THE

EDINBURGH REVIEW,

OR

CRITICAL JOURNAL:

FOR

JANUARY......JULY, 1833.

TO BE CONTINUED QUARTERLY.

SUXEM DAMNATUR CUM NOCENS ABSOLVITUR.

PUBLIUS SYRUS.

VOL. LVII.

EDINBURGH:

PRINTED BY BALLANTYNE AND COMPANY,

FOR LONGMAN, REES, ORME, BROWN, GREEN, AND LONGMAN,

LONDON; AND ADAM AND CHARLES BLACK, EDINBURGH.

1833,
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Nothing, we think, affords a more decisive proof of the partial spirit in which philosophy has been cultivated in Britain, for the last century and a half, than the combined perversion and neglect which Logic—the science of the formal laws of thought—has experienced during that period. Since the time, and principally, we suspect, through the influence of Locke, (who, as Leibnitz observed, svest logicae non intellectus,) no country has been so poor in this department of philosophy, whether we estimate our dialectical literature by its mass or by its quality. Loath to surrender the subject altogether, yet unable, from their own misconception of its nature, to indicate to logic, on the proper ground, its paramount importance to a science a priori, distinct, and independent; the few logical authors who appeared endeavoured, on the one hand, by throwing out all that belonged to it of a repulsive character; to obviate a taste, and, on the other, by interpolating what pertained to other branches of knowledge—here a chapter of psychology, there a chapter of metaphysic, &c.—to conciliate to the declining study a broader interest than its own. The attempt was too irrational to succeed; and served only to justify the disregard it was meant to remedy. This was to convert the interest of knowledge with the interest of taste; this was not to amplify logic, but to deform philosophy, by breaking down their boundaries, and running the different sciences into each other.

In the Universities, where Dialectic once reigned 'The Queen of Arts,' the failure of the study is more conspicuously remarkable.

In those of Scotland, the Chairs of Logic have for generations taught any thing rather than the science which they nominally profess;—a science by the way in which the Scots have not lately maintained the reputation once established by them in all, and still retained in other departments of philosophy. To the philosophers of our country, we must confess, that, in part at least, is to be attributed the prevalence of the erroneous notions on this subject promulgated by Locke. No system of logic deserving of notice ever appeared in Scotland; and for Scottish logical writers of any merit, we must travel back for more than two centuries to three contemporary authors, whose abilities, like those, indeed, of almost all the more illustrious scholars of their nation, were developed under foreign influence—to Robert Balfour, Mark Duncan, and William Chalmers, Professors in the Universities of Bonneux, Saumur, and Angers. In Cambridge the fortune of the study is indicated by the fact, that the Elements of Logic of William Duncan of Aberdeen, have long dispensed a muddy scantling of metaphysic, psychology, and dialectic, in the University where Downam taught; and Murray's Logic, the Trinity College Compend, may show that matters are, if possible, at a lower pass in Dublin.

In Oxford, the fate of the science has been somewhat different, but, till lately, scarcely more favourable. And here it is necessary to be more particular, as this is the only British seminary where the study of logic proper can be said to have survived; and as, with one exception, the whole works under re-...
view* emanate from that University,—represent its character,—
and are determined and modified by its circumstances. During
the scholastic ages, Oxford was held inferior to no University
throughout Europe; and it was celebrated, more especially, for its
philosophers and dialecticians. But it was neither the recollection
of old academical renown, nor any enlightened persuasion of its
importance, that preserved to logic a place among the subjects
of academical tuition, when the kindred branches of philosophy,
with other statutory studies, were dropt from the course of
instruction actually given. These were abandoned from no con-
viction of their inutility, nor even in favour of others of superior
value: they were abandoned when the system under which they
could be taught, was, for a private interest, illegally superseded
by another under which they could not. When the College
Fellows supplanted the University Professors, the course of sta-
tutory instruction necessarily fell with the statutory instruments
by which it had been carried through. The same extensive,
the same intensive, education which had once been possible when
the work was distributed among a body of Professors, each
chosen for his ability, and each concentrating his attention on a
single study, could no longer be attempted when the collegial
corporations, a fortuitous assemblage of individuals, in so far as
literary qualification is concerned, had usurped the exclusive pri-
vilege of instruction; and when each of these individuals was an-
authorized to become sole teacher of the whole academical ency-
clopedia. But while the one unqualified Fellow-tutor could not
perform the work of a large body of qualified Professors; it is
evident that, as he could not rise and expand himself to the former
system, that the present, existing only for his behoof, must be con-
tracted and brought down to him. This was accordingly done.
The mode of teaching, and the subjects taught, were reduced to
the required level and extent. The capacity of lecturing, that
is, of delivering an original course of instruction, was not now to
be expected in the tutor. The pupil, therefore, read to his tutor
a lesson out of book; on this lesson the tutor might, at his discre-
tion, interpose an observation, or preserve silence; and he was
thus effectually guaranteed from all demands beyond his ability
or inclination to meet. This reversed process was still denom-
ninated a lecture. In like manner, all subjects which required in
the tutor more than the Fellows' average of learning or acuteness,
were eschewed. Many of the most important branches of
education in the legal system were thus discarded; and those

* These works, indeed, with one or two insignificant exclusions,
comprise the whole recent logical literature of the kingdom.

which it was found necessary or convenient to retain in the
intrusive, were studied in easier and more superficial treatises.
This, in particular, was the case with logic.

By statute, the Professor of Dialectic was bound to read and
expose the Organon of Aristotle twice a-week; and, by sta-
tute, regular attendance on his lectures was required from all
under-graduates for their three last years. Until the statu-
tory system was superseded, an energetic and improving ex-
ercise of mind from the intelligent study of the most remark-
able monument of philosophical genius, imposed on all, was
more especially secured in those who would engage in the
subsidiary business of tuition. This, and the other conditions
of that system, thus determined a far higher standard of quali-
fication in the tutor when the tutor was still only a subordi-
nate instructor, than remained when he had become the ex-
clusive organ of academical education. When, at last, the
voice of the Professors was silenced in the University, and
in the Colleges the Fellows had been able to exclude all other
graduates from the now principal office of tutor, the study
of logic declined with the ability of those by whom the science
was taught. The original treatises of Aristotle were now found
to transcend the College complement of erudition and intellect.
They were accordingly abandoned; and with these the various
logical works previously in academical use, which supposed any
reach of thought, or an original acquaintance with the Orga-
non. The Compend of Sanderson stood its ground for a rea-
sion, when the more elaborate treatises of Breuerwood, Crack-
thorpe, and Smigleus, were forgotten. But this little treatise,
the excellent work of an accomplished logician, was too closely
relative to the books of the Organon, and demanded too
frequently an inconvenient explanation, to retain its place, so
soon as another text-book could be introduced; more accommo-
dated to the fallen and falling standard of tutorial competency.
Such a text-book was soon found in the Compendium of Aldrich.
The dignity of its author, as Dean of Christ Church, and his repu-
tation as an ingenious, and even learned, writer in other branches
of knowledge, ensured it a favourable recommendation; it was
ever written by Sanderson; written in a less scholastic La-
tin; adopted an order wholly independent of the Organon;
and made no awkward demands upon the tutor, as comprising
only what was either plain in itself, or could without difficulty
be expounded. The book—which, in justice to the Dean, we
ought to mention was not originally written for the public—
is undoubtedly a work of no inconceivable talent; but the
talent is, perhaps, principally shown in the author having per-
formed so cleverly a task for which he was so indifferently
prepared. Absolutely considered, it has little or no value. It is but a slight eclectic epitome of one or two logical treatises in common use (that it is exclusively abridged from Wallis is incorrect); and when he wanders from, or mistakes his authorities, he displays a want of information to be expected, perhaps, in our generation, but altogether marvellous in his. It is clear that he knew nothing of the Organon, and very little of the modern logicians. The treatise likewise omitted a large proportion of the most important matters; and those it does not exclude are treated with a truly unedifying brevity. As a slender introduction to the after-study of logic (were there not a hundred better) it is not to be despised; as a full course of instruction, as an independent system of the science, it is utterly contemptible. Yet, strange to say, the Compend of Aldrich having gradually supplanted the Compend of Sanderson, has furnished for above a century the little all of logic taught in these latter days by the University of Bradwardin and Scotus.*

Even the minorations of the academical system have not proved beneficial to this study; perhaps, indeed, the reverse. Since the institution of honours, and of a real examination for the first degree in arts, a powerful stimulus has been applied to other studies—to that of logic none. Did a candidate make himself master of the Organon?—he would find as little favour from the dispensers of academic distinction, as he had previously obtained assistance from his tutor. For the public examiners could not be expected, either to put questions on what they did not understand, or to encourage the repetition of such overt manifestations of their own ignorance. The minimum of Aldrich, therefore, remained the maximum of the schools; and was "got up," not to obtain honour, but to avoid disgrace. But even this minimum was to be made less; there was "a lower deep beneath the lowest deep." The Compendium,

* Some thirty years ago, indeed, there was printed, in usum academicae junioris, certain Excerpta ex Aristotelis Organon. The execution of that work shows how inadequate its author was to the task he had undertaken. Nothing could be more conducive to the rational study of logic than a systematic condensation of the more essential parts of the different treatises of the Organon, with original illustrations, and selections from the best commentators, ancient and modern. As it is, this petty publication has exerted no influence on the logical studies of the University; we should like to know how many tutors have expounded it in their lectures, how many candidates have been examined on it in the schools. On the logical authors, at least, of the University, it has exerted none.


a meagre duodecimo of 180 pages, to be read in a day, and easily mastered in a week, was found too ponderous a volume for pupil, tutor, and examinator. It was accordingly subjected to a process of extenuation, out of which it emerged reduced to little more than a third of its original gracia—-a skeleton without marrow or substance. "Those who go deep in dialectic," says Aristotle Chius, "may be resembled to crab-eaters; for a mouthful of meat, they spend their time over a heap of shells." But your superficial student of logic loses his time without even a savour of this mouthful; and Oxford, in her old age, has proved herself an Alma Mater, in thus so unthinkingly cramming her alumnæ with the shells alone. As Dr Whately observes, "a very small proportion even of distinguished students ever become proficient in logic; and by far the greater proportion pass through the University without knowing anything at all of the subject. I do not mean that they have not learned by rote a string of technical terms, but that they understand absolutely nothing whatever of the principles of the science." The miracle would be, if they ever did. Logic thus degraded to an illsome but wholly unprofitable pastime, the absurdity of its longer enforcement was felt by some intelligent leaders of the University. It was "proposed," says Dr Whately, "to leave the study of logic altogether, to the option of the candidates;" a proposal hailed with joy by the under-graduates, who had long prayed fervently with St Ambrose.—*A Dialectica Aristotelis libera nos, Domine.*

In these circumstances, when even the Heads could not much longer have continued obstinate, and logic seemed in Oxford on the eve of following metaphysic and psychology to an academic grave, a new life was suddenly communicated to the expiring study, and hope at least allowed for its ultimate convalescence under a reformed system.

