

CHAPTER XII.

OF THE LOGIC OF PRACTICE, OR ART; INCLUDING MORALITY AND POLICY.

Sec. 1. In the preceding chapters we have endeavoured to characterize the present state of those among the branches of knowledge called Moral, which are sciences in the only proper sense of the term, that is, inquiries into the course of nature. It is customary, however, to include under the term moral knowledge, and even (though improperly) under that of moral science, an inquiry the results of which do not express themselves in the indicative, but in the imperative mood, or in periphrases equivalent to it; what is called the knowledge of duties; practical ethics, or morality.

Now, the imperative mood is the characteristic of art, as distinguished from science. Whatever speaks in rules, or precepts, not in assertions respecting matters of fact, is art: and ethics, or morality, is properly a portion of the art corresponding to the sciences of human nature and society.[19]

The Method, therefore, of Ethics, can be no other than that of Art, or Practice, in general: and the portion yet uncompleted, of the task which we proposed to ourselves in the concluding Book, is to characterize the general Method of Art, as distinguished from Science.

Sec. 2. In all branches of practical business, there are cases in which individuals are bound to conform their practice to a pre-established rule, while there are others in which it is part of their task to find or construct the rule by which they are to govern their conduct. The first, for example, is the case of a judge, under a definite written code. The judge is not called upon to determine what course would be intrinsically the most advisable in the particular case in hand, but only within what rule of law it falls; what the legislator has ordained to be done in the kind of case, and must therefore be presumed to have intended in the individual case. The method must here be wholly and exclusively one of ratiocination, or syllogism; and the process is obviously, what in our analysis of the syllogism we showed that all ratiocination is, namely the interpretation of a formula.

In order that our illustration of the opposite case may be taken from the same class of subjects as the former, we will suppose, in contrast with the situation of the judge, the position of a legislator. As the judge has laws for his guidance, so the legislator has rules, and maxims of policy; but it would be a manifest error to suppose that the legislator is bound by these maxims in the same manner as the judge is bound by the laws, and that all he has to do is to argue down from them to the particular case, as the judge does from the laws. The legislator is bound to take into consideration the reasons or grounds of the maxim; the judge has nothing to do with those of the law, except so far as a consideration of them may throw light upon the intention of the law-maker, where his words have left it doubtful. To the judge, the rule, once positively ascertained, is final; but the legislator, or other practitioner, who goes by rules rather than by their reasons, like the old-fashioned German tacticians who were vanquished by Napoleon, or the physician who preferred that his patients should die by rule rather than recover contrary to it, is rightly judged to be a mere pedant, and the slave of his formulas.

Now, the reasons of a maxim of policy, or of any other rule of art, can be no other than the theorems of the corresponding science.

The relation in which rules of art stand to doctrines of science may be thus characterized. The art proposes to itself an end to be attained, defines the end, and hands it over to the science. The science receives it, considers it as a phenomenon or effect to be studied, and having investigated its causes and conditions, sends it back to art with a theorem of the combination of circumstances by which it could be produced. Art then examines these combinations of circumstances, and according as any of them are or are not in human power, pronounces the end attainable or not. The only one of the premises, therefore, which Art supplies, is the original major premise, which asserts that the attainment of the given end is desirable. Science then lends to Art the proposition (obtained by a series of inductions or of deductions) that the performance of certain actions will attain the end. From these premises Art concludes that the performance of these actions is

desirable, and finding it also practicable, converts the theorem into a rule or precept.

Sec. 3. It deserves particular notice, that the theorem or speculative truth is not ripe for being turned into a precept, until the whole, and not a part merely, of the operation which belongs to science, has been performed. Suppose that we have completed the scientific process only up to a certain point; have discovered that a particular cause will produce the desired effect, but have not ascertained all the negative conditions which are necessary, that is, all the circumstances which, if present, would prevent its production. If, in this imperfect state of the scientific theory, we attempt to frame a rule of art, we perform that operation prematurely. Whenever any counteracting cause, overlooked by the theorem, takes place, the rule will be at fault: we shall employ the means and the end will not follow. No arguing from or about the rule itself will then help us through the difficulty: there is nothing for it but to turn back and finish the scientific process which should have preceded the formation of the rule. We must re-open the investigation, to inquire into the remainder of the conditions on which the effect depends; and only after we have ascertained the whole of these, are we prepared to transform the completed law of the effect into a precept, in which those circumstances or combinations of circumstances which the science exhibits as conditions, are prescribed as means.

