THE

METHODIST QUARTERLY REVIEW.

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ART. I.—PHILOSOPHY AND FAITH.

1. *An Historical and Critical View of the Speculative Philosophy of Europe in the Nineteenth Century.* By J. D. MORELL, A. M. New-York: Robert Carter. 1 vol., 8vo. 1848.
2. *Essais sur la Philosophie et la Religion au XIX. Siècle.* Par EMILE SAISSET, Agrégé à la Faculté des Lettres de Paris. Paris: Charpentier. 1 vol., 18mo. 1845.

WE have no design of subjecting the works specified in our rubric to any formal examination. We shall avail ourselves of their assistance without entering into their excellencies or defects. Mr. Morell's is sufficiently familiar to the reading public, and has been already criticised often enough, to render such a labour on our part with respect to it a work of supererogation. M. Saisset's is little more than a collection of essays originally published in the "Revue des Deux Mondes," and written in the highest strain of polemical declamation—we might, perhaps, venture to add, of polemical sophistry also. To criticise the latter, might be deemed false heraldry; for it is as contrary to the ordinary etiquette and procedure of the literary censorship to review a review, as it is in the theory of coat-armour to blazon metal upon metal. Moreover, M. Saisset's articles were written with a direct reference to a local question—the general superintendence of education—which was then agitating the French public; and if the subject at any period possessed much interest for Americans, the time has now passed away, and the present condition of France presents new and more exciting topics for our study and investigation. Under these circumstances, we deem it of more importance to enlarge upon our texts than to point out the merits and note the deficiencies of the text-books themselves.

The struggle between science and religion, between philosophy and faith, has been protracted through centuries; but it is only within recent years that the breach has become so open and avowed as to be declared by many to be irreconcilable. Even Bayle, an acute sceptic in an infidel age, who did more, perhaps, than any other single individual to exhibit the difficulties and the conditions of concord, expressed a lively hope that this conciliation would be effected in his own day.* But the contest is both more arduous and more general now than in the times of Bayle: it is no longer confined to the hierophants of human speculation, but has been diffused among the multitudes; and on all sides we hear the mingled voices of despondency, despair, and exultation—exultation on the part of those who triumph in the abasement of religion—despair on the part of those who would uphold, if they only knew how, what they regard as the tottering fabric—and despondency on the part of the small remainder who, clinging to the faith themselves, witness with dismay the terrible success of the strong influences which are warring against it. Such a time is not one in which we can, without madness, conceal the magnitude of the danger, or supinely disregard the conditions of the enigma to be solved. "It is well," as Dr. Chalmers said, "to know the dimensions of the spectre," if spectre it should prove on examination to be. Certainly we cannot safely affect to ignore its existence, with such universal evidences of its vitality around us.

A recent writer in the Westminster Review has boldly announced the failure and exhaustion of Christianity. Strauss and Morell, to whom we might add Saisset, and many others, propose, as the sole remaining expedient for the preservation of religious faith of any kind, to sublimate Christianity in such a manner that all that is essential or characteristic will necessarily be volatilized. Comte declares continually, in his "Cours de Philosophie Positive," the absolute incompatibility of science with religion; and, widely opposed as are the systems of Comte and Saisset, the latter approximates closely to the great *Positivist*, by his denial that there can be any perfect conciliation between philosophy and faith, and by his proposal to erect the former into an authority co-incident and co-equal with Christianity.†

At such a time, the duty of every man who is unwilling to renounce

* "Sperare potuit (Bælius) ex sublimibus illis ingeniis, a quibus nova systemata hodie proficiscuntur, non defore, quæ gloriæ aculeis stimulentur opera sua, fierique posse, ut extricationem hactenus incognitam excogitent."—*Resp. Posth. ad Clericum, cit. Leibnitzii Opera*, tom. i, p. 114. Ed. Dutens.

† Saisset, Essais, &c., Preface, p. ix, xxiv, 287, 322.

his Christian convictions is clear and obvious. He must strain every nerve to establish that reconciliation between religion and philosophy which has been asserted to be impossible; or, if he despairs of being able to accomplish this, he must endeavour to detect those fallacies in philosophy which prohibit the concord. The problem is by no means of easy solution—nay, rather, it is the most difficult, as well as the most important, which the human reason can entertain. But, whatever may be the obstacles to be surmounted, to which we are by no means blind, we purpose co-operating in the achievement of the desired harmony, by examining into the character and validity of the various systems of metaphysics, and especially of those which are now most in vogue, and which threaten the most plausible or violent assaults on the religious convictions of men.

M. Saisset very truly remarks, that "there is no problem in philosophy anterior to the question of method."* All the differences of the conflicting schools may indeed be readily traced to the dissimilarity of the methods which they respectively employ. But the fundamental inquiry, in establishing or testing the value of any particular method, is, as Mr. Morell perceives, (*Morell*, p. 732,) to determine the origin or mode of human knowledge; or, if this be regarded as beyond our attainment, to investigate the grounds alleged by each metaphysical system as the source of certitude, and the degree of certainty which they severally attribute to human knowledge. This is the first and the great question which must be decided before any legitimate scheme of philosophy can be constructed, and the mode in which it is settled will both fix the method, and predetermine nearly all the details, of the system, which can be little more than developments from this great first principle. John Locke truly and instinctively felt that on this cardinal point everything hinged, when he devoted the first book of his "Essay on the Human Understanding" to the consideration of the foundations of human knowledge. This book, it is true, is the least satisfactory portion of his celebrated Essay; but it honestly, though ineffectually, grappled with a difficulty which could not have been safely neglected, Mr. Morell's opinion to the contrary notwithstanding.† Yet, though this question is the first in logical

* This observation, which had been frequently made before, is endorsed by Mr. Morell, pp. 46, 55, 731.

† Morell, p. 80. Mr. Morell's criticism on Locke meets, in the main, with our assent and approbation, but in this particular point we must disagree with him. Before we can expect our reasoning on any subject to be accepted as valid, most especially in regard to such a subject as the human understanding, we must exhibit the basis on which that reasoning stands, and from which it must

order* and importance, it was by no means the first in time, to whose solution the mind of man was applied when regard was paid to philosophical speculations.

Notwithstanding all reasoning, and indeed all practice, must rest upon the assumed or implied certainty of human knowledge, still many ages of laborious inquiry must necessarily have passed away before philosophers could have arrived at that ultimate problem of metaphysics—the determination of the real certainty or uncertainty of human knowledge, and the causes of either character which might be deemed its appropriate attribute. Philosophy (or the examination into the relations and dependence of the processes of mind, the phenomena of existence, and the aspects of the objective universe) at first contented itself with resolving the details, which fell under the cognizance of simple observation, into regularly concatenated sequences of more general facts, and thence proceeded to simplify and co-ordinate these facts by due subordination to a higher generalization. The latter development of philosophy was effected by deductive reasoning from the more general notions familiar to the minds of men,† whose accuracy was either never called in question, or was assumed on vague conjecture or loose and hasty induction.‡ To this source we may refer, in great measure, the cosmogonies of the Greeks, and the dreams of some of their earliest philosophers. Still it was the necessary tendency of the development of the philosophic spirit, tracing backward the explanation of phenomena, and seeking for the discovery and exposition of the laws of nature, to find itself at length brought face to face with the great question of the certainty of human knowledge; and the attempted solution of this problem seems to have constituted the distinguishing merit of the Eleatic school. They, like Spinoza, in the seventeenth century, and the Hegelians and Schellingists of our own day, placed this

derive its claim to validity. Locke was therefore right in his aim, however he may have failed to attain its satisfactory accomplishment.

* Mr. Morell, p. 89, notices with approval the distinction between the logical and chronological priority of ideas, and intimates that V. Cousin borrowed the terms from "the language of the schools." He might have found them continually and familiarly employed by Aristotle, Metaph. vi, 13, p. 1038, b. 27, Ed. Bekker & Brandis, xii, 2, p. 1077, b. 1, and the passages cited by Waitz ad Aristot. Organon, p. 14, a. 26, p. 71, b. 21.

† The *κοιναὶ ἀρχαί*, or *κοιναὶ δόξαι* of Aristotle, v. Asclep. Schol. Aristot., p. 586, a. 21, p. 591, b. 9.

‡ Inductive reasoning is still commonly supposed to be due to Bacon, either in its form, or, according to Macaulay, in its application. Aristotle assigns its first scientific employment to Socrates, Metaph. xii, 4, p. 1078, b. 17, 24–29, and familiarly uses and mentions it himself. Of course, it had been loosely employed long before.

certainty in the identity of the world and mind, and in the constant hypostasis and revelation of the Deity harmoniously in the spheres of matter and of intellect.* Hence, the Eleatics sought, by the invention of logic, the co-incident truths of knowing and being in the development of the processes of reasoning, which were themselves equally regarded as so many modifications of the Divine apparition. We cannot forbear noticing the close analogy which exists between this philosophy and Cartesianism, and especially its intimate affinity to modern German Idealism. The empty sophistry which resulted from the Pantheism of Xenophanes and Parmenides, led to the ironic doubt of Socrates, and the perfection of a more formal logic, and also stimulated the systematic attempt of Plato to build up a theory of certainty on the basis of primordial types†—independent, absolute, archetypal truths, existing solely in the volition and contemplation of Deity, but partially communicable to men in proportion to their approximation to the Divine nature by meditation, purity, and asceticism. The efforts of Socrates were contemporaneous with the development of the Empiricism of Protagoras,‡ whose philosophy very closely approximated to that of the French Encyclopædists, and of the scepticism of Hippo, who anticipated the fundamental principle of the philosophy of Comte.§ It was to withstand the blighting consequences of such theories, and, at the same time, to furnish against the other sophists a stable basis for the recognition and distinction of vice and virtue, right and wrong, truth and falsehood, that Socrates undertook his crusade against the perverse ingenuity of the times. His views, as expounded in the elaborate system of Plato, were analogous to the theories of those moderns who attempt to deduce the certainty of our knowledge from the supposed existence of universal and necessary truths. But to the acute mind of Aristotle it was evident that

* The Pre-established Harmony of Leibnitz must not be confounded with this form of Pantheism. Leibnitz's doctrine, though Pantheistic in tendency, was an attempt to reconcile Cartesianism with Christianity.