This was mainly effected by the publication of the Elements of Dr Whately, then Principal of St Alban's Hall, and recently (we rejoice) elevated to the Archepiscopal See of Dublin. (No 2 of the works at the head of this Article.) Somewhat previous, the Rudimenta (abbreviated Compendium) of Aldrich had been illustrated with English notes by an anonymous author, whom we find quoted in some of the subsequent treatises under the name of HII, (No 1.) The success and ability of the Elements' prompt imitation and determined controversy. Mr Bentham (nephew of Mr Jeremy Bentham) published his Outline and Examination, in which Dr Whately is alternately the object of censure and encomium (No 4); and the pamphlet of Mr Lewis (on two points only) is likewise controversial (No 5). The Principal, as becoming, was abridged and lauded by his Vice (No 3); and the treatises by Mr Huyshe and others (Nos 6,
together with the excellent and admirable talents of the late Dr. Whewell, and his philosophical writings, which are the subject of the present work, and to which we are indebted for our knowledge of the subject. The last decade, indeed, has done much in the way of extending and perfecting the knowledge of the subject, and we are happy to find, in the works of the late Dr. Whewell, so much of the truth and reality of the subject, as well as of the power of the mind, that it is impossible to doubt the existence of the thing itself. We shall, therefore, be happy to see the full extent of the subject in the works of the late Dr. Whewell, and to find in them the full extent of the power of the mind, that it is impossible to doubt the existence of the thing itself.
his views been more applauded, than in the determination of this fundamental problem. 'Logic,' says he, 'in the most extensive sense which the name can with propriety be made to bear, may be considered as the Science, and also as the Art of Reasoning. It investigates the principles on which argumentation is conducted, and furnishes rules to secure the mind from error in its deductions. Its most appropriate office, however, is that of instituting an analysis of the process of the mind in reasoning; and in this point of view it is, as has been stated, strictly a science; while, considered in reference to the practical rules above mentioned, it may be called the art of reasoning. This distinction, as will hereafter appear, has been overlooked, or not clearly pointed out, by most writers on the subject; logic having been in general regarded as merely an art, and its claim to hold a place among the sciences having been expressly denied.'—Elements, p. 1.

Here the enquiry naturally separates into two branches: the one concerns the genus, the other the object-matter of logic.

In regard to the former—Dr Whately's reduction of logic to the twofold category of Art and Science, has earned the praises of his Critical Examiner, but who, it must be acknowledged, is as often out in his encomium as in his censure. 'Dr Whately,' says Mr Bentham, 'has in particular brought to view one very important fact, overlooked by all his predecessors, though so obvious, when once exhibited, as to make us wonder that it should not have been remarked: viz. that logic is a science as well as an art. The universally prevailing error that human knowledge is divided into a number of parts, some of which are arts, without science, and others sciences without art, has been fully exposed by Mr Bentham in his Chrestomathia. There also it has been shown, that there cannot exist a single art that has not its corresponding science, nor a single science which is not accompanied by some portion of art. The Schoolmen, on the contrary, have, with extraordinary effort, endeavored to prove that logic is an art only, not a science; and in that particular instance, Dr Whately is, I believe, one of the first who has ventured to contradict this ill-founded assertion.' Outline, p. 12.—In all this there is but one statement with which we can agree. We should certainly 'wonder' with Mr Bentham, had any 'so obvious and important fact' been overlooked by all Dr Whately's predecessors; and knowing something of both, should assuredly be less disposed to presume a want of acuteness in the old logicians, than any ignorance of their speculations in the new. In the latter alternative, indeed, will be found a solution of the 'wonder.' Author and critic are equally in error.

In the first place, looking merely to the nomenclature, both are historically wrong. 'Logic,' says Dr Whately, 'has been in general regarded merely as an art, and its claim to hold a place among the sciences has been expressly denied.' The reverse is true.

The great majority of logicians have regarded logic as a science, and expressly denied it to be an art. This is the oldest as well as the most general opinion. 'The Schoolmen,' says Mr Bentham, 'have with extraordinary effort endeavoured to prove that logic is an art only.' On the contrary, the Schoolmen have not only 'with extraordinary effort,' but with unexampled unanimity laboured in proving logic to be exclusively a science; and so far from 'Dr Whately being' (with Mr Jeremy Bentham) 'the first to contradict this ill-founded assertion,' the paradox of these gentlemen is only the truism of the world beside. This error is the more surprising, as the genius of logic is one of those vexed questions on which, as Auerius says, it

omnis certat Dialectica turba sophorum:

indeed, until latterly, no other perhaps stands so obtrusively forward during the whole progress of the study. Plato and the Platonists considered dialectic as a science; but with them dialectic was a real not a formal discipline, and corresponded rather to the metaphysic than to the logic of the Peripatetics. Logic is not defined by Aristotle. His Greek followers, and a considerable body of the most eminent Dialecticians since the revival of letters, deny it to be either science or art. The Stoics and some in general viewed it as a science. The Arabic and Latin schoolmen did the same. In this opinion Thomist and Scotist, Realist and Nominalist, concurred; an opinion adopted, almost to a man, by the Jesuit, Dominican, and Franciscan Curlists. From the restoration of letters, however, and especially during the latter part of the 16th century, so many Aristotelians, with the whole body of Ramists, (to whom were afterwards to be added a majority of the Cartesians, and a large proportion of the Eclectics,) maintained that it was an art; that the error of Sanderson may be perhaps excused in attributing this opinion to 'almost all the more recent authors' at his time. Along with these, however, (as far as Dr Whately from having 'brought to view this important fact, overlooked by all his predecessors,' ) there was a very considerable party who anticipated the supposed novelty of this author in defining logic by the double genus of art and science.' In the schools of Wolf and Kant logic again obtained the name of science.

* To make reference to these would be de trop; we count above a dozen logicians of this class in our own collection. But independently of the older and less famous authors, Mr Jeremy Bentham and Dr
But—to look beneath the name—as Dr Whately and his critic are wrong in imagining that there is any novelty in the observation, they are equally mistaken in attributing to it the smallest importance. The question never concerned logic itself, but merely the meaning of the terms by which it should be defined. The old logicians, however keenly they disputed whether logic were a science or an art—or neither—or both—a science speculative, or a science practical—or at once speculative and practical—never dreamt that the controversy possessed, in so far as logic was concerned, more than a verbal interest.* In regard to the essential nature of logic they were at one; and contended only, what was the comprehension of these terms in philosophical propriety, or rather what was the true interpretation of their Aristotelian definitions. Many intelligent thinkers denounced, with Vives, the whole problem as frivolous. 'Questioni locum dedit misera homonymia,' says Mark Duncan, among a hundred others. The most strenuous advocates of the several opinions regularly admit, that unless the terms are taken in the peculiar signification for which they themselves contend, that all and each of their adversaries may be correct; while, at the same time, it was recognised on all hands, that these terms were vulgarly employed in a vague or general acceptance, under which every opinion might be considered right, or rather no opinion could be deemed wrong.

*Whately have no claim (the latter makes none) to originality in this observation. Even the last respectable writer on logic in the British Empire, previous to these gentlemen, Dr Richard Kirwan, whose popular and able volumes were published in 1807, defines logic as art and science; and this in terms so similar to those of Dr Whately, that we cannot hesitate in believing that this author had his predecessor’s definition (which we shall quote) immediately in view. 'Logic is both a science and an art; it is a science inasmuch as, by analysing the elements, principles, and structure of arguments, it teaches us how to discover their truth or detect their fallacy, and point out the sources of such errors. It is an art, inasmuch as it teaches how to arrange arguments in such manner, that their truth may be most readily perceived, or their falsehood detected.'—Vol. i. p. 1.

* Father Boffier is unjust to the old logicians, but he places the matter on its proper footing in reference to the new. —Si la logique est une science. Oui et non; selon l'idée qu'il vous plait d'attacher à un nom de science, &c. — Si la logique est un art. Encore un fois, oui et non; — Il plait aux logiciens de disputer si la logique est ou n'est pas un art; et il ne leur plait pas non plus d'en disposer à leurs disciples, que c'est une pure ou presque question de nom. —Cours des Sciences, (Logique,) p. 887.

The preparatory step of the discussion was, therefore, an elimination of these less precise and appropriate significations, which, as they could at best only afford a remote genus and difference, were wholly incompetent for the purposes of a definition. But—what the older logicians rejected as a useless truism, the recent embrace as a new and important observation. In regard to its novelty,—do Dr Whately and Mr Bentham imagine that any previous logician could ever have dreamt of denying that logic, in their acceptance of the terms, was at once an art and a science? Let them look into almost any of the older treatises, and they will find this explicitly admitted, even when the terms Art and Science are employed in senses far less vague and universal than is done by them. As to its importance,—do they suppose that a more precise and accurate conception of logic is thus obtained? The contrary is true. The term Science Dr Whately employs in its widest possible extension, for any knowledge considered absolutely, and not in relation to practice; in this acceptance every art in its doctrinal portion must be a science: and Art he defines the application of knowledge to practice; in which signification, ethics, politics, religion, and all other practical sciences, must be arts. Art and Science are thus distended till they run together. As philosophical terms they are now altogether worthless; too universal to define; too vacillating between identity and difference, to distinguish. In fact, their application to logic, or any other subject, is hereafter only to define, and to confuse; expressing, as they do, not any essential opposition between the things themselves, but only the different points of view under which the same thing may be contemplated by us;—every art being thus in itself also a science, every science in itself also an art. This Mr Bentham thinks the correction of a universal error,—the discovery of an important fact. If the question in the hands of the old logicians be frivolous, what is it in those of the new! *
So much for the genus, now for the object-matter. Of Dr Whately's Elements, Mr Hinds says, 'This treatise displays—and it is the only one that has clearly done so—the true nature and use of logic; so that it may be approached, no longer as a dark, curious, and merely speculative study; such as one is apt to fancy, to class with astrology and alchemy.'—Pref. p. viii. These are strong words.