It is true that, for the sake of convenience, rules must be formed from something less than this ideally perfect theory; in the first place, because the theory can seldom be made ideally perfect; and next, because, if all the counteracting contingencies, whether of frequent or of rare occurrence, were included, the rules would be too cumbrous to be apprehended and remembered by ordinary capacities, on the common occasions of life. The rules of art do not attempt to comprise more conditions than require to be attended to in ordinary cases; and are therefore always imperfect. In the manual arts, where the requisite conditions are not numerous, and where those which the rules do not specify are generally either plain to common observation or speedily learnt from practice, rules may often be safely acted on by persons who know nothing more than the rule. But in the complicated affairs of life, and still more in those of states and societies, rules cannot be relied on, without constantly referring back to the scientific laws on which they are founded. To know what are the practical contingencies which require a modification of the rule, or which are altogether exceptions to it, is to know what combinations of circumstances would interfere with, or entirely counteract, the consequences of those laws: and this can only be learnt by a reference to the theoretic grounds of the rule.

By a wise practitioner, therefore, rules of conduct will only be considered as provisional. Being made for the most numerous cases, or for those of most ordinary occurrence, they point out the manner in which it will be least perilous to act, where time or means do not exist for analysing the actual circumstances of the case, or where we cannot trust our judgment in estimating them. But they do not at all supersede the propriety of going through (when circumstances permit) the scientific process requisite for framing a rule from the data of the particular case before us. At the same time, the common rule may very properly serve as an admonition that a certain mode of action has been found by ourselves and others to be well adapted to the cases of most common occurrence; so that if it be unsuitable to the case in hand, the reason of its being so will be likely to arise from some unusual circumstance.

Sec. 4. The error is therefore apparent, of those who would deduce the line of conduct proper to particular cases, from supposed universal practical maxims; overlooking the necessity of constantly referring back to the principles of the speculative science, in order to be sure of attaining even the specific end which the rules have in view. How much greater still, then, must the error be, of setting up such unbending principles, not merely as universal rules for attaining a given end, but as rules of conduct generally; without regard to the possibility, not only that some modifying cause may prevent the attainment of the given end by the means which the rule prescribes, but that success itself may conflict with some other end, which may possibly chance to be more desirable.

This is the habitual error of many of the political speculators whom I have characterized as the geometrical school; especially in France, where ratiocination from rules of practice forms the staple commodity of journalism and political oratory; a misapprehension of the functions of Deduction which has brought much

discredit, in the estimation of other countries, upon the spirit of generalization so honourably characteristic of the French mind. The common-places of politics, in France, are large and sweeping practical maxims, from which, as ultimate premises, men reason downwards to particular applications, and this they call being logical and consistent. For instance, they are perpetually arguing that such and such a measure ought to be adopted, because it is a consequence of the principle on which the form of government is founded; of the principle of legitimacy, or the principle of the sovereignty of the people. To which it may be answered, that if these be really practical principles, they must rest on speculative grounds; the sovereignty of the people (for example) must be a right foundation for government, because a government thus constituted tends to produce certain beneficial effects. Inasmuch, however, as no government produces all possible beneficial effects, but all are attended with more or fewer inconveniences; and since these cannot usually be combated by means drawn from the very causes which produce them; it would be often a much stronger recommendation of some practical arrangement, that it does not follow from what is called the general principle of the government, than that it does. Under a government of legitimacy, the presumption is far rather in favour of institutions of popular origin; and in a democracy, in favour of arrangements tending to check the impetus of popular will. The line of argumentation so commonly mistaken in France for political philosophy, tends to the practical conclusion that we should exert our utmost efforts to aggravate, instead of alleviating, whatever are the characteristic imperfections of the system of institutions which we prefer, or under which we happen to live.

Sec. 5. The grounds, then, of every rule of art, are to be found in the theorems of science. An art, or a body of art, consists of the rules, together with as much of the speculative propositions as comprises the justification of those rules. The complete art of any matter, includes a selection of such a portion from the science, as is necessary to show on what conditions the effects, which the art aims at producing, depend. And Art in general, consists of the truths of Science, arranged in the most convenient order for practice, instead of the order which is the most convenient for thought. Science groups and arranges its truths, so as to enable us to take in at one view as much as possible of the general order of the universe. Art, though it must assume the same general laws, follows them only into such of their detailed consequences as have led to the formation of rules of conduct; and brings together from parts of the field of science most remote from one another, the truths relating to the production of the different and heterogeneous conditions necessary to each effect which the exigencies of practical life require to be produced.