† Aristot. Metaph., xii, 4. See Plato, Theætetus and De Republ., Maurice, Hist. Met. and Mor. Phil., ap. Encycl. Metrop.

‡ Protagoras held that "man is the measure of all things," and that "opinions are all equally true, or equally false." (Aristot. Met., iii, 5, p. 1009, a. 5.) From Plato's Theætetus, c. viii, p. 241, Ed. Tauchn, he appears to have held also the fundamental position of the Sensationalists, that "sense is the sole source of knowledge."

§ Οὐ λέγει γὰρ (ὁ Ἱππων) ἄλλο τι εἶναι παρὰ τὰ φαινόμενα φυσικὰ πράγματα. (Asclep. et Cod. Reg. Schol. Arist. Metaph., i, c. 3.) Hippo was satirized on the comic stage by Crates on account of his atheism, (Schol. Aristoph. Nubes, v. 97,) and is on the same account called "foolish" by Aristotle, (Metaph., i, c. 3, p. 983, and Alex. Aphr. Asclep. et Cod. Regius. ad loc.)

the *ideas* of Plato were assumptions;* that, even if existent, their existence could not be proved, their connexion could not be traced, nor their mode of communication discovered. It was further apparent to him that the adoption of absolute ideas rendered necessary the adoption also of archetypes in a series advancing *ad infinitum*, and that the various gradations of these ideas became entangled with each other, and neutralized each other in frequent instances. It was furthermore evident to Aristotle, that the Eleatics had transcended the legitimate limits of human speculation by asserting the fundamental identity of matter and mind, and the supposed identification of both with the pulsations of the Divine essence; that the Sophists had rendered truth and knowledge impossible, by denying it a valid basis, and by recognising the equal and simultaneous truth of all contradictions; that Hippo had foolishly excluded a large portion of even the phenomena of consciousness, which he affected to ignore, as his system was too narrow to embrace them; and that Plato had overleaped the same limits which the Eleatics had transcended, by the supposition of his archetypal ideas. Aristotle sought accordingly to establish philosophy principally on the basis of the senses; but he recognised, at the same time, the impossibility of drawing certitude from this source,† and referred the certainty of human knowledge to the *forms* in which it was perceived by the mind, and to those indemonstrable principles‡ which are evidenced by the common belief and the common sense of mankind, and which constitute the necessary basis of all our reasoning. The philosophy of Aristotle, when examined carefully, without prejudice, with a due allowance for the complexion of the age in which he wrote, and in a spirit of comprehensive criticism, will be found to assimilate itself very closely to that of Bacon,§ and to furnish the undeveloped type of that of Kant.‖

It is this sober and comprehensive character of the Aristotelean philosophy, which neither oversteps the limits of the human mind, nor fails to approximate closely to them, which gave to the

* Aristot. Metaph., xii, c. 2, c. 4.

† The ordinary supposition, that Aristotle was a pure Sensationalist, is indubitably a delusion. See Aristot. Metaph., iii, c. 5, p. 1010, a. 2, p. 30, c. 6, p. 1011, b. 5; iv, c. 12, p. 1019, b. 25.

‡ Aristot. Metaph., iii, c. 6, p. 1011, a. 8–13, c. 7, p. 1012, a. 17; x, c. 5, p. 1062, a. 2, c. 6, p. 1063, b. 10; iii, c. 4, p. 1006, a. 8, and Alex. Aphr.

§ We are unable to trace, with Coleridge, any analogy between Plato and Bacon, though Bacon is closely related to Aristotle. They both give a practical prominence to empirical science, without concealing the higher principles of mind.

‖ Aristotle's direct anticipations of the doctrines of Kant are very numerous.

Stagirite his lofty and enduring ascendency throughout the middle ages, and which, in the grievous intellectual doubts and difficulties of the present time, is gradually reclaiming to his standard the strongest minds of the age,* disgusted with the barren and crushing theories of Sceptics and extreme Sensationalists, and distracted by the logomachies and transcendental reveries of Idealists and Eclectics. The world, indeed, never goes back, and it cannot, and ought not, to return to its old servile allegiance to Aristotle, so far as to hail him again as "the master;" but it will be necessitated, if it would retain its belief in Christianity and the sanctity of religion, to plant itself on similar ground, and to observe like abstinence from metaphysical systematization; and to imitate and develop the processes, and to incorporate the results, of his philosophy in any new doctrine which can hope to be valid. It must also recognise him as one of most efficient labourers in the cause of sound knowledge and metaphysical research.

To return to our examination. The same battle which was fought between the systems of antiquity, was fought over again during the middle ages between the Mystics, Realists, Nominalists, and Sceptics. The same enigma has been involved in all the metaphysical disputes of modern times, and is at this moment revealed in all its energy between the conflicting sects and parties of the present day. We cannot go so far as the Abbé Bautain, who sees in modern metaphysics only the repetition of the Greek dreams,† for we recognise a constant advancement through the recurring cycles of analogous development and similar phenomena; but the mutual resemblances of ancient and modern schools furnish some ground for the strong expression of M. Bautain, and at any rate suffice to illustrate the identity of those fundamental difficulties, to the solution of which the energies of both have been devoted.

But notwithstanding the maintenance of unremitted efforts through recurring centuries, and successive forms of civilization, the great question still remains without any satisfactory solution. Is human knowledge blessed with certitude? and, if so, whence is its certainty derived? Is the human mind limited merely to vague opinion? or can it also arrive at the recognition of truth? And by what means do we distinguish between opinion and knowledge?

The elaborate, acute, but chimerical systems of German Tran-

* This is indicated by the endless Commentaries on Aristotle's Logic and Metaphysics, published in Germany within the last twenty years; by Waitz, Aristot. Organon, Præf., p. v, and by the Edinb. Rev., April, 1849.

† Les veilleries renouvelées des Grecs, cit. Saisset, p. 21.

scendentalism and Nature-philosophy rest entirely upon the same baseless assumption as that which furnished the central doctrine of the Eleatics. The Scotch philosophers take, as their starting-point, an hypothesis analogous (however paradoxical it may appear) to the archetypal ideas of Plato. The Eclectics, enlarging the field of speculation, follow in the footsteps of the Alexandrian school.* The Mystics, like Philo Judæus, Origen, and the later Neo-Platonists, regard all knowledge as individual inspiration, and the Sensationalists or Positivists limit certainty to sensuous and empirical observation—yet what adequate guaranty can we have on their principles of the accuracy or credibility of the reports rendered by the senses?

The knot, which has not been untied, and perhaps never may be, was cut by Kant and Jacobi. The former referred all knowledge to the inexplicable co-operation of sensible influences and intellectual processes, assigned to the mind the formal part in all perception and reasoning,† and thus rendered certitude purely relative to the individual intellect. At the same time, however, he made provision for that conviction of certainty in practice, which is necessary for the explanation, and even for the rationality, of human action. The latter denied any intelligible foundation for the certainty of our knowledge, or for the construction of a metaphysical system, referring our practical convictions of truth to the irresolvable function of belief, which he regarded as a primitive property of our being.

We cannot hope to offer a satisfactory solution of these mysteries, which have been left to our day without solution, notwithstanding the labours of long centuries, and the successive speculations of so many profound philosophers. A calm and diligent scrutiny of the phenomena of the reasoning processes may, however, be of essential service, by preparing the way for future discoveries, or, at any rate, by exhibiting, in their true colours, and without disguise, the real difficulties of the problem, which, if they cannot be removed, must be candidly acknowledged to be insurmountable. The great stumbling-block which has produced much of the discord of the schools, and left these fundamental inquiries in such a confused and bewildering state, has been the anxiety to discover some valid foundation for speculation, without the patience to determine how far that basis really accords with the true phenomena of the human mind. This desire of arriving speedily at some cer-

* The infatuation of system has distorted Saisset's views on this subject, pp. 86–90.

† Aristotle's distinction of matter and form is virtually undeveloped Kantism.

tain, simple, and available basis for speculation, has led to assumptions and premature conclusions, which necessarily infect all subsequent deductions. It has warped, in various ways, the judgment of metaphysicians; it has induced them to exaggerate the importance of different elements in the philosophy of being and of mind; it has made them unduly subordinate, or reject others; it has thus given rise to different and conflicting schools: but, while it has established cognizable, though vague distinctions, it has rendered all systems imperfect, distorted, and more or less false. There can, accordingly, be no reasonable hope of any considerable improvement in our metaphysical science, until we re-examine, without favour or affection, and without theory or sect, the great fundamental problems of the human mind. It is this important labour that we would now commence, thinking our efforts well spent, if they only indicate the nature of the work to be done, and stimulate others to its prosecution.