We are disposed to admit that Dr Whately is perhaps not far wrong with regard to the 'true nature and use of logic;'—that he 'clearly displays' that nature and use, is palpably incorrect; and that his is the 'only treatise which has clearly done so,' is but another proof, that assertion is often in the inverse ratio of knowledge.

We shall say nothing of what we conceive a very partial conception of the science—that Dr Whately makes the process of reasoning not merely its principal, but even its adequate object; those of simple apprehension and judgment being considered not in themselves as constituent elements of thought, but simply as subordinate to argumentation. In this view logic is made convertible with syllogistic. This view, which may be allowed, in so far as it applies to the logic contained in the Aristotelian treatises now extant, was held by several of the Arabian and Latin schoolmen: borrowed from them by the Oxford Crackanthorp, it was adopted by Wallis, and from Wallis passed to Dr Whately. But, as applied to logic, in its own nature, this opinion has been long rejected, on grounds superfluously conclusive, by the immense majority even of the Peripatetic dialecticians; and not a single reason has been alleged by Dr Whately to induce us to waver in our belief, that the laws of thought, and not the laws of reasoning, constitute the adequate object of the science. This error, which we cannot now refute, would, however, be of comparatively little consequence, did it not—as is notoriously the case in Dr Whately's Elements—induce a perfunctory consideration of the laws of those faculties of thought which are viewed as only subsidiary to the process of reasoning.

In regard to the 'clearness' with which Dr Whately 'displays the true nature and use of logic,' we can only say, that, after all our consideration, we do not yet clearly apprehend what his notions on this point actually are. In the very passages where he formally defines the science, we find him indistinct, ambiguous, and even contradictory; and it is only by applying the most favourable interpretation to his words that we are able to allow him credit for any thing like a correct opinion.

He says, that 'the most appropriate office of logic (as science) is that of instituting an analysis of the process of the mind in reasoning,' (p. 1.) and again, that 'the process (operation) of reasoning is alone the appropriate province of logic,' (pp. 13, 140.) The process or operation of reasoning is thus the object-matter about which the science of logic is conversant. Now, a definition which merely affirms that logic is the science which has the process of reasoning for its object, is not a definition of this science at all; it does not contain the differential quality by which logic is discriminated from other sciences; and it does not prevent the most erroneous opinions (it even suggests them) from being taken up in regard to its nature. Other sciences, as psychology and metaphysic, propose for their object (among the other faculties) the operation of reasoning, but this considered in its real nature: logic, on the contrary, has the same for its object, but only in its formal capacity; in fact, it has, in propriety of speech, nothing to do with the process or operation, but is conversant only with its laws. Dr Whately's definition is, therefore, not only incompetent, but delusive; it would identify logic and psychology and metaphysic—occasion those very misconceptions in regard to the nature of logic which other passages of the Elements, and indeed the general analogy of his work, show that it was not his intention to sanction.

But Dr Whately is not only ambiguous; he is contradictory.
We have seen, that, in some places, he makes the process of reasoning the adequate object of logic; what shall we think when we find, that, in others, he states that the total or adequate object of logic is *language*? But, as there cannot be two adequate objects, and as language and the operation of reasoning are not the same, there is therefore a contradiction. In introducing the mention of *language*, previously to the definition of logic, I have departed from what I have established practice, in order that it may be clearly understood, that logic is *entirely conversant about language*; a truth which must writers on the subject, if indeed they were fully aware of it themselves, have certainly not taken due care to impress on their readers,* (p. 56.) And again: *Logic is wholly concerned in the use of language,* (p. 74.)

The term *logic* (as also *dialectic*) is of ambiguous derivation. It may either be derived from ἴλογος (προφητεύς), reason, or our intellectual faculties in general; or from ἴλογος (προφητεύς), speech or language, by which these are expressed. The science of logic may, in lieu of, be viewed either, 1. as adequately and essentially conversant about the former, (the internal ἴλογος, *verbum mentale,* and partially and accidentally about the latter, (the external ἴλογος, *verbum oris;*) or, 2. as adequately and essentially conversant about the latter, partially and accidentally about the former.

The first opinion has been held by the great majority of logicians, ancient and modern. The second, of which some traces may be found in the Greek commentators of Aristotle, and in the more ancient Nominalists during the middle ages, (for the later scholastic Nominalists, to whom this doctrine is generally but falsely attributed, held in reality the former opinion,) was only fully developed in modern times by philosophers, of whom Hobbes may be regarded as the principal. In making the analysis of the operation of reasoning the appropriate office of logic, Dr Whately adopts the first of these opinions; in making logic entirely conversant about language, he adopts the second. We can hardly, however, believe that he seriously entertained this last. It is expressly contradicted by Aristotle, (Analyt. Post. i. 10, §7); it involves a psychological hypothesis in regard to the absolute dependence of the mental faculties on language, once and again refuted, which we are confident that Dr Whately never could sanction; and, finally, it is at variance with sundry passages of the *Elements*, where a doctrine apparently very different is advanced. But, be his doctrine what it may, precision and perspicuity are not the qualities we should think of applying to it.

But if the Vice-Principal be an incompetent judge of what the Principal has achieved, he is a still more incompetent reporter of what all other logicians have not. If he has read even a hundredth part of the works it behoved him to have studied before being entitled to assert that Dr Whately's *treatise* is *the only one that has clearly displayed the true use and nature of logic,* he has accomplished what not one of his brother dialecticians of Oxford has attempted. But the assertion betrays itself: *πάντες ἄνθρωποι.* To any one on a level with the literature of this science, the statement must appear supremely ridiculous, that the notions held of the nature and use of logic in the Kantian and even in the Wolffian school are not so clear, adequate, and correct, as those promulgated by Dr Whately. A general survey, indeed, of the history of opinions on this subject would prove, that views essentially sound were always as frequent, as the carrying of these views into effect was rare. Many, speculatively, recognised principles of the science, which almost none practically applied to regulate its constitution. Even the scholastic logicians display, in general, more enlightened and profound conceptions of the nature of their science than any recent logician of this country. In their multifarious controversies on this matter, the diversity of their opinions on subordinate points is not more remarkable than their unanimity on principal. All their doctrines admit of a favourable interpretation; and some have, for truth and precision, been seldom equalled, never surpassed. Logic they all discriminated from psychology, metaphysics, &c. as a rational, not a real—as a formal, not a material science. The few who held the adequate object of logic to be *things in general,* held this, however, under the qualification, that things in general were considered by logic only as they stood under the general forms of thought imposed on them by the intellect, (*quatenus secundis intentionibus substanti.* Those who maintained this object to be the higher processes of thought, (three, two, or one,) carefully explained, that the intellectual operations were not, in their own nature, proposed to the logician—that belonged to the psychologist—but only in so far as they were *dirigible,* or the subject of laws. The proximate end of logic was thus to analyse the canons of thought; its remote, to apply these to the intellectual acts.—Those, again, (and they formed the great majority,) who saw

* Almost all logicians, however, impress upon their readers, that logic is not, indeed, entirely, but partially and secondarily occupied with language as the vehicle of thought, about which last it is adequately and primarily conversant.
this object in second notions,* did not allow that logic was concerned with these second notions abstractly and in themselves,—that was the province of metaphysics,—but only in concrete as applied to first, as the instruments and regulators of thought. It would require a longer exposition than we can afford to do justice to these opinions—and especially the last; for, when properly understood, they will be found to contain, in principle, all that has been subsequently advanced of any value in regard to the object-matter and scope of logic.

Nothing can be more meagre and incorrect than Dr Whately's sketch of the history of logic. This part of his work, indeed, is almost wholly borrowed from the poverty of Aldrich. As specimens:

* Archytas is, after Aldrich, set down as the inventor of the Categories; and this now exploded opinion is advanced with

* The distinction (which we owe to the Arabians) of first and second notions (notiones, conceptus, intentiones, intellectus primo et secundo), is necessary to be known, not only on its own account, as a highly philosophical determination, but as the condition of any understanding of the scholastic philosophy, old and new, of which, especially the logic, it is almost the Alpha and Omega. Yet, strange to say, the knowledge of this famous distinction has long been lost in the (once) second school of the church.' Aldrich's definition is altogether inadequate, if not positively erroneous. Mr Hill and Dr Whately is followed by Mr Huygens and the author of Questions on Logic, &c., misconceive Aldrich, who is their only authority, if Aldrich understood himself, and floundered on from one error to another, without even a glimpse of the light. (Hill, pp. 30-33; Whately, pp. 173-175; Huygens, pp. 18, 19, Questions, pp. 10, 11, 71.) (Of a surety, no calumny could be more unfounded, as now applied to Oxford, than the 'calumny, of which Dr Whately is apprehensive, against confining the human mind in the trammels of the schoolmen!') The matter is worth some little illustration; we can spare it none, and must content ourselves with a definition of the terms. A first notion is the conception of a thing as it exists of itself, and independently of any operation of thought; as, John, Man, Animal, &c. A second notion is the conception, not of an object as it is in reality, but of the mode under which it is conceived by the mind itself; as, Individual, Species, Genus, &c. The former is the conception of a thing —direct; the latter the conception of a conception,—formal—mediate—reflex. For elucidation of this distinction, and its applications, it is needless to make references. The subject is copiously treated by several authors in distinct treatises, but will be found competently explained in almost all the older systems of logic and philosophy.

out a suspicion of its truth. The same unacquaintance with philosophical literature and Aristotelic criticism is manifested by every recent Oxford writer who has alluded to the subject. We may refer to the Excerpta ex Organo, in usum academicae Juventutis—to the Oxonia Purgata of Dr Tatham—to Mr Hill's Notes on Aldrich—to Mr Huygens's Logic—and to the Philosophy of Aristotle by Mr Hampden. This last even makes the Stagirite derive his moral system from the Pythagoreans, although the forger of the fragments preserved by Stobaeus, under the name of Theagenes, and other ethical writers of that school, has now been for half a century fully established. They stand likewise without an obelus in Dr Griseworth's respectable edition of the Florilegium. Aristotle would be, indeed, the sorriest plagiarist on record, were the theses believed of him by his Oxford votaries not false only, but ridiculous. By Aldrich it is stated, as on indisputable evidence, that, while in Asia, he received a great part of his philosophy from a learned Jew; and this silly fable stands uncontested in the Compendium to the present day: while, by the Oxford writers at large, he is still supposed to have stolen his Categories and Ethic from the Pythagoreans. What would Schleiermacher or Creuzer think of this!