Science, therefore, following one cause to its various effects, while art traces one effect to its multiplied and diversified causes and conditions; there is need of a set of intermediate scientific truths, derived from the higher generalities of science, and destined to serve as the generalia or first principles of the various arts. The scientific operation of framing these intermediate principles, M. Comte characterizes as one of those results of philosophy which are reserved for futurity. The only complete example which he points out as actually realized, and which can be held up as a type to be imitated in more important matters, is the general theory of the art of Descriptive Geometry, as conceived by M. Monge. It is not, however, difficult to understand what the nature of these intermediate principles must generally be. After framing the most comprehensive possible conception of the end to be aimed at, that is, of the effect to be produced, and determining in the same comprehensive manner the set of conditions on which that effect depends; there remains to be taken, a general survey of the resources which can be commanded for realizing this set of conditions; and when the result of this survey has been embodied in the fewest and most extensive propositions possible, those propositions will express the general relation between the available means and the end, and will constitute the general scientific theory of the art; from which its practical methods will follow as corollaries.

Sec. 6. But though the reasonings which connect the end or purpose of every art with its means, belong to the domain of Science, the definition of the end itself belongs exclusively to Art, and forms its peculiar province. Every art has one first principle, or general major premise, not borrowed from science; that which enunciates the object aimed at, and affirms it to be a desirable object. The builder's art assumes that it is desirable to have buildings; architecture (as one of the fine arts), that it is desirable to have them beautiful or imposing. The hygienic and medical arts assume, the one that the preservation of health, the other that the cure of disease, are fitting and desirable ends. These are not propositions of science. Propositions of science assert a matter of

fact: an existence, a coexistence, a succession, or a resemblance. The propositions now spoken of do not assert that anything is, but enjoin or recommend that something should be. They are a class by themselves. A proposition of which the predicate is expressed, by the words *ought* or *should be*, is generically different from one which is expressed by *is*, or *will be*. It is true that, in the largest sense of the words, even these propositions assert something as a matter of fact. The fact affirmed in them is, that the conduct recommended excites in the speaker's mind the feeling of approbation. This, however, does not go to the bottom of the matter; for the speaker's approbation is no sufficient reason why other people should approve; nor ought it to be a conclusive reason even with himself. For the purposes of practice, every one must be required to justify his approbation: and for this there is need of general premises, determining what are the proper objects of approbation, and what the proper order of precedence among those objects.

These general premises, together with the principal conclusions which may be deduced from them, form (or rather might form) a body of doctrine, which is properly the Art of Life, in its three departments, Morality, Prudence or Policy, and AEsthetics; the Right, the Expedient, and the Beautiful or Noble, in human conduct and works. To this art, (which, in the main, is unfortunately still to be created,) all other arts are subordinate; since its principles are those which must determine whether the special aim of any particular art is worthy and desirable, and what is its place in the scale of desirable things. Every art is thus a joint result of laws of nature disclosed by science, and of the general principles of what has been called Teleology, or the Doctrine of Ends;[20] which, borrowing the language of the German metaphysicians, may also be termed, not improperly, the Principles of Practical Reason.

A scientific observer or reasoner, merely as such, is not an adviser for practice. His part is only to show that certain consequences follow from certain causes, and that to obtain certain ends, certain means are the most effectual. Whether the ends themselves are such as ought to be pursued, and if so, in what cases and to how great a length, it is no part of his business as a cultivator of science to decide, and science alone will never qualify him for the decision. In purely physical science, there is not much temptation to assume this ulterior office; but those who treat of human nature and society invariably claim it; they always undertake to say, not merely what is, but what ought to be. To entitle them to do this, a complete doctrine of Teleology is indispensable. A scientific theory, however perfect, of the subject matter, considered merely as part of the order of nature, can in no degree serve as a substitute. In this respect the various subordinate arts afford a misleading analogy. In them there is seldom any visible necessity for justifying the end, since in general its desirableness is denied by nobody, and it is only when the question of precedence is to be decided between that end and some other, that the general principles of Teleology have to be called in: but a writer on Morals and Politics requires those principles at every step. The most elaborate and well-digested exposition of the laws of succession and coexistence among mental or social phenomena, and of their relation to one another as causes and effects, will be of no avail towards the art of Life or of Society, if the ends to be aimed at by that art are left to the vague suggestions of the *intellectus sibi permissus*, or are taken for granted without analysis or questioning.