To proceed, then, with the investigation. We have a direct apprehension of simple facts, whether by observation of phenomena without, or by consciousness of moods and changes within. These facts we combine, classify, analyze, generalize, and employ as the premises for our deductions, or our data for further inductions. For the external world, the senses furnish the channel by which our perceptions are in the first instance acquired; but they are perceived by the mind only according to the laws of the mind itself. The phenomenon perceived must receive its form from the faculty perceiving, before it can become a portion of our information.* The exciting agency may be external, but there is a necessary union with an internal determining agent; and it is the product of both which constitutes our elementary knowledge or perceptions. If, then, the special occasion or substance of our knowledge is derived from without, and its form is given from within, it is a necessary consequence that all the knowledge to which man can of himself attain, is merely relative to the human apprehension, and is limited by the processes of the human mind. In all speculation relating to the mind, the data are furnished either mediately or immediately by the consciousness, which, in this case, occupies the same position, and performs the same functions, as the senses do with respect to external phenomena. The data themselves, in both cases, though suggested in different modes, and conveyed through different channels, bear the same relation to the mind in its percipient capacity,

* To those who may not be aware of the flood of light which etymology can occasionally throw over the most recondite problems of metaphysics, we would recommend the study of Vico's "Sapienza Antica d'Italia."

and can in neither case transcend the limits imposed by the laws, conditions, and regular processes of the perceiving mind. The apprehension of facts in both cases takes place in due subordination to the processes of the apprehending agent; in neither case can we go beyond the product to the nice estimation of the objective and subjective factors which have co-operated in its production. The result, with the bare recognition of its dualistic origin, is the ultimate step in the analysis of mental phenomena, which it is in our power to accomplish: we know that this result is due to certain concurring causes; but we cannot separate these causes from each other, so as to consider them capable of independent action; nor can we explain their exact nature, or the precise modes of their action. We know, then, that, beyond the most recondite and elementary fact which philosophy explains, there is another fact which it recognises, but cannot explain. This latter fact, of which we are only conscious, is the great postulate on which all philosophy and knowledge must rest, though it has scarcely been as yet prominently regarded in this light. That it has been more or less distinctly apprehended by many, if not all schools, is evinced by the *indemonstrable principles* of Aristotle, the intuitions *à priori* of Kant, the fundamental *principles of belief* of the Scotch school, the *belief* of Jacobi, and the *consciousness* of Reinhold.

So far, however, we are only furnished with the simplest elements of knowledge, of which simple perceptions may be said to constitute the alphabet; and yet we have already recognised the existence of a fundamental, but inexplicable fact, which must affect all combinations and developments of those simple perceptions. When we proceed to combine or compare facts, in order to infer any consequence, the judgment is called into play, and reasoning begins. The same difficulty recurs in this operation of the mind as was experienced in the case of simple apprehension. To take the two propositions which are necessarily presupposed in all reasoning. If we say that the world has an existence independent of our perceptions, and of the forms of the reasoning process, where is the proof of this? Or, how can we prove the existence of the perceiving mind? Each of these dogmas is obviously beyond the range of proof. For, if the nature of the human mind limits us to the contemplation and explanation of the *tertium quid*, resulting from the combined influence of the percipient and the thing perceived, (the *αἴσθησις* and the *αἰσθητόν*,) the premises in any reasoning that we can institute, about these or any other topics, must necessarily involve a *petitio principii*, which will render nugatory any conclusion. Yet, even passing by this logical fallacy, the mind cannot go out of

itself—cannot transcend its own laws and conditions, which it needs must do if it could examine, with any prospect of a definite result, into the certainty, as established by logical proof, of the existence of either matter or mind. It will not suffice to say that we recognise their existence by our own consciousness—this does not explain the difficulty, nor does it even cut the Gordian knot, if we are aiming at proof. At best, it is offering a postulate instead of a proof, which, in this particular inquiry, would be inadmissible, when we profess to be seeking for a proof. But all that we are directly conscious of, is the product in the mind, and the processes of mind, which have preceded or accompany such recognition. But every step presupposes the existence, and the belief in the existence, of that mind whose existence is attempted to be proved. Thus we are ever proceeding in a vicious circle, from which escape is impossible. If we lay hold of the other horn of the dilemma, and endeavour to prove the existence of matter, we are entangled in a similar mesh. We have only to take a single step to involve ourselves in exactly the same labyrinth; for, as we cannot separate the action of the percipient from the influence of the thing perceived, nor contemplate a thing perceived without contemplating in the same act a thing perceiving, our first procedure must be to prove the existence of mind. The reciprocal implication of correlatives in the last sentence is not owing to any obscurity or imperfection of language, nor is it a play upon words, but it is the logical result of the necessary implication of interdependent ideas.

The impossibility of proving the existence of either matter or mind—the objective or the subjective element—may be exhibited in simpler terms, though they will still represent virtually the same argument. Is it not the grossest of all fallacies to dream of proving the existence of that mind whose continuous agency we employ in the attempt either to prove or disprove its existence? And is it not an equally gross fallacy to think of proving the existence of matter, when matter, whether it be substantial or phenomenal, is the subject of cognition only so far as it is capable of apprehension by the mind?

In what we have said, it will be perceived that we do not touch the question of the essence of either matter or mind. Mind may be material, or matter phenomenal—a *camera obscura* fitted up in the mind—and our remarks are still equally applicable; for, whatever may be our estimate of the nature of either, there is a wide distinction between the thinking agent in its act of perceiving or reasoning, and the object which is perceived and reasoned about, when it does not reason only about itself.

This distinction is the only antagonism required by our remarks.

But, however impossible it may be to prove, and chimerical to attempt to prove, the existence of mind or matter, we are, nevertheless, convinced of their existence—convinced in spite of argument, without proof, and independent of all reflection. They are ultimate facts, which we cannot help believing, but which are too mysterious and enigmatic to admit of any full solution.

Now, both of these facts are, as we have seen, necessarily involved in all reasoning, of whatever kind it may be, and to whatever subjects it may be applied. They are postulates, which even those who refuse to recognise them, cannot avoid virtually adopting. This is sufficiently evident in regard to mind, and that, we have already shown, cannot be separated from the recognition of the existence of matter also. But without recurring to this position, we cannot prove the possibility of a reasoning mind except in connexion with a living body, and this body is existent matter, whatever matter may be defined to be. We would again repeat what we have so recently observed, that we do not here determine anything in regard to the essential nature of matter and mind, but regard them simply as two things converse or correlative to each other; and this is indeed all that, in any systematic scheme of philosophy, they can legitimately signify. As such they must, and do exist; but as anything else, they are merely the products of conjecture. Under this limitation, the existence of matter is as fully recognised in the philosophy of Berkeley as in that of Cabanis and Broussais; and the existence of mind is in reality no more denied by them than it was by him. This, indeed, would be a startling paradox to those philosophers themselves, for the negation of the one or the other was the contemplated scope of their respective systems; but they deceived themselves, like so many others who have written or thought upon such subjects, into the belief that they were contending about genera, when the whole disputation was in truth limited to the discussion of specific differences.

We have now shown that the existence of mind and the existence of matter are postulates—truths firmly believed, incapable of rational negation, because their denial would render all reasoning, even that latent reasoning on which action proceeds, impossible—but incapable also of proof. We have, furthermore, seen that the co-operation, or the mode of co-operation rather, of the percipient and the thing perceived, in the production of a perception, is in a great measure insoluble; and that the verity of our perceptions must in consequence be another postulate. Nor should the intro-

duction of postulates into the theory of human knowledge and mental operations be a matter of surprise. For if all reasoning be, as Aristotle says, and as every one must admit, from the better known to the less known,* then either the human capacity of knowledge must be absolutely without limit, and the human mind consequently unlimited in its range also, or we must necessarily, at some point of our investigations, encounter some fact which cannot be better known, and which, therefore, must be incapable of receiving proof.† Hence arises the truth of the sententious and sagacious maxim of Theophrastus, so often pressed by Aristotle, *ἁπάντων ζητοῦντες λόγον ἀναιροῦσι λόγον*,‡ (they annihilate all reasoning, who would have a reason for everything.) In all knowledge, such postulates are to be expected; they may be so plain as to be received without suspicion, or so remote as to excite neither observation nor inquiry; they may be precisely expressed, or covertly assumed, but they are always necessary. In many sciences, a needless and tedious chain of truisms may be cut short by the adoption of postulates dependent at a long interval upon those which necessity would impose; and, again, the postulates of one age may be refuted as such, and referred to higher principles, by the more efficacious investigation of a succeeding generation. But in the science of metaphysics, and also in the narrower science of the human mind, (as understood by the Scotch school,) the same facts are submitted to the notice of every one who reflects upon the subject—the difference between individual philosophers consists principally in the more or less accurate observation of those facts, and the caution with which they are analyzed and combined. In this science, the first principles are those which must be first discovered and first established; and it is from them we reason: there is but little room thenceforward for induction. We may in consequence anticipate, that whenever the use of postulates may be avowedly and generally received in metaphysical speculation, and once carefully established, there will be need of only trivial modifications thereafter.

As, however, it may seem alien to the genius of modern science, and especially to the spirit of the Baconian philosophy, to intro-

* Aristot. Analyt. Post., lib. i, c. i, p. 71, a. 1. It is a doctrine frequently urged by Aristotle.

† Aristot. Metaph., iii, c. 4, p. 1006, a. 8, and Alex. Aphrod. Schol. Metaph., vi, c. 17, 1041, b. 9, &c.