In discriminating Aristotle's merits in regard to logic, Dr Whately, we are sorry to say, is vague and incorrect. 'The greatest mistakes have always prevailed respecting the nature of logic; and its province, has, in consequence, been extended by many writers to subjects with which it has no proper connection. Indeed, with the exception of Aristotle, (who is himself not entirely exempt from the errors in question,) hardly a writer on logic can be mentioned who has clearly perceived, and steadily kept in view throughout, its real nature and object.' (p. 2.)—So far is Aristotle—so far at least are his logical treatises which still remain, (and these are few to the many that are lost,) from meriting this comparative eulogium, that nine-tenths—in fact, more than nine-tenths,—of these treatise of matters, which, if logical at all, can be viewed as the objects, not of per, but only of an applied logic; and we have no hesitation in affirming, that the incorrect notions which have prevailed, and still continue to prevail, in regard to the 'nature and province of logic,' are, without detraction from his merits, mainly to be attributed to the example and authority of the Philosopher himself. The book of Categories, as containing an objective classification of real things, is metaphysical not logical. The two books of Posterior Analytics, as solely conversant about demonstrative or necessary
and independent—was, probably, an original supplement by these philosophers; previous to which, the logical system remained altogether defective.

The writings of Aristotle," says Dr Whately, "were not only absolutely lost to the world for about two centuries, [not all,] but seem to have been but little studied for a long time after their recovery. An art, however, of logic, derived from the principles traditionally preserved by his disciples, seems to have been generally known, and to have been employed by Cicero in his philosophical works; but the pursuit of the science seems to have been abandoned for a long time. Early in the Christian era the Peripatetic doctrines experienced a considerable revival; and we meet with the names of Galen and Porphyry as logicians; but it is not till the fifth century that Aristotle's logical works were translated into Latin by the celebrated Boethius. Not one of these seems to have made any considerable advances in developing the theory of reasoning. Of Galen's labours little is known; and Porphyry's principal work is merely on the Precis of his. We have little of the science till the revival of learning among the Arabians, by whom Aristotle's treatises on this as well as on other subjects were eagerly studied," (p. 7)

In this sketch of the fortune of logic from Aristotle to the schoolmen, Dr Whately closely follows Aldrich; and how utterly incompetent was Aldrich for a guide, is significantly shown by his incomparable (but still uncorrected) blunder of confounding Galen with Alexander of Aphrodisias! *Circa annum Christi 160,* sait he, *interpretum princeps Galenus floruit, Expositio, sive Expositor, sive Expositus, Getus.* Galen, who thus flourished at nine years old, never deserved, never received the title of The Commentator. This designation, as every tyro ought to know, was exclusively given to Alexander, the oldest and ablest of the Greek interpreters of Aristotle, until it was afterwards divided with him by Averroes. The names of Theophrastus and Eudemus, the great founders of logic after Aristotle, do not appear. We say nothing of inferior logicians, but the Aphrodisian and Ammonius Hermiae were certainly not less worthy of notice than Porphyry. Of Galen's logical labours, some are preserved, and of others we know not a little from his own information and that of others. Why is it not stated, here or elsewhere, that the fourth figure is to be attributed to Galen, and on what authority? Nothing is said of the original logical treatises of Boethius, though his work on Hypotheticals is the most copious we possess. Had Dr Whately studied the subject for himself, he would hardly have failed to do greater justice to the Greek logicians. *What does he mean by saying," we have
little of the science till the revival of learning among the
Arabs?'' Are Averroes and Avicenna so greatly superior to
Alexander and Ammonius?

Speaking of the Schoolmen, he says, 'It may be sufficient to
observe, that their fault did not lie in their diligent study of
logic, and the high value they set upon it, but in their utterly
mistaking the true nature and object of the science; and by the
attempt to employ it for the purpose of physical discoveries,
invoking every subject in a mist of words, to the exclusion
of sound philosophical investigation. Their errors may serve
to account for the strong terms in which Bacon sometimes
appears to censure logical pursuits; but that this censure
was intended to bear against the extravagant perversions,
not the legitimate cultivation, of the science, may be proved
from his own observations on the subject, in his *Advancement
of Learning* (p. 8.) It has been long the fashion to attribu-
tate every absurdity to the schoolmen; it is only when a man of
talent like Dr Whately follows the example that a contra-
diction is worth while. The schoolmen, (we except always such
eccentric individuals as Raymond Lully,) had correcter notions
of the domain of logic than those who now contend them,
without a knowledge of their works: they certainly did not
attempt to employ it for the purpose of physical discoveries.
We pledge ourselves to refute the accusation whenever an effort
is made to prove it; till then we must be allowed to treat it as
a groundless though a common calumny. As to Bacon, we re-
collect no such reproach directed by him either against logic or
against the scholastic logicians. On the contrary, 'Logic,' he
says, 'doth not pretend to invent sciences, or the axioms of
sciences, but passeth it over with a cœptum in sua arte creden-
dam.'* And so say the Schoolmen; and so says Aristotle.

We are not quite satisfied with Dr Whately's strictures on
Locke, Watts, &c., but cannot afford the space necessary to
explain our views. One mistake in relation to the former we

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shall correct, as it can be done in a few words. After speak-
ing of Locke's animadversions on the syllogism, he says: 'He
(Locke) presently after inserts an encomium upon Aristotle, in
which he is equally unfortunate: he praises him for the "in-
vention of syllogisms," to which he certainly had no more
claim than Linnaeus to the creation of plants and animals, or
Harvey,' &c. (p. 19.) In the first place, Locke's words are,
invention of forms of argumentation,' which is by no means
convertible with 'invention of syllogisms,' the phrase attributed
to him. But if syllogism had been the word, in one sense it is
right, in another wrong. 'Aristotle,' says Dr Gillies, 'in-
vented the syllogism,' &c.; and in that author's (not in Dr
Whately's) meaning, this may be correctly affirmed. But, in
the second place, Dr Whately is wrong in thinking that the
word 'invention' is used by Locke, in the restricted sense in
which it is now exclusively employed, as opposed to discovery.
In Locke and his contemporaries, to say nothing of the older
writers, to invent is currently used for to discover. An example
occurs in the sentence of Bacon just quoted; and in this signi-
fication we may presume that 'invention' is here employed by
Locke.

But to proceed to the science itself: turning over a few
pages, we come to an error not peculiar to Dr Whately, but
shared with him by all logicians—we mean the modality of pro-
positions and syllogisms; in other words, the necessity, possi-
bility, &c., of their matter, as an object of logical considera-

It has always been our wonder, how the integrity of logic has
not long ago been purified from this metaphysical admixture.
Kant, whose views of the nature and province of the science
were peculiarly correct, and from whose acuteness, after that
of Aristotle, every thing might have been expected, so far from
jecting the modality of propositions and syllogisms, again
sanctioned its right of occupancy, by deducing from it, as an
essential element of logical science, the last of his four ge-
eric categories, or fundamental forms of thought. Nothing,
however, can be clearer, than that this modality is no object of
logical concernment. Logic is a formal science; it takes no
consideration of real existence, or of its relations, but is occu-
pied solely about that existence and those relations which arise
through, and are regulated by, the conditions of thought itself.
Of the truth or falsehood of propositions, in themselves, it
knows nothing, and takes no account; all in logic may be held
true that is not conceived as contradictory. In reasoning, logic
guarantees neither the premises nor the conclusion, but merely
the consequence of the latter from the former; for a syllogism

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is nothing more than the explicit assertion of the truth of one proposition on the hypothesis of other propositions being true in which that one is implicitly contained. A conclusion may thus be true in reality (an assertion), but not logically fall (as an inference).

But if truth or falsehood, as a material quality of propositions and syllogisms is extralogical, so also is their modality. Necessity, Possibility, &c., are circumstances which do not affect the logical copula: the logical inference. They do not relate to the connexion of the subject and predicate of the antecedent and consequent, as terms in thought, as realities in existence; they are metaphysical, not logical conditions. The syllogistic inference is always necessary: it is modified by no extraformal condition; it is equally apodictic in contingent as in necessary matter.

If such introduction of metaphysical notions into logic is once admitted, there is no limit to the intrusion. This is indeed shown in the vacillation or indefinitude of Aristotle himself in regard to the number of the modes. In one passage (De Interp. c. 12, § 1), he enumerates four—the necessary, the impossible, the contingent, the possible; and this determination has been generally received among logicians. In another (Ibid. c. 9) he adds to these four modes two others, viz. the true, and, consequently, the false. Some logicians have accordingly admitted, but exclusively, these six modes; but modern interpreters, however, very properly observe, though they made no use of the observation, that Aristotle did not mean by these enumerations to limit the number of modes to four or six, but thought only of signifying the more important. Modes may be conceived without end; as the certain, the probable, the useful, the good, the just—and what not? All, however, must be admitted into logic if any are the line of distinction attempted to be drawn is futile. Such was the confusion and intricacy occasioned by the four modes alone, that the doctrine of modals long formed, not only the most useless, but the most difficult and disgusting branch of logic. It was at once the criterium et crux ingeniorum. 'De modali non gustabit asinas,' said the schoolmen; 'De modali non gustabit logicos,' say we. This subject was only perplexed because different sciences were jumbled in it together; and modals ought entirely on principle, as they have almost entirely in practice, to be relegated from the domain of logic, and consigned to the grammarians and metaphysicists. This was, indeed, long ago obscurely perceived by a profound but now forgotten thinker. 'Pronunciata ills,' says Vives, 'quibus additur modus, non dialecticam sed grammaticam.