Sec. 7. There is, then, a *Philosophia Prima* peculiar to Art, as there is one which belongs to Science. There are not only first principles of Knowledge, but first principles of Conduct. There must be some standard by which to determine the goodness or badness, absolute and comparative, of ends, or objects of desire. And whatever that standard is, there can be but one: for if there were several ultimate principles of conduct, the same conduct might be approved by one of those principles and condemned by another; and there would be needed some more general principle, as umpire between them.

Accordingly, writers on moral philosophy have mostly felt the necessity not only of referring all rules of conduct, and all judgments of praise and blame, to principles, but of referring them to some one principle; some rule, or standard, with which all other rules of conduct were required to be consistent, and from which by ultimate consequence they could all be deduced. Those who have dispensed with the assumption of such an universal standard, have only been enabled to do so by supposing that a moral sense, or instinct, inherent in our constitution, informs us, both what principles of conduct we are bound to observe, and also in what order

these should be subordinated to one another.

The theory of the foundations of morality is a subject which it would be out of place, in a work like this, to discuss at large, and which could not to any useful purpose be treated incidentally. I shall content myself therefore with saying, that the doctrine of intuitive moral principles, even if true, would provide only for that portion of the field of conduct which is properly called moral. For the remainder of the practice of life some general principle, or standard, must still be sought; and if that principle be rightly chosen, it will be found, I apprehend, to serve quite as well for the ultimate principle of Morality, as for that of Prudence, Policy, or Taste.

Without attempting in this place to justify my opinion, or even to define the kind of justification which it admits of, I merely declare my conviction, that the general principle to which all rules of practice ought to conform, and the test by which they should be tried, is that of conduciveness to the happiness of mankind, or rather, of all sentient beings: in other words, that the promotion of happiness is the ultimate principle of Teleology.[21]

I do not mean to assert that the promotion of happiness should be itself the end of all actions, or even of all rules of action. It is the justification, and ought to be the controller, of all ends, but is not itself the sole end. There are many virtuous actions, and even virtuous modes of action (though the cases are, I think, less frequent than is often supposed) by which happiness in the particular instance is sacrificed, more pain being produced than pleasure. But conduct of which this can be truly asserted, admits of justification only because it can be shown that on the whole more happiness will exist in the world, if feelings are cultivated which will make people, in certain cases, regardless of happiness. I fully admit that this is true: that the cultivation of an ideal nobleness of will and conduct, should be to individual human beings an end, to which the specific pursuit either of their own happiness or of that of others (except so far as included in that idea) should, in any case of conflict, give way. But I hold that the very question, what constitutes this elevation of character, is itself to be decided by a reference to happiness as the standard. The character itself should be, to the individual, a paramount end, simply because the existence of this ideal nobleness of character, or of a near approach to it, in any abundance, would go further than all things else towards making human life happy; both in the comparatively humble sense, of pleasure and freedom from pain, and in the higher meaning, of rendering life, not what it now is almost universally, puerile and insignificant--but such as human beings with highly developed faculties can care to have.

Sec. 8. With these remarks we must close this summary view of the application of the general logic of scientific inquiry to the moral and social departments of science. Notwithstanding the extreme generality of the principles of method which I have laid down, (a generality which, I trust, is not, in this instance, synonymous with vagueness) I have indulged the hope that to some of those on whom the task will devolve of bringing those most important of all sciences into a more satisfactory state, these observations may be useful; both in removing erroneous, and in clearing up the true, conceptions of the means by which, on subjects of so high a degree of complication, truth can be attained. Should this hope be realized, what is probably destined to be the great intellectual achievement of the next two or three generations of European thinkers will have been in some degree forwarded.

FOOTNOTES:

[1] Some arguments and explanations, supplementary to those in the text, will be found in *An Examination of Sir William Hamilton's Philosophy*, chap. xxvi.

[2] *Supra*, p. 137.

[3] When this chapter was written, Mr. Bain had not yet published even the first part ("The Senses and the Intellect") of his profound *Treatise on the Mind*. In this, the laws of association have been more

comprehensively stated and more largely exemplified than by any previous writer; and the work, having been completed by the publication of "The Emotions and the Will," may now be referred to as incomparably the most complete analytical exposition of the mental phenomena, on the basis of a legitimate Induction, which has yet been produced.