‡ Theophrast. Metaph., c. 5. The same maxim is, however, constantly repeated in equivalent terms by Aristotle himself, Metaph., x, c. 6, p. 1063, b. 10; c. 5, p. 1062, a. 2; iii, c. 4, p. 1006, a. 8; Analyt. Post. i, c. 2, pp. 71, 72; Alex. Aphrod. Schol., p. 527, b. 26, p. 525, a. 20, p. 592, b. 31, p. 605, a. 42, p. 653; Asclep. Schol., p. 599; Ammonius, p. 519.

duce postulates even into metaphysics; and still more especially as the philosophy of Bacon has been hitherto studied usually in a one-sided and partial manner, and has rarely been received in its full comprehensiveness, we will, even at the expense of a slight delay, insert a notable, though too little noted passage, from Lord Bacon himself, bearing directly on this subject:—

"Wherefore, whatever primitive matter is, together with its influence and action, it is sui generis, and admits of no definition drawn from perception, and is to be taken just as it is found, and not to be judged of from any preconceived idea. For the mode of it, if it is given to us to know it, cannot be judged of by means of its cause, seeing that it is, next to God, the cause of causes, itself without cause. For there is a certain real limit of causes in nature, and it would argue levity and inexperience in a philosopher to require or imagine a cause for the last and positive power and law of nature, as much as it would not to demand a cause in those that are subordinate.

"On this account the ancients have fabled Cupid to be without a parent, that is, without a cause. And they did so not without design. Nay, perhaps there is not anything more important; for nothing has more corrupted philosophy than the seeking after the parents of Cupid; I mean, that philosophers have not received and embraced the elements of things as they are found in nature, as a certain fixed and positive doctrine, and as it were by an experimental trust in them, (tamquam fide experimentali;) but have rather deduced them from the laws of words, and from dialectics, and slight mathematical conclusions, and common notions and similar wanderings of the mind beyond the bounds of nature."*

To proceed, however, with our investigation. It is ordinarily said, that in reasoning we perceive agreement or disagreement between the two terms compared: but the question instantly presents itself, whence do we arrive at this recognition of agreement or disagreement? Whence comes the conviction that the supposed agreement or disagreement is not merely delusive or false? Or in simpler terms, whence arises our conviction of the identity of equivalent propositions? We may call the faculty, by which the result of the comparison is determined, the judgment; but this brings us no nearer the desired solution, it can "teach nothing but to name our tools." But how does the perception of agreement or disagreement take place, and how does it produce conviction? Grant that the perception and conviction are indissolubly connected, or even that they are identical, still the difficulty remains unsolved—*quæ esset conclusi argumenti fides?* †—What is conviction? What is certitude? And whence do they arise? We are able to arrive at certainty sufficient, if not

* Bacon, Fable of Cupid. Bacon's Works. Ed. B. Montagu, vol. xv, p. 45. The original Latin, vol. xi, p. 99, is much more precisely and appositely expressed. Compare with Bacon, Aristotle and his Scholiasts cited in the preceding note. Plato, Timæus, p. 17. Des Cartes, ap. Morell, p. 117. Spinoza, ibid. p. 125. Jacobi, ibid., p. 597. Leibnitz, Op. tom. i, pp. cxliv, clxi.

† Cicero. Acad. Prior. lib. ii, c. ix, § 27.

for our full intellectual satisfaction, at least for our wants; and we do entertain convictions, whether we admit or deny their theoretical validity. Here then is another ultimate fact, which lies beyond the range of metaphysical solution, and which, if recognised at all—and it cannot be denied by any man of sane mind—must be received as a postulate.

In simple apprehension or perception, then, (we do not intend to confound these phrases,) there are two postulates involved in every explication of the phenomena of this intelligible world which the mind of man can offer. Hence the terms of our simplest propositions are incapable of a merely rational explanation; that is to say, an explanation fully comprehended by the reason, and falling entirely within the limits of its sphere. In judgment, another postulate must be admitted—that of the practical certainty of human judgment,—and consequently our propositions are removed still further beyond the absolute empire of the reason. In our syllogisms* a like postulate again recurs. In all our logic and reasoning, therefore, there is something beyond the grasp of human reason which constitutes the basis of our certitude and knowledge, and which, if we refuse to recognize it as such, must render all our reasoning invalid, and in either case exhibit the fallacy of the position of Protagoras, that "man is the measure of all things," so constantly repeated in our own day by the followers of Fichte, Hegel, Schelling, &c., who measure all things by the human mind, and educe an episodical creation out of the development of its processes.†

Let it not be objected to our remarks, that convictions are not always well-founded; that the certainty supposed to attach to particular propositions may be completely negatived by future discovery or reflection; and that it is a thing therefore relative to the evidence. To these it might be answered, that the strongest convictions are frequently those least supported by evidence: but we are not now considering the correct or the incorrect influence of certainty, nor in what cases it may be legitimately entertained; we are not treating of the subject-matter of certainty, but of the state of mind which is so denominated, or the faculty by which it is apprehended. This exists independent of the inherent truth or falsehood of the proposi-

* We make no distinction here between inductive and deductive reasoning. Mr. Mill, in a very ingenious discussion and analysis, (Logic, b. ii, c. iii,) has attempted to prove the syllogism a form of induction; it would be a much easier task to prove the opposite; but this is not the place for such a disquisition.

† Aristotle justly says of the Pythagoreans and Platonists, *ἐπεισοδιώδη τὴν τοῦ παντὸς οὐσίαν ποιοῦσιν.* Metaph, xi, c. 10, p. 1076, a. 1; and again, *οὐκ ἔοικε δ' ἡ φύσις ἐπεισοδιώδης οὖσα ἐκ τῶν φαινομένων, ὥσπερ μοχθηρὰ τραγῳδία,* xiii, c. 3, p. 1090, b. 19.

tions of which certainty is predicated, and may be equally evinced in either contingency. When Juvenal remarked satirically that a virtuous woman at Rome was

Rara avis in terris, nigroque simillima cygno,

he firmly believed that no such bird existed as a black swan. His conviction and his certitude were not impaired by the discovery of black swans in abundance, more than sixteen hundred years after his death. That we at one time have a perfect assurance of the truth of propositions or conclusions, which after experience leads us with as firm a conviction to deny, is a necessary result of the gradual acquisition of all knowledge, and the inevitable fallibility of man. The subject-matter may be imperfectly apprehended; it may be seen in a false or insufficient light; or our data may be deficient in extent, without our being conscious of such deficiency; but the mind performs a definite act, which is in all cases the same, when it entertains certainty in regard to any proposition or conclusion whatever. It cannot do otherwise. But unite in the production of one result two elements, one of which is uniform and constant, and the other varying, imperfect, and deceptive, and the result will be varying and deceptive too. Put gold, or silver, or copper, or lead under the die of a coining machine, and you get coins of these different metals, differing in value, matter, and appearance, but the same identical act has been performed by the hammer and the die in each case, and the same impression has been left. In the same way, the fallibility of the proposition of which we may be assured, does not affect the character of that state or operation of the mind, which we call certainty. How it is arrived at we are unable to explain:—we may readily point out the sequences which constitute the exciting cause or the occasion; we can even discover the prerequisite conditions; but the determining cause, or the nature of the act, is beyond our solution.

It is perfectly preposterous that the mind should be conceived to be perfectly competent to understand its own entire nature. There are primordial facts under which the *understanding* must be content to stand, to which it must be subordinate. These, if we choose, we may assign, like Kant, to a new and distinct sphere, the sphere of the pure reason; but we do not render them more intelligible by thus giving them "a local habitation and a name." They occupy the same relation to our knowledge, whether we attribute them to a distinct faculty, or leave their attribution indefinite. In either case, they equally form the remote premises, which are obviously or latently assumed in all our actual or possible reasoning. We are

consequently compelled in every investigation into the truth or certainty of human knowledge to go back to an inexplicable property pertaining to the human mind, which is in all cases the foundation of our convictions. It is true that certainty, as appertaining to merely human speculation, is hereby rendered relative to human apprehension and experience, including, however, under the latter term both objective and subjective experience: but, indeed, what reason could there be for supposing that a finite being could be competent to the attainment of anything but finite and relative knowledge; or what need is there that he should be capable of acquiring knowledge other than what is relative to his own finite condition? Nay, further, what possibility is there of forming any definite conception of the capacity of man for the reception of any knowledge which is not purely relative to his own nature as a practical and acting being, and to his own destiny as consequent upon his actions? The knowledge of man is proportioned to the wants of man, and neither does it transcend them, nor can it be consistently imagined to do so.

But, having recognised the grounds of the certainty of our knowledge in an ultimate, inexplicable fact, we are not at liberty to assume that all our supposed knowledge is thereby rendered absolutely certain; nor, on account of its relative character, are we necessarily to limit ourselves to the recognition of the phenomenal alone. The first procedure would authorize and sanctify all the vague reveries of dreamers and mystics, founded upon any assumption or conjecture from which they might be pleased to set out, provided the belief in its truth were, in the first instance, fortified by the fanaticism of ignorance, or the blind bigotry of uninquiring enthusiasm. The latter would negative everything that might not be capable of strict logical proof from directly observed facts, while at the same time it would render that logic itself invalid. The former would furnish an impregnable basis, though no ground of conciliation or agreement, for all forms of Mysticism and Idealism; the latter an equally strong foundation for Sensationalism or Positivism. In the one case we assume the absolute, the infinite, the immaterial; in the other, we deny, or at least ignore, the real in the world of matter and of mind. The history of philosophy teaches us that such has been the genetic origin and development of the various conflicting metaphysical systems, since the first rise of ontological and psychological speculation.