'carn questionem habent,' ete.; and Ramus also felt the propriety of their exclusion, though he was equally unable to explicate their reasons.

Dr. Whately has very correctly stated, that 'it belongs exclusively to a syllogism, properly so called, i.e. a valid argument, so stated that its conclusiveness is evident from the mere form of the expression,) that if letters, or any other unmeaning symbols, be substituted for the several terms, the validity of the argument shall still be evident,' (p. 37.) Here logic appears, in Dr. Whately's exposition, as it is truly, a distinct and self-sufficient science. What, then, are we to think of the following:— Should there be no sign at all to the common term, the quantity of the proposition (which is called an indefinite proposition) is ascertained by the matter—i.e. the nature of the connexion between the extremes, which is either necessary, impossible, or contingent, &c. (p. 64.) As it is evident that the truth or falsity of any proposition (its quantity and quality being known) must depend on the matter of it, we must bear in mind, that in necessary matter all affirmatives are true, and negatives false; in impossible matter vice versa; in contingent matter, all universals false and particulars true: e.g. "all islands, or some islands, are surrounded by water," must be true, because the matter is necessary: to say, "no islands, or some—not," &c., would have been false: again, "some islands are fertile, some are not fertile," are both true, because it is contingent matter: put "all" or "no" instead of "some," and the propositions will be false,' (p. 67.)—In these passages, logic is reduced from an independent science to a scientific accident. Necessary, impossible, and contingent matter, are terms expressive of certain lofty generalizations from an extensive observation of real existence; and logic, inasmuch as it postulates a knowledge of these generalizations, postulates its own degradation into a precurious appendage—a fortuitous sequel, of all the sciences from which that knowledge must be borrowed. If in syllogisms, unless unmeaning symbols can be substituted for the several terms, the argument is either unsound or sophistical,—why does not the same bold good in propositions, of which syllogisms are but the complement? But A, B, and C, know nothing of the necessary, impossible, and contingent. Is logic a formal science in one chapter, a real science in another? Is it independent, as a constituted whole; dependent in its constituent parts?

We cannot pass without notice Dr. Whately's employment of the term argument. This word he defines, and professes to use in a 'strict logical sense,' and gives us, moreover,
under a distinct head, a formal enumeration of its other various significations in ordinary discourse. The true logical acceptance of the term; he, however, not only does not employ, but even absolutely overlooks; while, otherwise, his list of meanings is neither well discriminated, nor at all complete. We shall speak only of the logical omission and mistake.—'Reasoning (or discourse) expressed in words is argument; and an argument stated at full length, and in its regular form, is called a syllogism; the third part of logic, therefore, treats of the syllogism. Every argument consists of two parts; that which is proved; and that by means of which it is proved,' &c.

And on this, in a note, he adds; 'I mean, in the strict technical sense; for, in popular use, the word 'Argument' is often employed to denote the latter of these two parts alone: e. g., this is an argument to prove so and so,' &c., p. 72. Now, the signification here (not quite correctly) given as the 'popular use' of the term is nearer to the 'strict technical sense' than that which Dr. Whately supposes to be such. In technical propriety argument cannot be used for argumentation, as is done by Dr. Whately—but exclusively for its middle term. In this meaning the word (though not with uniform consistency) was employed by Cicero, Quintilian, Boethius, &c.; it was thus subsequently used by the Latin Aristotelians, from whom it passed even to the Ramists; * and this is the meaning which the expression always first and most naturally suggests to a logician. Of the older dialecticians, Crackanthorpe is the only one we recollect, who uses, and professes to use, the word not in its strict logical signification, but with the vulgar as convertible with Reasoning. In vindicating his innovation, he, however, misrepresents his authorities. Sanderson is, if we remember, rigidly correct. The example of Crackanthorpe, and of some French Cartesians, may have seduced Wallis; and Wallis's authority, with his own ignorance of logical propriety, determined the usage of Aldrich—and of Oxford. We say again Aldrich's ignorance; and the point in question supplies a significant example. 'Terminus tertius (says he) cui questionis extrema comparatur, Aristotelii Argumentum, vulgo Medium.' The reverse would be correct;—

*Ramus, in his definitions, indeed, abusively extends the word to both the other terms; the middle he calls the tertium argumentum. Throughout his writings, however—and the same is true of those of his friend Tallem—argumentum, without an adjective, is uniformly the word used for the middle term of a syllogism; and in this he is followed by the Ramists and Semi-Ramists in general.
scholastic slime, avoided the needless confusion to which we object.

Aldrich," says our author, "has stated, through a mistake, that Aristotle utterly despised hypothetical syllogisms, and thence made no mention of them; but he did indicate his intention to treat of them in some part of his work, which either was not completed by him according to his design, or else (in common with many of his writings) has not come down to us," (p. 104.) Any ignorance of Aristotle on the part of Aldrich is conceivable, but in his censure Dr Whately is not himself correct. With the other Oxford logicians he never doubts the Συναγωγάς καὶ ἐποίησις of Aristotle and our hypothetical syllogisms to be the same. In this error, which is natural enough, he is not without associates even of distinguished name. Those versed in Aristotelic and logical literature are, however, aware, that this opinion has been long, if not exploded, at least rendered extremely improbable. We cannot at present enter on the subject, and must content ourselves with stating that hypothetical syllogisms, in the present acceptation, were first expounded, and the name first applied to them by Theophrastus and Eudemus. The latter, indeed, clearly discriminated such hypothetical syllogisms from those of Aristotle; and, what has not, to the believe, been observed, even Boethius expressly declares the Συναγωγάς καὶ ἐποίησις of the philosopher to be really categorical, while in regard to the Συναγωγάς καὶ ἐποίησις, there is no ground of doubt. The only reason for hesitation arises from the passage (Analyt. Pr. i. 44, § 4,) in which it is said, that there are many other syllogisms concluding by hypothesis, and these the philosopher promises to discuss. Of what nature these were, we have now no means even of conjecture. If we judge from Aristotle's notion of hypothesis, and from the syllogisms he calls by that name, we should infer that they had no analogy to the hypotheticals of Theophrastus; and it will immediately be seen, that a complete revolution in the nomenclature of this branch of logic was effected subsequently to Aristotle. We may add, that no reliance is to be placed in the account given by Parius of the Aristotelic doctrine on this point: he is at variance with his own authorities, and has not attentively studied the Greek logicians.

So far we state only the conclusions of others. The following observation, as farther illustrating this point, will probably surprise those best qualified to judge, by its novelty and paradox. It must appear, indeed, at first sight ridiculous to talk at the present day of discoveries in the Organon. The certainty of the fact is, however, equal to its improbability. The term Categorical (κατηγορικός), applied to proposition or syllogism, in contrast to Hypothetical (ἐποίησις), we find employed in all the writings extant of the Peripatetic School, subsequent to those of its founder. In this acceptation it is universally applied by the interpreters of Aristotle up to the Aphrodisian, and previous to him we certainly know that it was so used by Theophrastus and Eudemus. Now, no logician, ancient or modern, has ever remarked that it was not understood in this signification by the philosopher himself. The Greek commentators on the Organon, indeed, once and again observe, in particular places, that the term Categorical is there to be interpreted affirmative: but none has made the general observation, that it was never applied by Aristotle in the sense in which it was exclusively usurped by themselves. But so it is. Throughout the Organon there is not to be found a single passage in which categorical stands opposed to hypothetical, (ἐποίησις); there is not a single passage in which it is not manifestly used in the meaning of affirmative, as convertible with κατηγορικός, and opposed to ἐποίησις and ἐκτάσεις. Nor is the induction scanty. In the Prior Analytics alone the word occurs at least eighty-five times.—Nay, farther, as this never was, so there is another term always employed by Aristotle in contrast to his syllogisms by hypothesis. The syllogisms of this class, (whether they conclude by agreement, or through a reducitur ad absurdom,) be uniformly opposed to those which conclude διότι, δι' ἀσπασμος; and the number of passages in which this opposition occurs are not a few.—Categorical, in our signification, is thus not of Aristotelic origin. The change in the meaning of the term was undoubtedly, we think, introduced by Theophrastus. The marvel is, that no logician or commentator has hitherto signalized the contrast between the Aristotelic signification of the word, and that which has subsequently prevailed.

We may allude (we can do no more) to another instance, in which Aristotle's meaning has been almost universally mistaken; and to the authority of this mistake we owe the introduction of an illogical absurdity into all the systems of logic. We refer to the Enthymeme. On the vulgar doctrine this is a species of reasoning, distinguished from the syllogism proper, by having one or other of its premises not expressed but understood; and this distinction, without a suspicion either of its legitimacy or origin, is fluttered on the Stagirite. The division of syllogism and enthymeme, in this sense, would involve nothing less than a discrimination of species between the reasoning of logic and the reasoning of ordinary discourse; syllogism being the form
peculiar to the one, enthymeme that appropriate to the other. Nay, even this distinction, if admitted, would not avail; syllogism and enthymeme being distinguished as two intralogical forms of argumentation. Those who defend the distinction are thus driven back on the even greater absurdity—of establishing an essential difference of form, on an accidental variety of expression—of maintaining that logic regards the accident of the external language, and not the necessity of the internal thought. This, at least, is not the opinion of Aristotle. *Syllogism and Demonstration,* (says he,) 'belong not to the outward discourse, but to the discourse that passes in the mind,' 'On περὶ τῶν ἐν τῷ λόγῳ ἐκ προκείμενου, οὐκέτι περὶ τῶν ἐν τῷ λόγῳ, ἀλλὰ τυχερονομίαν.' (*Analyt. Post. i. 10, § 7.* But if the distinction, in its general nature, is unphilosophical, it is still more irrational at the hands of its reputed author. For Aristotle distinguishes the enthymeme from the pure syllogism, as a reasoning of a peculiar matter—from signs and likelihoods; so that if he over-and-above discriminated these by an accident of form, he would divide the genus by two differences, and differences also of a merely contingent association. Yet, strange to say, this improbability has been believed—believed without any cogent evidence—believed from the most ancient times; and even when the opinion was at last competently refuted, the refutation was itself so immediately forgotten, that we do not believe there is at present a logical author—not to say in England, but—in Europe, who is even aware of the existence of the controversy."