Many striking applications of the laws of association to the explanation of complex mental phenomena, are also to be found in Mr. Herbert Spencer's "Principles of Psychology."

[4] In the case of the moral sentiments the place of direct experiment is to a considerable extent supplied by historical experience, and we are able to trace with a tolerable approach to certainty the particular associations by which those sentiments are engendered. This has been attempted, so far as respects the sentiment of justice, in a little work by the present author, entitled *Utilitarianism*.

[5] The most favourable cases for making such approximate generalizations are what may be termed collective instances; where we are fortunately enabled to see the whole class respecting which we are inquiring, in action at once; and, from the qualities displayed by the collective body, are able to judge what must be the qualities of the majority of the individuals composing it. Thus the character of a nation is shown in its acts as a nation; not so much in the acts of its government, for those are much influenced by other causes; but in the current popular maxims, and other marks of the general direction of public opinion; in the character of the persons or writings that are held in permanent esteem or admiration; in laws and institutions, so far as they are the work of the nation itself, or are acknowledged and supported by it; and so forth. But even here there is a large margin of doubt and uncertainty. These things are liable to be influenced by many circumstances: they are partly determined by the distinctive qualities of that nation or body of persons, but partly also by external causes which would influence any other body of persons in the same manner. In order, therefore, to make the experiment really complete, we ought to be able to try it without variation upon other nations: to try how Englishmen would act or feel if placed in the same circumstances in which we have supposed Frenchmen to be placed; to apply, in short, the Method of Difference as well as that of Agreement. Now these experiments we cannot try, nor even approximate to.

[6] "To which," says Dr. Whewell, "we may add, that it is certain from the history of the subject, that in that case the hypothesis would never have been framed at all."

Dr. Whewell (*Philosophy of Discovery*, pp. 277-282) defends Bacon's rule against the preceding strictures. But his defence consists only in asserting and exemplifying a proposition which I had myself stated, viz. that though the largest generalizations may be the earliest made, they are not at first seen in their entire generality, but acquire it by degrees, as they are found to explain one class after another of phenomena. The laws of motion, for example, were not known to extend to the celestial regions, until the motions of the celestial bodies had been deduced from them. This however does not in any way affect the fact, that the middle principles of astronomy, the central force for example, and the law of the inverse square, could not have been discovered, if the laws of motion, which are so much more universal, had not been known first. On Bacon's system of step-by-step generalization, it would be impossible in any science to ascend higher than the empirical laws; a remark which Dr. Whewell's own Inductive Tables, referred to by him in support of his argument, amply bear out.

[7] Vol. i. p. 494 to the end of the chapter.

[8] *Biographia Literaria*, i. 214.

[9] *Supra*, vol. i. p. 500.

[10] *Essays on some Unsettled Questions of Political Economy*, pp. 137-140.

[11] The quotations in this paragraph are from a paper written by the author, and published in a periodical in 1834.

[12] *Cours de Philosophie Positive*, iv. 325-9.

[13] Since reprinted entire in *Dissertations and Discussions*, as the concluding paper of the first volume.

[14] This great generalization is often unfavourably criticised (as by Dr. Whewell for instance) under a misapprehension of its real import. The doctrine, that the theological explanation of phenomena belongs only to the infancy of our knowledge of them, ought not to be construed as if it was equivalent to the assertion, that mankind, as their knowledge advances, will necessarily cease to believe in any kind of theology. This was M. Comte's opinion; but it is by no means implied in his fundamental theorem. All that is implied is, that in an advanced state of human knowledge, no other Ruler of the World will be acknowledged than one who rules by universal laws, and does not at all, or does not unless in very peculiar cases, produce events by special interpositions. Originally all natural events were ascribed to such interpositions. At present every educated person rejects this explanation in regard to all classes of phenomena of which the laws have been fully ascertained; though some have not yet reached the point of referring all phenomena to the idea of Law, but believe that rain and sunshine, famine and pestilence, victory and defeat, death and life, are issues which the Creator does not leave to the operation of his general laws, but reserves to be decided by express acts of volition. M. Comte's theory is the negation of this doctrine.