It is somewhat singular that men should not have reflected more maturely and soberly upon the nature and import of such notions and terms, as the infinite, the absolute, the unconditional, the necessary, the immaterial, &c. These are all negative in meaning and in form; they convey only negative ideas, from which no affirmative conclu-

sions can be drawn. The infinite is contradistinguished from the finite—the absolute opposed to the dependent—the immaterial merely the negation of the material.* Of the same character, though affirmative in form, are the universal and the eternal, in their usual metaphysical acceptation. The infinite, so far as it conveys any precisely assignable meaning, signifies only the indefinite, denying the existence of recognized or cognizable limits, but certainly not conveying any more tangible or positive idea. All terms and all propositions present themselves to our minds in a binary combination, to which, if we are Eclectics, and adopt the categories of Cousin, we may add as a third element, the relation between the two interdependent terms. This axiom is of a fundamental character in logic; and if we neglect it, we are in danger of substituting the *norma loquendi* for the *norma sentiendi*.† Cousin's derivation of his two primitive ideas of action and being, with the twin scales of their dependent categories, and the whole reasoning with which Mr. Morell follows in the footsteps of his master, is founded upon a misconception of the habitual logical distinction to which we refer. The consequence is, that the superstructure of a system of universal metaphysics, attempted to be raised upon the basis, stands upon defective, because unequal, props. The logical distinction is the interdependent opposition of the two terms incident to the necessary dualism of all conception or predication. The mental apprehension or expression of any one simple idea, necessarily, by the act of segregation or exclusion, implies the co-incident apprehension of its converse or opposite. It divides the intelligible universe into two parts; one of which is the term conceived or expressed, the other, all which is not this. Thus, the apprehension of what is (*τί ὄν*) involves also the recognition of what is not, (*τί μὴ ὄν*,) and does this by an act of exclusion inseparable from the act of apprehension itself.‡ But both

* The doctrine laid down above is assigned to Hobbes by Morell, p. 75, but it may be equally said to be the doctrine of Leibnitz and Aristotle. "Definitio illa, quod spiritus sit substantia immaterialis, dicit tantum quid non sit, non quid sit." Ep. i, ad Loeflerum. Leibn, Op. tom. i, p. 17. Aristot. Metaph. iv, c. 15, p. 1021, a. 25, x. c. 10, p. 1066, b. 11. To them we may add Locke, b. ii, c. xvii. To all such binary ideas we may apply the words of Aristotle: Ἄμφω δὲ λεκτά, ὅπως διανοητά, De Zenone, p. 978, a. 28, as the distinction from which they arise is purely a logical one, and the negative term a purely logical creation.

† Hæc omnia sunt loquendi potius quam sentiendi principia. Leibnitz, ad Mar. Nizolium. Op. tom. iv, p. 64.

‡ See the writers on Logic, and Aristot. Metaph., iii, c. 2, p. 1004, a. 15, b. 27, c. 7, p. 1012, a. 2, and Alex. Aphrod. Schol. ad loc. Metaph. viii, c. 1, p. 1046, a. 29. See also De Morgan's Formal Logic, c. ii: yet we cannot altogether assent to him, "that it is an accident of language whether a proposition is universal or particular, positive or negative," p. 40.

of these terms are not equally comprehensible, nor do they give rise to similar conceptions; for of these interdependent pairs the existence of only one and the temporary rejection of the other can alone result from the act of expression or apprehension. Consequently, it is barely valid to assume one of the two, that which is affirmative in sense, as furnishing a basis of actual fact for the structure of a philosophy; but it is perfectly illogical to assume the negative term also for this purpose. The positive term alone is comprehensible; the negative, from its latitude, variety, and indefiniteness, not so. "That which is crooked cannot be made straight, and that which is wanting cannot be numbered." If we may use an algebraic illustration, (and we are not unaware what fallacies and affectations are frequently latent in such illustrations,) we may say that x representing the intelligible universe, or the universe of ideas, and a the particular term apprehended, x will be divided by the apprehension of a into a and $x—a$. Of these two parts a is comprehensible, $x—a$ incomprehensible until the value of x can be appreciated and definitely understood—which it never can be, as it obviously transcends the range of human capacity. But the finite, the conditional, the material, the general, fall under the category of a; their opposites, the infinite, the unconditional, the immaterial, the universal, &c., under the category of $x—a$: consequently all propositions about the second class of ideas are, like those ideas themselves, utterly vague, and without distinct significance, except in so far as they sever certain classes of ideas from the possibility of clear apprehension by the human intellect. Their very names refer us merely to the negation of all that we can conceive of the properties of being—and we cannot assign properties to an object of whose very existence, except as a negation, we cannot by possibility know anything. But though we cannot interpret these terms, and are not justified in assuming the indefinite in any of its forms as the basis of a definite system, we are not at liberty to cashier them altogether. Because $x—a$ may be incapable of valuation, we have no right to strike it out of the equation, and treat a as equal to x; yet this is exactly the process which has been adopted by M. Comte, and that school of which he is the founder and the noblest and ablest representative. Fichte and Hegel endeavoured to develope the value of $x—a$ from an assumed value of x: Schelling, from a similar assumption, attempts to evolve the value of a, which, to some extent is given, and has promised to evolve that of $x—a$: the Scotch school assumes the value of $x—a$; and the Eclectics propose to borrow the interpretation of $x—a$ from the Idealists, and that of a from the Sensationalists, to reconcile both, and to constitute a positive system out of values which reciprocally exclude each other. For,

if the Idealists have overleapt the barriers of nature by assigning a positive character to the vague and incomprehensible, the Sensationalists have left the track as far on the other side by giving an exclusive character to the positive and comprehensible. Both have erred from the same fallacy—the old sophism of Protagoras—the assumption that the human mind is the measure of the universe, and not merely the measure of that fragmentary knowledge of the universe of which it is capable. The one school has pretended to stamp with a cognizable reality, and to define by sharp outlines, the vague and dreamy conceptions which float like irresolvable nebulæ before the mind; the other has denied any existence to these shadowy forms of human apprehension, and has excluded them from the domain of philosophy, as being merely the ignes fatui of the distempered imagination. The one has, by distortions and illusions, drawn within its circle, or fancied that it has done so, much which legitimately lies beyond it; the other has cut itself loose from and ignored everything which does not fall within the sweep of its sensible horizon. From this original diversity in regard to the estimate of the canon by which the intelligible world is measured, follows naturally the diversity in the estimate of the universe which is measured thereby.

In our explanation of these ultimate operations of the human mind, we are conscious of not having expressed ourselves with that perspicuity and precision which the subject merited. We have, indeed, intentionally avoided, as far as possible, the employment of technical phraseology, but we have not attained fully that distinctness of utterance at which we aimed. Like Kant, we make a candid confession of our failure, and only offer as our excuse the apology of Aristotle, *in pari materia*, *περὶ τούτων ἁπάντων οὐ μόνον χαλεπὸν τὸ εὐπορῆσαι τῆς ἀληθείας, ἀλλ' οὐδὲ τὸ διαπορῆσαι τῷ λόγῳ ῥᾴδιον καλῶς.**

From what has been said it will be evident that human knowledge, such as it is, contains, inseparably blended together, two elements, the comprehensible and the incomprehensible, the definite and the vague. We cannot dispense with either element, though they respectively enter into different branches of knowledge in very dissimilar proportions. It has also been seen that there are certain inexplicable facts, anterior to the possibility of reasoning, and consequently involved in every act of reasoning, which form the first principles of human knowledge. We will endeavour to apply these important truths to the different departments of human knowledge, so as to determine the nature and the degree of that certainty which is attached to each.

* Aristot. Metaph., ii, c. i, p. 996, a. 15.

In all strict scientific knowledge—that is, in all knowledge which is dependent upon proof, and for which the human mind collects its own materials, and constitutes itself the sole judge and arbiter of their truth and application—we are bound to limit the materials which we may assume as data for reasoning entirely to observed phenomena. This is the stadium to which the human mind, when relying upon its own resources, is confined in its search after dogmatic truth. We must recognise, however, the dependence of even these materials upon real existent causes as an undoubted fact, received as such in consequence of our own internal conviction—a conviction which is universal among all men sufficiently civilized to reflect methodically on such subjects, and tacitly or virtually admitted even by those philosophers who first obscure its recognition by the darkness in which they envelop themselves, and then deny it. This belief in the real existence of causes only lies below our knowledge, as the safe-guard against unending scepticism. It may be an assumption—relatively to the explanation of our reasoning processes it is so; but if so, it is an involuntary one, and a necessary condition for all action and reasoning. We cannot, however, adopt it as a legitimate premiss in our scientific reasoning, for we only know that it is so; we cannot prove it to be so, nor explain how it is so. We cannot say that we have observed it, though we are conscious of analogies to confirm it: but we cannot deny it; for, if it were not so, we could neither reason nor act at all. Our business is to determine how far it is presupposed and ought to be recognised in all speculation—to limit its application within the legitimate boundaries—and to draw clearly the line of demarcation between this practical faith in realities, which we cannot prove either by reason or reasoning, and the phenomenal character of all subsequent knowledge resting upon this basis, which is attainable by those processes of the human mind which are subjected to our examination. A philosopher, indeed, would not be very far wide of the truth, if he were to say that all the great intellectual requirements of the age might be summed up in the desideratum of a satisfactory theory of practical and scientific limitations. For, if the main question in metaphysics must always be the question of method, the question whose solution is most important in the present day, in order to arrive at a correct method, is the question of limitations—the determination of the actual range of the human faculties by legitimate induction, and the horizon beyond which the mind cannot extend its view—the establishment of the character and degree of its dependence in reasoning upon truths not subjected to its analysis—the discovery of the degree of certainty afforded to scientific knowledge by the inexplicable postu-

lates of metaphysical philosophy—and also the degree of uncertainty attached to all such knowledge by the phenomenal character of the materials with which reason is principally conversant. These points, however, we are compelled to leave almost untouched at present, in order to arrive at those more immediately pressing questions on account of which this inquiry was mainly undertaken.