A discussion of the question would exceed our limits. For those who may wish to study the point—it would be a pretty subject for an Oxford pamphlet—we may briefly indicate the sources of information. Our references, though few, will be found to exhaust the subject.

Towards the conclusion of the fifteenth century, the celebrated Rodolphus Agricola, (+1485,) in his posthumous book, *De Inventione Dialectica,* recognises it as doubtful, whether Aristotle meant to discriminate the Enthymeme from the Syllogism, by any peculiarity of form; and Phrisseminius in his *Scholia* on that book, (1528,) shows articulately that the common opinion was at variance with the statements of the Philosopher. Without, it is probable, any knowledge of Phrisseminius, the matter was discussed by Majoragus, in his *Reprehensiones contra Nicolum,* and his *Explanations in Aristotelis Rhetorican,* the latter in 1572. Twenty-five years thereafter, Julius Paccius (who was not apparently aware of either) argued the whole question on far broader grounds; and, in particular, on the authority of four Greek MSS., ejected as a gloss the term ἄτονος, (*Analyt. Pr. ii. 27, § 3,* on which the argument for the common doctrine mainly rests; which has been also secretly done by the Bern Academicians, in their late splendid edition of Aristotle's works, on two of the three MSS. of the Organon they collated. We may notice that the Masters of Louvain, in their commentary on the logical treatises of Aristotle, (1547,) observe that the word imperfectus (translation of ἄτονος) is not to be found in many MSS. of the old Latin version. Scacynus, in his *Paraphrasis in Organon,* (1599,) adopts the opinion without arguing the question; and Paccius does not seem to have been aware even of the Commentary of Paccius, published three years before. About 1620, Corydalaus, bishop of Mitilene, who had studied in Italy, maintained in his *Logic* the opinion of Paccius, but without additional corroboration. In his *Rhetoric,* (reprinted from Fabricius, in the *Bibliothea Gracca*) he adores to the vulgar doctrine. A century thereafter, Faciolini expanded the argument of Paccius—for he, as the others, was ignorant of Majoragus, and Phrisseminius, and adds nothing of his own except an error or two—into a special *Aeciomana*; but his eloquence was not more effective than the reasoning of his predecessors; and the question again fell into complete oblivion. Any one who competently argues the point, will have both to supply and to correct.

*For example:*—Paccius (whom Faciolini, by rhetorical hyperbole, pronounced *Aristotelis Interpres, quot sunt, quoque fuerunt, quotque futuri sunt, longe praeantissimus,* establishes as one of the main pillars of his argument, that the Greek interpreters did not acknowledge the term ἄτονος—quomiam Johannes Grammaticus hic nullum ejus mentionem facit; et tam ipse, quam Alexander superiori libro explicantibus definitionem syllogismi ab Aristotele traditam, ac distinguens syllogismum ab argumentatione constante ex una propositione, non vocant hanc argumentationem enthymema, sed syllogismum *parodoxanum,* (Comm. in *Analyt. Pr. ii. 27, § 8.*—Paccius is completely wrong. Philopoenus, on the place in question (*Analyt. Pr. ii. c. 27, § 3,* states indeed, (as far as we recollect, for our copy of his Commentary is not at hand,) nothing to the point; but the falsity of such negative evidence is shown in his exposition of the *Posterior Analytics,* where he says, *ἐν τούτῳ όμοιον συνεχείας, καθαύτου τε καὶ κανονικώς τῷ μιᾷ ἐν μίᾳ συνεχείᾳ.* (E. A. E. Ed. Ald. 1594.) How inac—
We proceed to consider a still more important subject—the nature of the Inductive inference; and regret that we cannot echo the praises that have been bestowed on Dr Whately's analysis of this process. We do not, indeed, know the logician who has clearly defined the proper character of dialectical induction, and there are few who have not in the attempt been guilty of the grossest blunders. Aristotle's doctrine on this point, though, meagre, is substantially correct; but succeeding logicians, in attempting to improve upon their master, have only corrupted what they endeavoured to complete. As confusion is here a principal cause of error, we must simplify the question by some preliminary distinctions and exclusions.

The term Induction (εἰσαγωγή) has been employed to denote three very different things:—1. The objective process of investigating particular facts as preparatory to illusion;—2. A material illusion of the universal from the singular, warranted either by the general analogies of nature, or by special presump-


curato also Pacius is in regard to Alexander, (whose interpretation of the second book of the Prior Analytics, which contains the passage in question, is still in MS., and probably spurious,) may be seen by referring to his Commentary on the first book of the Prior Analytics, (f. 7 a b. Edit. Ald. 1534,) compared with his Commentary on the Topics, (pp. 6, 7, Edit. Ald. 1513.) This last we shall quote. He is speaking of Aristotle's definition of the Syno- gram:—Γεύμα τινα ἐπὶ ἓν ἄλλω, ἵνα ἐπίδημα, ἵνα προκύπτο, ἵνα υπαρξῃ, etc. But—ιε, καὶ συλλογικά τά κόλας ἔπειτα πάντα ὅσα ἐν ἰδίῳ ἄλλῳ ἄλλω.

... Τιμίας ἐπὶ ἓν καὶ ἵνα συλλογικά τά κόλας ἔπειτα πάντα ἄλλω.

... Αἰσχύλου, ἐπὶ ἓν καὶ ἵνα συλλογικά τά κόλας ἔπειτα πάντα ἄλλω.

... Αἰσχύλου, ἐπὶ ἓν καὶ ἵνα συλλογικά τά κόλας ἔπειτα πάντα ἄλλω.

... Αἰσχύλου, ἐπὶ ἓν καὶ ἵνα συλλογικά τά κόλας ἔπειτα πάντα ἄλλω.

It is manifest, in these passages, it is manifest against Pacius,—1. That the ο��νάσταμα was used by the oldest commentators on Aristotle in the modern signification, as a syllogism of one expressed premise; and, 2. That the συλλογικά κόλας was not for the first time, by Aristotlean, but Stoical School, Boethius, and all the later Greek logicians, favour the common opinion. Their authority is, however, of little weight, and the general result of the argument stands unaffected.—In these errors, it is needless to say that Pacius is followed by Corydalenus and Faciolati.

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The two first processes to which the name of Induction has been given, being thus excluded, it remains only to say a few words in explanation of that Induction, with which alone logic is concerned, but the nature of which has, by almost all logicians, been wholly misrepresented.

Logic does not consider things as they exist really and in themselves, but only the general forms of thought under which the mind conceives them; in the language of the schools, logic is conversant, not about first, but about second notions. Thus a logical inference is not determined by any objective relation of Causality subsisting between the terms of the premises and conclusion, but solely by the subjective relation of Reason and Consequence, under which they are construed to the mind in thought. The notion conceived as determining, is the reason or antecedent; the notion conceived as determined, is the consequent. Now, the mind can think two notions under the formal relation of reason and consequence, only in one or other of two modes. Either the determining notion must be conceived as a whole, containing, and therefore necessitating, the determined notion, conceived as its contained part or parts:—or the determining notion must be conceived as the parts constituting, and, therefore, necessitating the determined notion, conceived as their constituted whole. Considered, indeed, absolutely and in themselves, the whole and all the parts are identical. Relatively, however, to us, they are not; for in the order of thought, (and logic is only conversant with the laws of thought,) the whole may be conceived first, and then by mental analysis separated into its parts; or the parts may be conceived first, and then by mental synthesis collected into a whole. Logical inference is thus of two, and only of two, kinds:—it must proceed either from the whole to the parts, or from the parts to the whole; and it is only under the character of a constituted or containing whole, or of a constituting or contained part, that any thing can become the term of a logical argumentation.

Before proceeding, we must, however, allude to the nature of the whole and part, about which logic is conversant. These are not real or essential existences, but creations of the mind itself, in secondary operation on the primary objects of its knowledge. Things may be conceived the same, inasmuch as they are conceived the subjects of the same attribute, or collection of attributes, (i.e. of the same nature): inasmuch as they are conceived the same, they must be conceived as the parts constituent of, and contained under, a whole; and as they are conceived the same, only as they are conceived to be the subjects of the same nature, this common nature must be convertible with that whole. A logical or universal whole is called a genus when its parts are also containing wholes or species; a species when its parts are only contained parts or individuals.

Such being the nature and relations of a logical whole and parts, it is manifest what must be the conditions under which the two kinds of logical inference are possible. The one of these, the process from the whole to the parts, is Deductive reasoning, (or Syllogism proper); the other, the process from the parts to the whole, is Inductive reasoning. The former is governed by the rule—What belongs (or does not belong) to the containing whole, belongs (or does not belong) to each and all of the contained parts. The latter by the rule—What belongs (or does not belong) to all the constituent parts, belongs (or does not belong) to the constituted whole. These rules exclusively determine all formal inference; whatever transcends or violates them, transcends or violates logic. Both are equally absolute. It would be not less illegal to infer by the Deductive syllogism an attribute, belonging to the whole, of something it was not conceived to contain as a part; than by the Inductive, to conclude of the whole, what is not conceived as a predicate of all its constituent parts. In either case, the consequent is not thought as determined by the antecedent;—the premises do not involve the conclusion.