Dr. Whewell equally misunderstands M. Comte's doctrine respecting the second, or metaphysical stage of speculation. M. Comte did not mean that "discussions concerning ideas" are limited to an early stage of inquiry, and cease when science enters into the positive stage. (*Philosophy of Discovery*, pp. 226 et seq.) In all M. Comte's speculations as much stress is laid on the process of clearing up our conceptions, as on the ascertainment of facts. When M. Comte speaks of the metaphysical stage of speculation, he means the stage in which men speak of "Nature" and other abstractions as if they were active forces, producing effects; when Nature is said to do this, or forbid that; when Nature's horror of a vacuum, Nature's non-admission of a break, Nature's *vis medicatrix*, were offered as explanations of phenomena; when the qualities of things were mistaken for real entities dwelling in the things; when the phenomena of living bodies were thought to be accounted for by being referred to a "vital force;" when, in short, the abstract names of phenomena were mistaken for the causes of their existence. In this sense of the word it cannot be reasonably denied that the metaphysical explanation of phenomena, equally with the theological, gives way before the advance of real science.

That the final, or positive stage, as conceived by M. Comte, has been equally misunderstood, and that, notwithstanding some expressions open to just criticism, M. Comte never dreamed of denying the legitimacy of inquiry into all causes which are accessible to human investigation, I have pointed out in a former place.

[15] Buckle's *History of Civilization*, i. 30.

[16] I have been assured by an intimate friend of Mr. Buckle that he would not have withheld his assent from these remarks, and that he never intended to affirm or imply that mankind are not progressive in their moral as well as in their intellectual qualities. "In dealing with his problem, he availed himself of the artifice resorted to by the Political Economist, who leaves out of consideration the generous and benevolent sentiments, and founds his science on the proposition that mankind are actuated by acquisitive propensities alone," not because such is the fact, but because it is necessary to begin by treating the principal influence as if it was the sole one, and make the due corrections afterwards. "He desired to make abstraction of the intellect as the determining and dynamical element of the progression, eliminating the more dependent set of conditions, and treating the more active one as if it were an entirely independent variable."

The same friend of Mr. Buckle states that when he used expressions which seemed to exaggerate the influence

of general at the expense of special causes, and especially at the expense of the influence of individual minds, Mr. Buckle really intended no more than to affirm emphatically that the greatest men cannot effect great changes in human affairs unless the general mind has been in some considerable degree prepared for them by the general circumstances of the age; a truth which, of course, no one thinks of denying. And there certainly are passages in Mr. Buckle's writings which speak of the influence exercised by great individual intellects in as strong terms as could be desired.

[17] Essay on Dryden, in *Miscellaneous Writings*, i. 186.

[18] In the *Cornhill Magazine* for June and July 1861.

[19] It is almost superfluous to observe, that there is another meaning of the word Art, in which it may be said to denote the poetical department or aspect of things in general, in contradistinction to the scientific. In the text, the word is used in its older, and I hope, not yet obsolete sense.

[20] The word Teleology is also, but inconveniently and improperly, employed by some writers as a name for the attempt to explain the phenomena of the universe from final causes.

[21] For an express discussion and vindication of this principle, see the little volume entitled "Utilitarianism."

THE END.

Transcriber's Notes.

Spelling irregularities where there was no obviously preferred version were left as is. Variants include: "cotemporary" and "contemporary;" "commonplaces" and "common-places;" "dependents" and "dependants;" "dreamed" and "dreamt;" derivatives of "enclose" and "inclose;" "e. g." and "e.g.;" "i. e." and "i.e.;" "misestimate" and "mis-estimate;" "recal" and "recall" (and derivatives); derivatives of "paraphrase" and "periphraise;" "subclass" and "sub-class" (and derivatives).

Changed "Phemomena" to "Phenomena" on page xv: "Successions of Social Phenomena."

Changed page reference for section 4 of Chapter XI on page xv of the Table of Contents from "539" to "540."

Changed "oberved" to "observed" on page 17: "the observed facts."

A closing double quotation mark is missing on page 17. It was added after the sentence that ends with "object of the inquiry."

Changed "nevertheless" to "nevertheless" on page 104: "phenomena would nevertheless."

For the mathematical formulas appearing on pages 152 and 153: parentheses were added to make the linear form of the formula correct; and the radical sign was replaced by "[root of]." The equal sign was preserved in "arc (sin = x)," although it makes more sense without it.

Page 240 contains the word "'Squire.'" It intentionally begins with an apostrophe, not an unmatched single quotation mark, and was left as originally printed.

Changed "eupiditibus" to "cupiditibus" on page 401: "de cupiditibus finiendis." And shortly thereafter, changed "eupiditas" to "cupiditas:" "An potest cupiditas finiri." And then a bit further on, changed "haee" to "haec:" "haec desideria naturae."

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