We would only remark here, that, in what we have hitherto said, we have not pretended to form a catalogue of the fundamental and inexplicable facts which are involved in, and presupposed by, all reasoning. It has been our desire to show that there were such facts; and those which we have mentioned, have been specified only as examples where illustration was required.

It would appear, then, that faith, belief, conviction—call it by any of these names, but a principle which is "the evidence of things not seen"—lies at the very foundation of all reasoning, and is necessarily presupposed in all reasoning, which without it would be impossible. This existence of reason, based upon faith, in the mind, above and beyond reasoning, and wholly beyond the range of demonstration, we have shown to be incidentally recognised by Aristotle and many other philosophers, and it is strikingly confirmed by the analogy of instinct in animals. Give what philosophic interpretation you please to the term instinct; let it be an inferior order of reason—a less pure or direct emanation of Deity—a mere phenomenon of the development of the universal and essential thought—or simply a mechanical obedience to a sensational excitement, the analogy remains undisturbed. As the main spring in our perceptions of truth, and the impulse in the actions of the brute creation, there is an inexplicable faculty, whose operations are spontaneous, lying beyond the sphere of explanation by reason. We recognise it as a fact—as a cause; we cannot mount above it to explain its nature, detect its origin, or bring it within the circle of human comprehension. It is an ἀρχή—a first principle—a postulate; or, in the still happier language of Lord Herbert of Cherbury, it is in both cases a *rationalis instinctus*.

If we adopt any system of metaphysics whatever, and trace back the sequences and concatenation of its doctrines to first principles, we are certain to be brought ultimately to the recognition of this fundamental fact. In physical science its potency and presence, though efficaciously involved, are rarely recognised, because rarely required in the details. In ethical science, whose subject is the spiritual nature of man, we may close our eyes wilfully against its admission, but its rejection will produce fallacies, at some stage or other of our reasoning, which cannot be solved without its aid. In

our daily practice it is of constant efficacy; we cannot take a single step in thought, speech, or action, without the co-operation of its latent but vital power. Our whole doctrine, then, on these points, may be summed up in two expressions, one from the New and the other from the Old Testament: the declaration of St. Paul, "We walk by faith, not by sight;" and the language of Elihu, in Job, "There is a spirit in man, and the inspiration of the Almighty giveth them understanding."

So far we may be thought to have done little more than combine together the doctrines of Kant and Jacobi; but we think we escape the objections which have been made to their metaphysics by a further step, which we cannot help regarding as an important advance. If faith be the remote foundation of all scientific knowledge, as it is the proximate ground of all practical thought and action, Christianity, or religion in general, claims our assent by an appeal to exactly the same principle in human nature, which is the necessary condition of all reasoning and knowledge. The revelation is recognised as divine by the human faculty of faith, which admits of no further philosophical interpretation; but all our first principles are received in virtue of the same faculty. Once admitted as the direct message of God, the separate doctrines are entitled to and receive a readier, a firmer, and an easier credence, than the conclusions which we painfully elaborate for ourselves, by building the materials of fallible observation and fallible reasoning on the basis of a faith, of whose nature and origin we are as ignorant, or even more ignorant, in science than in religion. It follows, however, as a corollary, that, as religion is principally addressed to, and received by this faith, it does not constitute a legitimate subject for the plastic manipulations of human speculation, in the same sense or in the same degree with scientific or practical doctrines.

We conceive that it is only by the firm recognition of these or equivalent principles, and by the adoption of that scheme of metaphysical interpretation of the nature and origin of the certitude of human knowledge which thence results, that we can logically admit the belief in Christianity within the circle of our accredited truths. Theologians, philosophers, and men of science in our day agree in allowing a discrepance between religious truth and scientific truth. If this discrepance be not disproved, and a valid ground of conciliation be not discovered, it is easy to see that religion must yield to science, backed as the latter is by the pride of intellect, the seductions of interest, and the perverse tendencies of the human heart. But, as faith in some truths which science cannot master or explain, but without which science cannot exist, is the great fundamental fact

both of metaphysics and philosophy, and the necessary substratum of all our knowledge of what kind soever, it is in perfect harmony with this law of the human mind, that an inexplicable religious faith should exist spontaneously in the minds of men, to be called into action, like all our other mental faculties, whenever submitted to the agency of the due exciting causes, under appropriate conditions; that it should be competent to recognise the divine truth of revelation, receive with implicit belief the truths of Christianity, without the evidence of adequate logical proof, and in a degree not to be established by rationalistic demonstration; and that it should embrace the promises of the Gospel in consequence of that higher, more mysterious, and more potent evidence within, which is inwoven into our whole mental and moral nature, but which we cannot interpret further than to refer it to the will of God, though we cannot deny and can scarcely misapprehend its vital potentiality.

We have not the time, if we had the inclination, to develop these views into a system of philosophic theology. But we contemplate no such result; as system, on the principles which we have laid down, is a fallacy in religion, inasmuch as it must be the grossest of all fallacies to attempt to reduce within the limits of a system, which by its nature is limited to the range of the human mind and rational explanation, truths which we recognise as lying beyond the sphere of human interpretation. Method is all that we could pretend to establish; but we have only time to sow the seeds which may germinate and fructify in others. We regret, indeed, being compelled to renounce our design of showing how far and how fully a method proceeding from the principles above established would harmonize equally with the requirements of religion and the conditions of reason; and still more do we regret that the want of space prevents us from answering, in advance, those objections to our views which they might themselves suggest to a hasty and superficial appreciation.

According to all other explanations of the nature and certainty of human knowledge, it seems to us that Christianity can only be received by the negation of the supposed ordinary conditions of scientific truth,* hence illogically: or, on logical grounds, by the negation of the religious principle of a supersensuous faith; though, in this case, the evidence is inadequate to support the conclusion, and is therefore in reality invalid, however skilfully or effectually the fallacy may be disguised. The former process was adopted by the Catholic commentators on Newton's Principia, who professed to receive the Papal decrees *contra Telluris motum*, and is still followed by many of our

* This Strauss sees and constantly urges. Pt. i, c. i, § 18, vol. i, p. 112; § 150, vol. iii, p. 432, Life of Jesus.

orthodox evangelical divines. The latter is the hazardous course attempted to be pursued systematically by the German Rationalists,—a course which, under the influence of the Hegelian metaphysics, has resulted in the mythical idealism of Strauss, the shadowy transcendentalism of Morell, and the equivocal doctrine of Saisset. There is, indeed, one more alternative—the negation of Christianity *in toto*, because contrary to the spirit and methods of both science and philosophy; and this, it is much to be feared, has become the general, though often concealed, practice of the present day. This is the avowed creed of Comte, and virtually the standing-point of Strauss also: and further, it is the strict logical result of the attempt to reason either from supposed absolute, universal, and necessary truths, or from the hypothesis of the limitation of all admissible knowledge to the recognition of phenomena, and the explanation of merely phenomenal laws. M. Comte has indeed committed a gross philosophical and pernicious practical error in asserting (as a retort upon the theologians of every age) the absolute incompatibility of science and religion, and therefore denying the latter; but he has been driven into this untenable and lamentable position by refuting, from the opposite metaphysical extreme, the fallacy of those who would utterly dissever and dissociate the laws of man's moral and intellectual nature.

If there be an impassable chasm between religious faith and scientific knowledge, religion must ultimately be the sacrifice. The task in our day, therefore, becomes nearly identical with that which Leibnitz proposed to himself as a propædeutic to his Théodicée:* to reconcile reason with religion; to show the essential analogy, notwithstanding a formal difference, between the two; and to establish such a method of metaphysical speculation as, being true in itself, shall restore to science a valid and real basis under a phenomenal vesture—to mental and moral philosophy, fixed and indisputable principles; and, while doing this, shall also absorb the truth of all former metaphysical systems, illustrating while abandoning their errors, and furnish a satisfactory refutation at once to the positivism of Comte, and the transcendental mythicism of Strauss. *Hoc opus, hic labor est:* this is one of the great tasks of the present generation, perhaps the greatest. "Le premier et le plus grand soin de la philosophie," says Kant, "est de tarir une fois pour toutes, les sources de l'erreur, et de lui enlever ainsi toute son influence pernicieuse:" and thus only, so far as we can see, can it be done. Unless this solution can be satisfactorily achieved, reason must remain, in our metaphysical, moral, and scientific speculations, such as it was de-

* Dissertatio De Conformitate Fidei cum Ratione. Leibn. Op., tom. i, pp. 60–116.

clared to be by Bayle—the instrument merely of destruction and annihilation.* The objections of Bayle were certainly not answered by Leibnitz; nor can they be answered, unless we are willing to recognise (which reason will enable us to do) the existence of the fundamental principles of reasoning, beyond the scope of demonstration, and the necessary and indissoluble dependence of reason itself upon something higher than itself. It is true that this recognition appears to be a profession of ignorance at the outset of our knowledge—yet it is merely ignorance of demonstration; but we should be willing to say, with that universal scholar, J. J. Scaliger,—

> "Nescire velle, quæ magister optimus
> Docere non vult, erudita inscitia est;"

or with Cicero, "Nec me pudet fateri nescire, quod nesciam." Indeed, that ignorance is the beginning and end of our knowledge, has been the common-place of philosophers, from Socrates to Coleridge.†

One of the first things to be done is to admit our inability to demonstrate first principles and truths which lie beyond the legitimate range of demonstration. We must forego the amusement of attempting to solve that *crux metaphysicorum*—the demonstration of the being and attributes of God, and the revealed truths of the Christian faith. What need could there have been of a revelation to make these things known, if they fall within the scope of human demonstration? We may learn wisdom from an enemy, especially from one so sagacious, so profound, and so sincere as Comte. "Natural theology," says he, "is the beginning of Atheism."‡ It may be used as an illustration or confirmation of doctrines already received from revelation; it cannot be employed as a substitute for it, without endangering the whole edifice. We think we could show, to the satisfaction of all candid minds, that every attempt to demonstrate the being of God (independent of revelation) involves a *petitio principii*,

* Bælius constanter in suo Dictionario, quotiescumque ita fert argumentum, adserit, Rationem nostram refutando magis et destruendo, quam probando atque ædificando, idoneum esse, &c. Cit. Leibn. De Conf. Fid. Cum. Rat., § 80. We think we have met the requisitions prescribed by Bayle for the reconciliation of religion and reason. Ut rationem cum religione conciliasse te evincas, ostendendum non modo, præsto esse axiomata philosophica, quæ Fidei nostræ favent, sed etiam axiomata illa particularia, quæ tamquam Catechismo nostro parum consona, nobis objiciuntur, reapse illi consonare ratione quadam distincte concepta. Cit. ibid., § 77. Op. tom. i, p. iii.