The Deductive and Inductive processes are elements of logic equally essential. Each requires the other. The former is only possible through the latter; and the latter is only valuable as realizing the possibility of the former. As our knowledge commences with the apprehension of singulars, every universal whole is consequently only a knowledge at second-hand. Deductive reasoning is thus not an original and independent process. The universal major proposition, out of which it develops the conclusion, is itself necessarily the conclusion of a foregone Induction, and, mediatly or immediately, an inference—a collection, from individual objects of perception, and consciousness. Logic, therefore, as a definite and self-sufficient science, must equally vindicate the formal parity of the synthetic ilation, by which it ascends to its wholes, as the analytic ilation by which it re-descends to their parts. *

Not only is the Deductive thus, in a general way, dependent for its possibility on the Inductive syllogism; the former is, what has not been observed, in principle and detail, in whole

* See Note, page 296.
and in part, in end and in means, in perfection and imperfection, precisely an inverted counterpart of the latter. The attempts that have been made by almost every logician, except (perhaps?) Aristotle, to assimilate and even identify the two processes, by reducing the Inductive syllogism to the schematic proprieties of the Deductive—proceeding as they do on a total misconception of their analogy and differences, have contributed to involve the doctrine of Logical Induction in a cloud of error and confusion. The Inductive inference is equally independent, and, though far less complex, equally worthy of analysis as the Deductive; it is governed by its own laws; and, if judged aright, must be estimated by its own standard. The correlation of the two processes is best exemplified by employing the same symbols in our ascent through an Inductive, and our re-descent through a Deductive syllogism.

\[
\begin{align*}
\text{Inductive}. & \quad \text{Deductive}. \\
x, y, z & \text{ are } A; \quad B \text{ is } A; \\
x, y, z & \text{ are (whole) } B; \quad x, y, z \text{ are (under) } B; \\
\text{Therefore, } B & \text{ is } A. \quad \text{Therefore, } x, y, z \text{ are } A. \\
\text{or} & \quad \text{or} \\
A \text{ contains } x, y, z; & \quad A \text{ contains } B; \\
\text{Therefore, } A & \text{ contains } B. \quad \text{Therefore, } A \text{ contains } x, y, z. 
\end{align*}
\]

These two syllogisms exhibit, each in its kind, the one natural and perfect figure. This will be at once admitted of the Deductive which is in the first. But the Inductive, estimated, as it has always been, by the standard of the Deductive, will appear a monster. It appears on that standard only in the third figure; * and then, contrary to the rule of that figure it has an universal conclusion. (V. Analyt. Pr. i. 22, § 8.) But when we look less partially and more profoundly into the matter, our con-

* We say 'it appears,' &c., because, though so held by logicians, it is not. The mistake arose from the ambiguity of the copula or substantive verb, which in different relations expresses either * are contained under * or * constitute. Thus, taking Aristotle's example:

- Man, Horse, Mule, are long lived;
- Therefore, the whole class of animals wanting bile are long lived.

Now here it is evident that the subject stands in a different relation to its predicate in the major and in the minor premise; though in both cases the connexion is expressed by the same copula. In the former the * are expresses that the predicate determines the subject as a contained part; in the latter, that the subject determines the predicate by constituting it a whole. Explicitly thus:

- Long-lived—contains—Man, Horse, Mule;
- Man, Horse, Mule—constitute—animal wanting bile;
- Therefore, Long-lived—contains—animal wanting bile.

That the logicians have neglected to analyze the Inductive inference as an independent process, and attempted to reduce it to the conditions of the Deductive; is the cause or the effect of a primary deficiency in their technical language. They have no word to express the synthesis of a logical whole. The word constitute, &c., which we have, from necessity, employed in this sense, belongs properly to the relations of an Essential (Physical or Metaphysical) whole, and parts.
for example, what logicians have in general given as the perfected figure, but which is, in fact, an unnatural perversion of the Inductive syllogism, i.e., its reduction to the first figure, by converting the terms of the minor premise, we shall find that its reversal into a Deductive syllogism affords, as we should have anticipated, only a kindred imperfection (in the third figure.)

\[ \text{Inductive.} \\
\begin{align*}
  x, y, z & \text{ are } A; \\
  B & \text{ is } A; \\
  B \text{ is } x, y, z; \\
\end{align*} \\
\begin{align*}
  \text{Therefore, } B & \text{ is } A. \\
  \text{or} \\
  A & \text{ contains } x, y, z; \\
  x, y, z & \text{ contain } B; \\
\end{align*} \\
\begin{align*}
  \text{Therefore, } A & \text{ contains } x, y, z. \\
  \text{or} \\
  & \text{Deductive.} \\
  x, y, z & \text{ are } A; \\
  B & \text{ is } A; \\
  B & \text{ is } x, y, z; \\
\end{align*} \\
\begin{align*}
  \text{Therefore, } x, y, z & \text{ are } A. \\
  \text{or} \\
  x, y, z & \text{ contain } B; \\
  x, y, z & \text{ contain } B; \\
\end{align*} \\
\begin{align*}
  \text{Therefore, } A & \text{ contains } x, y, z. \\
  \text{or} \\
  & \text{We call this reduction of the Inductive syllogism an unnatural perversion; because in the converted minor premise the constituent parts are perverted into a containing whole, and the containing whole into a subject, contained under its constituent parts. After these hints of what we deem the true nature of logical Induction, we return to our author.}

Dr. Whately's account of Induction is principally given in two passages. We shall quote them both. The first:—'Logic takes no cognisance of Induction, for instance, or of a priori reasoning, &c., as distinct forms of argument; for when thrown into the syllogistic form, and when letters of the alphabet are substituted for the terms, (and it is thus that an argument is properly to be brought under the cognisance of logic,) there is no distinction between them; e.g., a 'Property which belongs to the ox, sheep, deer, goat, and antelope, belongs to all horned animals; ruminating belongs to these; therefore to all.' This, which is an inductive argument, is evidently a syllogism in Barbara. The essence of an inductive argument (and so of the other kinds which are distinguished from it) consists not in the form of the argument, but in the relation which the subject-matter of the premises bears to the conclusion,' (p. 110.) The second:—'In the process of reasoning by which we deduce, from our observation of certain known cases, an inference with respect to unknown ones, we are employing a syllogism in Barbara with the major premis suppressed; that being always substantially the same, as it asserts, that, 'what belongs to the individual or individuals we have examined, belongs to the whole class under which they come,'"' (p. 216.)—This statement is consistent neither with the Aristotelic doctrine nor with truth.

We must presume, from his silence, that our author, in his analysis of the inductive process, was not aware of any essential deviation from the doctrine of Aristotle. This he does not seem to have studied either in the Organon or in any of its authentic expositors; and nothing can be conceived more contradictory than the statements of the philosopher on this subject and those of Dr. Whately. Aristotle views the Inductive and the Deductive syllogisms as in certain respects similar in form; in others, as diametrically opposed. Dr. Whately regards them as formally identical, and only discriminated by a material difference, i.e., logically considered, by no difference at all. Aristotle regards the Deductive syllogism as the analysis of a logical whole into its parts,—as a descent from the (more) general to the (more) particular; the Inductive as a synthesis of logical parts into a logical whole,—as an ascent from the (more) particular to the (more) general. Dr. Whately, on the other hand, virtually annihilates the latter process, and identifies the Inductive with the Deductive inference. Aristotle makes Deduction necessarily dependent on Induction; he maintains that the highest or most universal axioms which constitute the primary and immediate propositions of the former, are all conclusions previously furnished by the latter. Whately, on the contrary, implicitly asserts the independence of the syllogism proper, as he considers the conclusions of Induction 'to be only inferences evolved from a more universal major. Aristotle recognises only a perfect Induction, i.e., an enumeration (actual or presumed) of all the parts; Whately only an imperfect, i.e., an enumeration professedly only of some. To Aristotle Induction is a syllogism, apparently, of the third figure; to Whately a syllogism of the first. If Whately, Aristotle is fundamentally wrong; wrong in admitting Inductive reasoning within the sphere of logic at all; wrong in discriminating Induction from syllogism; wrong in all the particulars of the contrast.

But that the Philosopher is not in error is evident at once; the Archbishop's doctrine is palpably suicidal. On that doctrine the Inductive reasoning is a syllogism in Barbara, the major premise being always substantially the same,—'What belongs to the individual or individuals we have examined, belongs to the whole class under which they come.'—Now, we ask, in what manner do we obtain this major, in the evolution of which all Induction consists? To this question there are only four possible answers:—1. This proposition, (like the dictum de omni et nullo, and the axiom of the convertibility of the whole and its parts,) it may be said is (analytically) self-evident, its negation implying a contradiction. This answer is manifestly false; for so far from
being necessitated by the laws of thought, it is in opposition to them; the whole of the consequent not being determined in thought by the same of the antecedent. It may be said to be acquired by Induction. That, however, would be absurd; inasmuch as Induction itself is, ex hypothesi, only possible through and after the principle it is thus adduced to construct. This of the proposition as a whole. The same is also true of its parts. Class is a notion, itself the result of an Induction; it cannot, therefore, be postulated as a pre-requisite or element of that process itself. A similar remark applies to ‘property.’

3. It may be said to be deduced from a higher axiom. What then is such axiom? That has not been declared. And if such existed, the same questions would remain to be answered regarding the higher proposition which are now required in relation to the lower. It may be said to be (as Kant would say, synthetically) given as an ultimate principle of our intellectual constitution. This will not do. In the first place, if such principle exist, it only inclines, it does not necessitate. In the second, by appealing to it, we should transcend our science, confound the logical and formal with the metaphysical and material. In the third, we should thus attempt to prove a logical law from a psychological observation; i.e., establish an a priori necessary science on a precarious basis—an experience admitted, perhaps, by the disciples of Reid and Royer-Collard; but scouted by those of Aristotle and Locke. Logicians, we already observed, have been guilty of a fundamental error in bringing the distinction of perfect and imperfect Induction within the sphere of their science, as this distinction proceeds on a material, consequently on an extralogical difference. In this error, however, Dr Whately exceeds all other logicians, recognising, as he does, exclusively, that Induction, which is only precariously valid, and valid only through an extralogical presumption. This common major premise, if stated as necessary, is (formally and materially) false; if stated as probable, it is (formally) illegitimate, even if not (materially) untrue, both because an inferior degree of certainty is incompatible with an apodictic science, and because the amount of certainty itself must, if not capriciously assumed, be borrowed from evidence.

* It is by induction, that all axioms are known, such as, ‘Things that are equal to the same are equal to one another;’ ‘A whole is greater than its parts;’ and all other mathematical axioms.” [Hilfeke, p. 192. The same doctrine is held by Hill, p. 176. Is such the Oxford Metaphysics?]

dependent on material conditions beyond the purview of a formal science.

