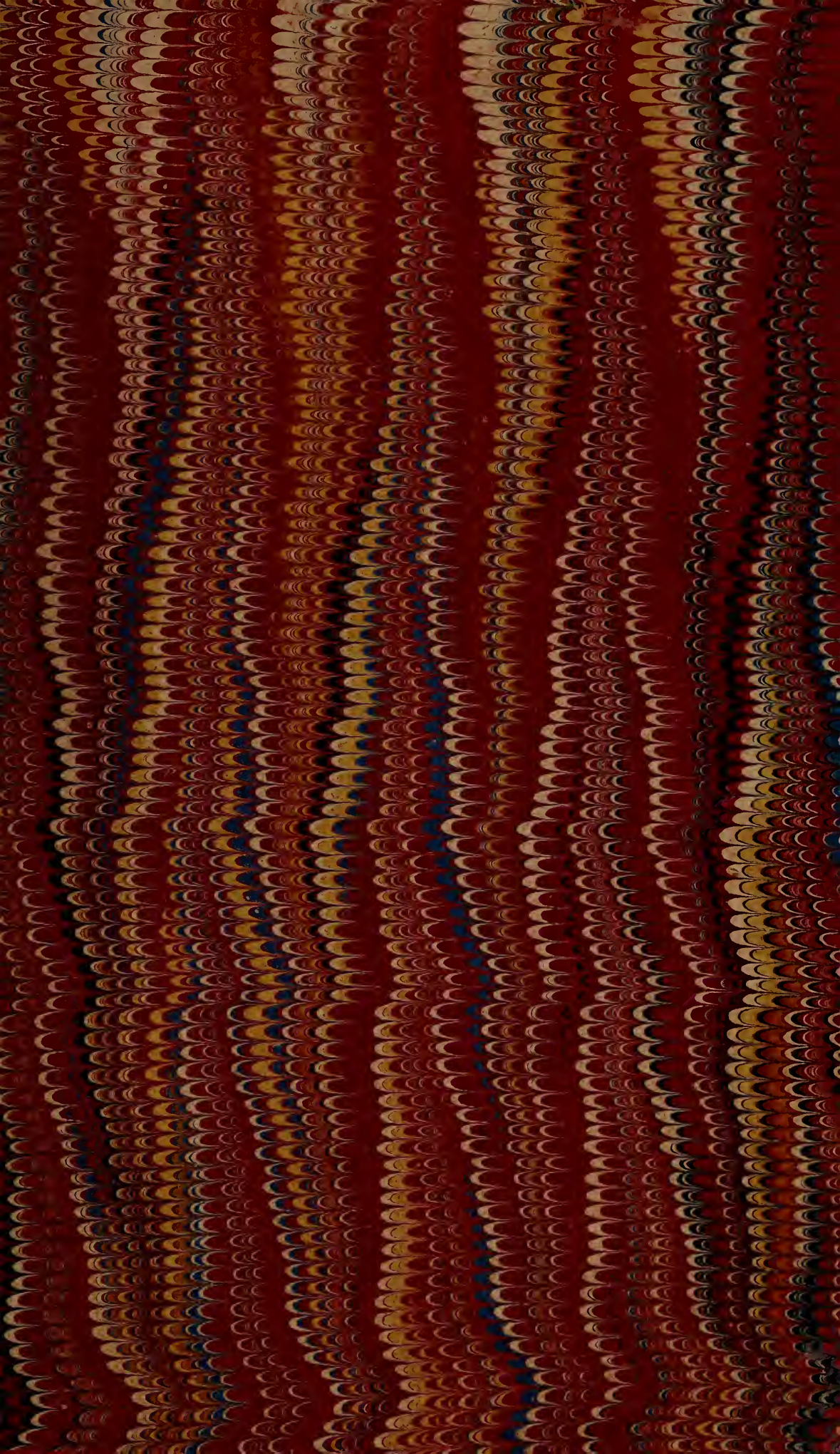
tion, (for all his additions to logic are such,) must be admitted by those who can appreciate his writings. And nowhere, in the history of philosophy, is there a definition of Induction which reaches so thoroughly to the heart of the thing, the essential nature of the philosophical inference of the universal from the singular, as that which Sir William has given to discriminate the Baconian from the Aristotelic, the material from the formal. His definition is this: "A *material illation* of the universal from the singular, warranted either by the general analogies of nature, or by special presumptions afforded by the object matter of any real science." This definition shows that the inductive process of Bacon, is governed by the laws, not of the thinking subject, *ratione formæ*, but by the laws of the object to be known, *vi materiæ*. This definition, though only used to discriminate negatively the Aristotelic, or formal induction, sheds so much light on the Baconian induction, as to entitle Sir William Hamilton to the praise of having contributed to a true theoretic exposition of the Baconian method, by showing the ultimate basis of its validity, in disclosing the nature of the determining antecedent and the determined illation. The determining antecedent is shown to be the analogies of nature, which afford presumptions varying in all degrees of probability, from the lowest to the highest certainty, that what is found in the singulars observed is in all the singulars. The physical observer asserts, on the analogy of his science, that as *some* horned animals ruminate, *all* horned animals ruminate. The logician accepts the conclusion, all horned animals ruminate, and brings it under the laws of thought, and considers the *some* of the physical observer as equivalent to his *all*. Sir William thus extricates the theory of material induction from the syllogistic fetters in which the logicians had entangled it. His design was, however, by no means, to exalt the dominion of Bacon; but rather, all his labours are designed to draw the age from its one-sided culture—its too exclusive devotion to physics. We, therefore, standing, as we do, at the Baconian point of view of philosophy, step forward to hail the expositions of Sir William Hamilton, and concatenate them with the philosophy of Bacon. So that the Baconian philosophy, in the future, may cease to be "the dirt philosophy" which some of

its heretical disciples have made it, and may embrace all the grand problems of thought which Sir William Hamilton has brought within the philosophy of common sense, and which Bacon certainly intended his philosophy to embrace.

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