† The celebrated aphorism of Coleridge, "In wonder (i. e. ignorance) all philosophy began, &c.," is found in Plato, Aristotle, Porphyry, Bacon, &c.

‡ Comte, Cours de Phil. Pos., tom. iv, p. 77. Mr. Morell's arguments are utterly invalid; vide North Brit. Rev., Feb. 1847, Art. i, p. 169, by Dr. Chalmers.

which ultimately insures the overthrow of the argument and the consequent deductions. Our narrow limits forbid the insertion here of the analysis and refutation of the celebrated *à priori* demonstration of the being of God by Des Cartes and Clarke, which we had written out. We can only call attention to the fact that the Pantheism of Spinoza is necessarily involved in the ontological and psychological arguments for the existence of God, which form the fundamental principles of Des Cartes.*

If a clear idea is necessarily a true one, and the idea of God, and of his self-existent essence, the clearest we can entertain, it is necessarily an exclusive one; and whatever extent, modification, or significance may be given to the term God, by the clear apprehension of individual reason, or individual fantasy, will be the legitimate representation of the facts of absolute existence. These two principles, earnestly entertained, and logically developed, lead directly to Spinozism. Nor can we regard the pre-established harmony of Leibnitz—with its attendant doctrines, the *vis viva*, monadology, and the identity of indiscernibles—as anything else than disguised, mutilated, and illogical Spinozism. The *vis viva* of Leibnitz was merely a modification of the *vis creatrix* of Des Cartes; and the pre-established harmony itself simply a curtailment of Spinoza's twin-attributes of being or substance, thought and extension. In all such cases,—as in all strictly developed systems of metaphysics, (though most strikingly exemplified by Fichte, Hegel, Schelling, and Oken,) elaborated by the human mind, as the *ultimus arbiter sententiarum*, without recognising its own dependence upon revelation, inspiration, and an unexplained concurrent in the production of thought,—God and the universe are necessarily reduced to the dreamy creations and impalpable phenomena of our own minds. Such, we think, is the result to which modern systems of metaphysics have manifestly come; and their condition may perhaps reflect back some light upon the theory we have been attempting to explain. In philosophy, as in religion, we have no firm ground to stand upon, unless we recognise the dependence of the human mind on higher inspiration than its own; without this, it is borne about to and fro, "dubitans, circumspectans, hæsitans, multa adversa reverens, tamquam in rate in mari immenso."†

To return from this application of our principles to theology. M. Comte, as the representative of the Positive school, regards all our science as nothing more than the co-ordination of observed facts by theories, expressed under the form of definite laws; which

* See the argument of Des Cartes in Morell, pp. 118, 119.

† Cic. Tusc. Disp., lib. i, c. xxx, § 73.

laws, however, indicate merely the co-existence, antecedence, or sequence of phenomena.* Hence, the object of science and systematic philosophy must be to lay down rigorously these laws, which are to be received as the formal links of observed correlation, but are not to be received as the series of genetic causation. With this, science has nothing to do.† The regular recurrence of the phenomena, in all departments of observation, is a preliminary assumption requisite to the constitution of a body of science;‡ but this assumption daily receives new confirmation as our knowledge expands. So far we agree with M. Comte; and think that he has rendered valuable service to the cause of science by laying down stringently and precisely the barrier which it cannot hope to pass. We limit our agreement, however, merely to strict systematic science and philosophy; for his explanation indicates truly their limits, but without touching the fundamental doctrines on which they rest. Beyond these confines, however, lies the vague region of things cognizable, though neither explicable nor comprehensible; those primitive convictions, which we cannot trace to their sources, because they constitute the original, underivative cognitions of the human mind, and the basis of all possible reasoning. Their truth (relatively to humanity) we always admit by implication in our action; and we are bound to recognise them also in our explication of the processes of thought, if we would not destroy the possibility of even our phenomenal, though systematic, science. We are bound, then, to recognise the validity of assumptions, which our science does not, and cannot explain, but without whose recognition our science cannot be constructed, nor advance a single step. Science confesses their necessity, and sanctions them by requiring their aid as the indispensable basis of all scientific interpretation and development. We agree with Kant cordially in drawing a distinction between practical and scientific knowledge; but we do not, like him, dissever the one from the other—nay, we rather make their substantial identity prominent. We agree with Reinhold in assigning a perfect authority to the consciousness; but we exclude its operation from the details of scientific systematization. We agree also with Jacobi in regarding faith as the implicit, inexplicable principle of assent to intellectual judgments—as the sufficient and indispensable bridge by which we pass from practical conviction to scientific theory; but we regard it also as the bond of union

* Comte, Cours de Phil. Pos., tom. i, pp. 4, 5, et passim.

† Ibid., tom. vi, pp. 659, 710–713, 843.

‡ This is recognised by Aristotle, Metaph., x, c. 4, p. 1061, and Herschel, Disc. Nat. Phil., part ii, c. i.

between the vague generalities of indistinct conception and the precise significance of sensational phenomena. Science is the systematic solution which the mind, after analysis and reflection, gives in subordination to its explicable powers of the phenomena of the universe, (in this case, τὸ σύνολον, not τὸ πᾶν;) consequently it can systematically embrace only so much as those mental powers are able to observe, interpret, and co-ordinate with its own observed processes. Practice is governed less by such scientific knowledge than by the whole range of human capacities, explicable or not, limited only by those conditions which Providence has prescribed to their operation, the reasons of which can be neither detected nor explained, though it may be possible to discover the range of their legitimate influence, and the necessary limitations to be imposed upon their valid employment. Hence, in our ordinary transactions we act upon conjecture, which is that state of mind in which evidence of some sort, though not sharply defined or capable of accurate estimation, certainly preponderates, but in which the determining cause of action is undoubtedly a belief beyond, and, in some cases, independent of logical evidence. We receive the truths of religion distinctly by faith*—a faith which, to perfect its results, requires the more direct co-operation of the Divinity—because the work is not one of the merely rational understanding; and, furthermore, because the logical evidence is never adequate to the convictions to be produced, the conclusions being always wider than the sum of the data which we can use as premises. But science, in its development, discards conjecture, and it rejects the direct employment of faith, as being often delusive and contradictory to its strict logical concatenation. In the inception, however, of science, we avail ourselves of conjecture, which frequently furnishes the materials of our analysis, or the thread for our guidance; and we require the assistance of faith to determine the fundamental data, including the relative or provisional certainty of our knowledge, from which science proceeds. If, at this stage of our inquiries, we reject the aid of faith, or undemonstrated conviction, (ἀναπόδεικται ἀρχαί,) the result will be a mere dry and formal science, founded upon a logical contradiction, and without any principle of coherence or intelligible reality; and, ultimately, this spectral formalism will work itself out into the very body of our science, and the original

* We declare distinctly and uncompromisingly against the doctrine of Saisset and Morell, that the credibility of revelation is dependent upon the fallible judgments of men. We cannot consent to recognise human faculties as a legitimate measure of things divine; and we think that Mr. Morell's logical dogmas logically lead to a purely logical infidelity.

hollowness of the system will render all our knowledge vague and unsatisfactory. In some of the old books is given the portrait of Nobody; he is represented by the hat, ruffle, bodice, breeches, stockings, and shoes, which form the ordinary integuments of civilized humanity. But this human vesture is filled only with wind, and thus presents a fitting denizen of the Isle of Ruach, whose inhabitants live upon wind.* Such must be all science which does not avow its ultimate dependence upon faith.

We may illustrate this exposition. Cause and effect, so far as capable of explanation by human reasoning, and, therefore, so far as explicable by science, or so far as admitting legitimate co-ordination in scientific systems, can only be resolved, as Hume and Brown† have shown, into the antecedence and sequence of events, not contingent, nor mutually dependent upon a higher antecedent, as in the case of day and night, but connected together by habitual, direct, and exclusive relations. Our own consciousness, however, assures us that cause and effect are something more than this—what more we cannot define; the analogies of our own being, as Sir John Herschel has so well pointed out, serve to strengthen this conviction; and we are compelled to assume by faith, at the outset of our science, the reality of cause and effect as one of our fundamental data, without which all our science would be shadowy, indeterminate, and devoid of certainty. But we must not go beyond the simple recognition of this truth; in developing our science, we must not build inferences or deductions upon it, because this would be drawing within the legitimate sphere of systematic speculation that which can only be recognised as lying beyond it. Herein is the point in which we consider that we mainly differ from Jacobi, as we differ from Kant, in harmonizing science and practice, by recognising as the basis of science those leading truths which our practice constantly and instinctively adopts. Herein, also, we differ widely from Comte, for he would attempt to exclude from both science and practice the recognition of anything in the facts which we observe, or are conscious of, beyond the phenomena themselves. But we have shown, at the commencement of this discussion, that even in the recognition of phenomena there is a process involved, which cannot be phenomenal, whatever else it may be.‡

The growing length of this essay warns us that we have not the

* Rabelais, Faictz et Dietz de Gargantua et Pantagruel, No. iv, chap. xliii.