Dr Whately is not less unfortunate in refuting the opinions of other logicians touching induction, than in establishing his own. ‘This process, he says, ‘we are employing a syllogism in Barbara with the major premise suppressed; not the minor, as Aldrich represents it. The instance he gives will sufficiently prove this: “This and that, and the other magnet, attract iron; therefore so do all.” If this were, as he asserts, an enthymeme whose minor is suppressed, the only premise which we could supply to fill it up would be, “all magnets are this, that, and the other;” which is manifestly false,’ (p. 217.) Aldrich has faults sufficient of his own, without taking burden of the sins of others. He is here singly reprehended for saying only what, his critic seems not aware, had been said by all logicians before him. The suppressed minor even obtained in the schools the name of the constancia; and it was not until the time of Wolf that a new-fangled doctrine, in this respect the same as Whately’s, in some degree superseded the older and correcter theory. ‘In the example of Aldrich,’ says our author, ‘the suppressed minor premise, “all magnets, that, and the other,” is manifestly false. Why? Is it because the proposition affirms that a certain three magnets (“this, that, and the other”) are all magnets? Even admitting this, the objection is null. The logician has a perfect right to suppose this or any other material falsity for an example; all that is required of him is, that his syllogism should be formally correct. Logic only proves on the hypothetical truth of its antecedents. As Magenta notices, Aristotle’s example of Induction is physiologically false; but it is not on that account a whit the worse as a dialectical illustration. The objection is wholly extralogical. But this is not in fact the meaning of the proposition. The words (in the original (‘hic et ille, et iste magnus’) are intended to denote every several magnet. Aldrich borrows from Sanderson, by whom it is also more fully expressed:—‘Iste magnus tranit ferrum, et ille, et hic, et pariter se habet in reliquis.’ &c. Perhaps, however, and this is the only possible alternative, Dr Whately thinks the assumption ‘manifestly false’ on the ground that no extent of observation could possibly be commensurate with all magnets. This objection likewise lies beyond the domain of the science. The logician, qua logician, knows nothing of material possibility and impossibility. To him all is possible that does not involve a contradiction in terms. At the same time, the present is merely the logical manner of wording the proposition. The physical observer asserts on the analogy
we regard the object as included. A more attentive examination suggests to us less obvious points of resemblance between this object and some of those with which we had classed it before. Thus carrying on the analysis—and by the power of abstraction giving an independent existence to those successive points of resemblance—we obtain subaltern genera or species, or subordinate classes included in that original class with which the process of abstraction commenced. As these succeeded, and the abstractions were relative to each other, and independent of each other, the definition of any class which we first commenced the definition of any notion requires a successive enumeration of the several classes in the line of abstraction, and hence is said technically to consist of genus and differentia; the genus being the first abstraction, or class to which the object is first referred, and the differentia being the subordinate classes in the same line of abstraction. Now, the process by which we discover these successive genera is strictly one of philosophical induction. As in the philosophy of nature in general, we take certain facts as the basis of inquiry, and proceed by rejection and exclusion of principles involved in the enquiry, until at last—there appearing no ground for further rejection—we conclude that we are in possession of the true principle of the object examined; so, in the philosophy of language, we must proceed by a like rejection and exclusion of notions implied in the general term with which we set out, until we reach the very confines of the notion of it with which our enquiry is concerned. This exclusion is effected in language, by annexing to the general term denoting the class to which the object is primarily referred, other terms not including under them those other objects or notions to which the general term applies. For thus, whilst each successive term in the definition, in itself, extends to more than the object so defined,—yet all viewed together do not; and this their relative bearing on the one point constitutes the being of the thing. **If we are enquiring,** he says, **what magnanimity is, we must consider the instances of certain magnanimous persons whom we know, what one thing they all have so far forth as they are such as, if Alcibiades was magnanimous, or Achilles, or Ajax,—what one thing they all have; say, "impatience under insult"; for one made war, another raged, the other slew himself. Again, in the instances of others, as of Lycurgus or Socrates,—if there is, "to be unshaken by prosperity or adversity?"—taking these two cases, I consider what this "apathy in regard to events," and "impatience under insult," have the same in them. "If, now, they have nothing the same, there must be two species of magnanimity." **(P. 513.)**

Mr Hampden afterwards states, inter alia, that the induction of Aristotle, having for its object to determine accurately in **words the notion of the being of things, proceeds, according to the nature of language, from the general, and ends in the particular; whereas the investigation of a law of nature proceeds from the particular, and ends in the general. Dialectical induction is synthetical, whilst philosophical induction is analytical in the result.** On this ground, he explains the
meaning of the term (ἐπεξεργάζεται), and defends the Induction of Aristotle against its disparagement by Lord Bacon.

We had imagined that every compend of logic explained the two grand methods of investigating the definition; but upon looking into the Oxford treatise on this science, we were surprised to find, that this, among other important matters, had in all of them been overlooked. This may, in part, enable us to surmise how Mr. Hampden could have so misconceived so elementary a point as to have actually reversed the doctrine, not only of Aristotle, but of all other philosophers. A few words will be sufficient to illustrate the nature of the error.

In the thirteenth chapter (Pacioli division) of the second book of the Posterior Analytics, Aristotle treats of the manner of hunting out, as he terms it, the essential nature (ὁ νόμιμος, quidditas) of a thing, the enunciation of which nature constitutes its definition. This may be attempted in two contrary ways. By the one, we may descend from the category, or higher genus of the thing to be defined, dividing and subdividing it through the opposite differences till we reach the genus under which it is proximately contained; and this last genus, along with the specific difference by which it is divided, will be the definition required. By the other, we may ascend from the singulars contained under the thing to be defined (which is necessarily an universal) by an exclusion of their differences, until we attain an attribution common to them all, which attribution will supply the definition sought. The former of these is, after Plato, called by Aristotle, and logicians in general, the method of Division; the higher genus being regarded as the (universal) whole, the subaltern genera and species as the (subjective) parts into which it is divided. The extension here determines the totality. The latter, which is described but not named by Aristotle, is variously denominated by his followers. Some, as his Greek commentators, taking the totality as determined by the comprehension, view the singulars as so many (essential) wholes, of which the common attribute or definition is a part, and accordingly call this mode of hunting up the essence the Analytic; others again, regarding the genus as the whole, the species and individuals as the parts, style it the Compositio, or Synthetic, or Collective;* while others, in fine, looking

simply to the order of the process itself, from the particular to the general, name it the Inductive. These last we shall imitate.

Now, in the chapter referred to, Aristotle considers and contrasts these two methods. In regard to Division (§ 9—20) he shows on the one hand, (against Plato, who is not named,) that the process is not to be viewed as having any power of demonstration or argument;* and on the other, (against Speusippus, as we learn from Eudemus, through the Greek expositors,) that it is not wholly to be rejected as worthless, being useful, in subservience always to the other method of induction, to ensure—that none of the essential qualities are omitted—that these qualities alone are taken—and that they are properly subordinated and arranged. In reference to the Inductive method, which is to be considered as the principal, he explains its nature, and delivers various precepts for its due application, (§ 7, 21, etc.)

This summary will enable the reader to understand Mr. Hampden's perversion of Aristotle's doctrine. In the first place, that gentleman is mistaken in supposing that the philosopher applies the term Induction to any method of investigating the definition discussed by him in the chapter in question. The word does not once occur. In the second place, he is still farther deceived in thinking that Aristotle there begins that name on a descent from the universal to the particular, whereas in his philosophy—indeed in all philosophies—it exclusively pertains to an ascent from the particular to the universal. In the third place, he is wrong in imagining that Aristotle there treats only of a single method, for he considers and contrasts two methods, not only different, but opposed.† In the fourth place, he is mistaken, in understanding as applied to one contrary, the observations which Aristotle applies, and which are only applicable

been acknowledged; nor has it even attracted notice, that different logicians and philosophers, though severally applying the terms only in a single sense, are still at cross purposes with each other. One calls Synthesis, what another calls Analysis; and this both in ancient and modern times. We ourselves think it best to regulate the use of these terms by reference to the notion of a whole and parts of any kind. This we do, and do professedly. Mr. Hampden, but probably without intending it, does the same: in one part of the passage we have quoted, speaking of Division, (his logical induction,) as an 'analysis;' in another, describing it as 'synthetical.'

* In one respect, 'says Aristotle, 'the Genus is called a part of the Species; in another, the Species a part of the Genus.' (Metaph. L. v. c. 25.) In like manner, the same method, viewed in different relations, may be styled either Analysis or Synthesis. This, however, has not

† Mr. Hampden's error, we suspect, originates in the circumstances that Pacioli (whom Du Val follows in the Organon) speaks, in his
in expounding the reverse. For example, he quotes in the note
as pertinent to Division words of the original relative to In-
duction; and the instance (from the definition of Magnanimity)
adduced to elucidate the one method, is in reality employed by
Aristotle to explain the other. In the fifth place, his error is
enhanced by seeing in his single method the subordinate of
Aristotle's two; and in lauding as a peculiarly important part
of the Aristotelian philosophy, a process in the exposition of which
Aristotle has no claim to originality, and to which he himself,
here and elsewhere, justly attributes only an inferior importance.
In the sixth place, in contradiction equally of his whole philo-
osophy and of the truth of nature, the Stagirite is made to hold
that our highest abstractions are first in the order of time; that
our process of classification is eccentric not eccentric; that a
child generalizes substance and accident before egg and white.—
Mr Hampden's statement of the Inductive method being thus
the reverse of truth, it is needless to say that the etymological
explanation he has hazarded of the term (ισωθέν) must be er-
roneous. But even more erroneous is the pendant by which he
attempts to illustrate his interpretation of that term. 'The
25.) is just the reverse,—a leading away, by the terms suc-
cessively brought from the more accurate notion conveyed by a'
former one.' The abduction here referred to is no more such a
'leading away' than it is a theft. It is a kind of syllogism,—of
what nature we cannot longer trespass on the patience of our
readers by explaining. For the same reason we say nothing of
some other errors we had remarked in Mr Hampden's account
of that branch of the Aristotelian philosophy which we have been
now considering.