† Hobbes, Glanville, and Malebranche preceded them: so did Aristotle, though obscurely, Metaph., iv, c. 2, &c.

‡ So Leibnitz. Phænomena sensuum veritatem rerum absolute non magis promittunt quam somnia. De Conf. Fid. cum Rat., § 65; Op. tom., i, p. 105.

space requisite for the further development of these views, nor even for those necessary explanations which might guard against their misconception or imperfect apprehension. It also denies us the opportunity of completing our original design by the cautious and critical examination of the different metaphysical systems now in vogue, with such light as the conclusions to which we have come might have afforded us. This has, indeed, been done in the progress of our inquiries, sufficiently to enable an earnest seeker after truth to apply to them the principles we have laid down, if he should find them to be correct after a diligent and candid examination; for speculations on such topics, we can assure our readers, are not to be comprehended and appreciated without careful study. We can only add, here, that our modern systems of metaphysics, and, indeed, all strict systems—(we except Bacon and Aristotle, rightly comprehended without the neglect of either side of their philosophy; but they did not pretend to construct systems)—have erred, and paved the way for strictly consequential infidelity, by attempting to transcend the legitimate limits of the human mind, and to incorporate into their systems what, by its nature, could not fall within their sphere; or by the converse fallacy of denying that which the reason recognises, though it recognises it as inexplicable. The root of error is, in both cases, the same—it is the old sophism of Protagoras, that man is the measure of the universe, with the dependent sophism of Des Cartes and Leibnitz, which has often unconsciously reappeared, that a clear idea is necessarily a true one. It is but too true that philosophers have been so blinded by the glare of their own creations, so hedged in within the narrow limits of their fondly-adored systems, so protected by them from the perception of everything that militates with them, or is not included in them, as rarely to have recognised the solemn and palpable truths expressed in the aphorism of Goëthe:—

> "Wohl unglückselig ist der Mann,
> Der unterlässt das, was er kann,
> Und unterfängt sich, was er nicht versteht;
> Kein Wunder, dass er zu Grunde geht."

Persius, speaking of his own philosophical studies, under Cornutus, beautifully remarks:—

> "Premitur ratione animus, vincique laborat."

How fully is the line exemplified by the "Critical History of the Philosophy of the Nineteenth Century!" How strikingly illustrated by the whole history of metaphysics! and how deeply cognizant of its truth must every man be, who, without being dazzled

by the tinsel glitter of systems, has ever trusted himself to what Coleridge has so happily termed "the quicksilver mines of metaphysical speculation!" Yet it is important to the best interests of humanity that these mines should be at least occasionally re-opened and worked, and that the dangerous fumes should be encountered by a few for the benefit of all. It is not in human power to discard metaphysics altogether, as Morell, Saisset, and Victor Cousin prove, and as Comte exemplifies by his attempt and failure. The paradox attributed to Aristotle* contains an irrefragable truth: "If we ought to philosophise, we must philosophize; if we ought not to philosophize, we must philosophise: in either case, we cannot help philosophizing." Mr. Morell, following step by step in the footprints of Victor Cousin, has shown that philosophy or metaphysics is a natural and inevitable development of the human mind. As it is concerned with the first principles of our knowledge, it is inextricably implicated with all our reasoning. We cannot divest ourselves of its influence if we would. Let it be recollected that the familiar terms of our ordinary language, substance, essence, being, existence, genus, species, property, difference, accident, general, special, particular, individual, quantity, quality—(we have discarded quiddity and entity, though we retain non-entity)—habit, mode, relation, accident, &c., &c., are strictly logical and metaphysical terms, and that they retain much of their philosophic import, though they have lost their technical precision. From this, it may be judged how impossible it is to exclude metaphysics from even the lower circles of reason and practice. Nay, if our metaphysics be erroneous, the error will ultimately reappear in all our reasonings and actions; and such, we think, is peculiarly the case in the present day. A false and corrupt philosophy has infused a corroding venom into the whole organism of society, and has produced a daily-spreading belief that religion must be rejected as inconsistent with science, while, at the same time, it has fearfully sapped all the foundations of faith. The injury which has been introduced by mistaken metaphysical speculation must be redressed by the juster employment of the same: we must fight the fire with fire; and, following the suggestion of Abraham Tucker, we must cure with the spear of Achilles the frightful ulcer which that spear has occasioned. We doubt, indeed, the possibility of constructing a valid metaphysical system; but a valid metaphysical method, whose re-

* Ὁ Ἀριστοτέλης ἔν τινι προτρεπτικῷ αὐτοῦ συγγράμματι, ἐν ᾧ προτρέπεται τοὺς νέους φιλοσοφεῖν, λέγει, ὅτι εἴτε φιλοσοφητέον, φιλοσοφητέον, εἴτε μὴ φιλοσοφητέον, φιλοσοφητέον, πάντως δὲ φιλοσοφητέον.—Prolegg. Phil. David, ap. Aristot. Schol., p. 13, a. 2.

sults might be incorporated with our systems of logic, notwithstanding the heated declamation of M. Saisset, we regard as a desideratum capable of being supplied, and necessary to be supplied, before we can hope for a solution of the mental, moral, religious, political, and social contradictions and heresies which are distracting Europe, and introducing disorder into our own country. We regard the enigmas proposed to our times in these several spheres as imperatively demanding speedy and adequate solution. The relation of philosophy to faith is a question of vital and urgent importance. For this reason we consider that the present age is one in which the renewal of the inquiry into the character and foundations of metaphysics is necessary, and the multitude of philosophers shows that the necessity is recognised. For this reason, too, we have girded ourselves for the task, though unused, and ordinarily disinclined to such speculations. But for our own part, we are willing to adopt the verse of Persius, quoted above, as the motto and colophon of our labours,—our motto as indicating the result of our own and all previous speculation—our colophon, as expressing our own belief that the main requisite of our modern philosophy (which is not deficient in either depth or ingenuity, though it be the deceptive depth and fallacious ingenuity of the ancient Sophists) is to confess its inability to evolve the complete explication of the universe out of the powers of the human mind alone, without the previous confession of its entire dependence upon something higher and indemonstrable, beyond the range of human explanation, whence all the validity of accurate reasoning, and the semblance of truth in all fallacy, are derived. It would be a slander on our own doctrines to pretend that our arguments tend to prove the being of God or the truth of revelation—for these we have declared to be beyond the range of human proof; but the tendency of this whole discussion, we think, is to show the necessity of the recognition of both, not from proof, but from the invalidity of all reasoning, which does not start from their acknowledgment, and the acknowledgment of its own dependence thereon. If this doctrine be once definitely established as a logical pre-requisite of all reasoning, we may then hope to remove the apparent discord between science and religion, which has already proved nearly fatal to the latter—we may harmonize philosophy with Christianity, without imitating Saisset in assigning co-ordinate and co-equal powers to both—we may redeem the age from the charge of a lack of faith, which has been too justly brought against it—we may yet see that reconciliation of reason with faith, which Bayle sighed for, and Leibnitz endeavoured to effect—and we may then anticipate, without the arrogant pretension

of a system of metaphysics, a metaphysical method which may merit to become truly the philosophy of the nineteenth century; and, while glorifying the time by its own glory, may offer some alleviation for the innumerable miseries which have resulted from the ostentatious, sophistical, and blighting pretensions of the self-styled age of intellect.

Art. II.—THE USE OF MATHEMATICS IN EDUCATION.

"*The Logic and Utility of Mathematics, with the best methods of instruction explained and illustrated.*" By Charles Davies, L.L. D. Barnes & Co., New-York.

Professor Davies states the object of his work to be "to present the elements of mathematical science separately and in their connexions; to point out and note the mental faculties which it calls into exercise; to show why and how it develops those faculties, and in what respect it gives to the whole mental machinery greater power and certainty of action than can be attained by other studies." In carrying out his plan, he has certainly produced a book of great practical value, if not of the most profound scientific character. Apart from its theoretical views, its practical suggestions, the result of many years' experience as a teacher, will commend the work to all who are engaged in mathematical instruction.

But the question naturally arises, did we need such a work? Is not the world sufficiently satisfied of the importance of mathematical studies? An examination of the course of studies pursued at most of our public institutions, will show that the mathematics have a place in them all; but not by any means the position claimed for them by our author. Indeed, he goes so far as to argue that they are pre-eminently fitted to form the great basis of all education. He asks,—

"What system of training and discipline will best develop and steady the intellect of the young; give vigour and expansiveness to thought, and stability to action? What course of study will most enlarge the sphere of investigation; give the greatest freedom to the mind, without licentiousness, and the greatest freedom to action, consistent with the laws of nature and the obligations of the social compact? What system of study is, from its nature, most likely to insure this training, and contribute to such results, and at the same time lay the foundation of all that is truly great in the practical? It has seemed to me, that mathematical science may lay claim to this pre-eminence."

Now, we believe that the world thinks more of the immediate practical results of mathematics, than of their importance as a means of training for general usefulness. The mass of men, and even of