

unequaled in their department, contains clear and just views (as far as they go) on the meaning of a natural arrangement, such as could scarcely have occurred to any one who lived anterior to the age of Linnæus and Bernard de Jussieu.

Book V.

ON FALLACIES.

"Errare non modo affirmando et negando, sed etiam sentiendo, et in tacitâ hominum cogitatione contingit."--HOBBS, *Computatio sive Logica*, chap. v.

"Il leur semble qu'il n'y a qu'à douter par fantaisie, et qu'il n'y a qu'à dire en général que notre nature est infirme; que notre esprit est plein d'aveuglement: qu'il faut avoir un grand soin de se défaire de ses préjugés, et autres choses semblables. Ils pensent que cela suffit pour ne plus se laisser séduire à ses sens, et pour ne plus se tromper du tout. Il ne suffit pas de dire que l'esprit est foible, il faut lui faire sentir ses foiblesses. Ce n'est pas assez de dire qu'il est sujet à l'erreur, il faut lui découvrir en quoi consistent ses erreurs."--MALEBRANCHE, *Recherche de la Vérité*.

Chapter I.

Of Fallacies In General.

§ 1. It is a maxim of the school-men, that "contrariorum eadem est scientia:" we never really know what a thing is, unless we are also able to give a sufficient account of its opposite. Conformably to this maxim, one considerable section, in most treatises on Logic, is devoted to the subject of Fallacies; and the practice is too well worthy of observance, to allow of our departing from it. The philosophy of reasoning, to be complete, ought to comprise the theory of bad as well as of good reasoning.

We have endeavored to ascertain the principles by which the sufficiency of any proof can be tested, and by which the nature and amount of evidence needful to prove any given conclusion can be determined beforehand. If these principles were adhered to, then although the number and value of the truths ascertained would be limited by the opportunities, or by the industry, ingenuity, and patience, of the individual inquirer, at least error would not be embraced instead of truth. But the general consent of mankind, founded on their experience, vouches for their being far indeed from even this negative kind of perfection in the employment of their reasoning powers.

In the conduct of life--in the practical business of mankind--wrong inferences, incorrect interpretations of experience, unless after much culture of the thinking faculty, are absolutely inevitable; and with most people, after the highest degree of culture they ever attain, such erroneous inferences, producing corresponding errors in conduct, are lamentably frequent. Even in the speculations to which eminent intellects have systematically devoted themselves, and in reference to which the collective mind of the scientific world is always at hand to aid the efforts and correct the aberrations of individuals, it is only from the more perfect sciences, from those of which the subject-matter is the least complicated, that opinions not resting on a correct induction have at length, generally speaking, been expelled. In the departments of inquiry relating to the more complex phenomena of nature, and especially those of which the subject is man, whether as a moral and intellectual, a social, or even as a physical being; the diversity of opinions still prevalent among instructed persons, and the equal confidence with which those of the most contrary ways of thinking cling to their respective tenets, are proof not only that right modes of philosophizing are not yet generally adopted on those subjects, but that wrong ones are; that inquirers have not only in general missed the truth, but have often embraced error; that even the most cultivated portion of our species have not yet learned to abstain from drawing conclusions which the evidence does not warrant.

The only complete safeguard against reasoning ill, is the habit of reasoning well; familiarity with the principles of correct reasoning, and practice in applying those principles. It is, however, not unimportant to consider what are the most common modes of bad reasoning; by what appearances the mind is most likely to be seduced from the observance of true principles of induction; what, in short, are the most common and most dangerous varieties of Apparent Evidence, whereby persons are misled into opinions for which there does not exist evidence really conclusive.

A catalogue of the varieties of apparent evidence which are not real evidence, is an enumeration of Fallacies. Without such an enumeration, therefore, the present work would be wanting in an essential point. And while writers who included in their theory of reasoning nothing more than ratiocination, have in consistency with this limitation, confined their remarks to the fallacies which have their seat in that portion of the process of investigation; we, who profess to treat of the whole process, must add to our directions for performing it rightly, warnings against performing it wrongly in any of its parts: whether the ratiocinative or the experimental portion of it be in fault, or the fault lie in dispensing with ratiocination and induction altogether.

§ 2. In considering the sources of unfounded inference, it is unnecessary to reckon the errors which arise, not from a wrong method, nor even from ignorance of the right one, but from a casual lapse, through hurry or inattention, in the application of the true principles of induction. Such errors, like the accidental mistakes in

casting up a sum, do not call for philosophical analysis or classification; theoretical considerations can throw no light upon the means of avoiding them. In the present treatise our attention is required, not to mere inexpertness in performing the operation in the right way (the only remedies for which are increased attention and more sedulous practice), but to the modes of performing it in a way fundamentally wrong; the conditions under which the human mind persuades itself that it has sufficient grounds for a conclusion which it has not arrived at by any of the legitimate methods of induction--which it has not, even carelessly or overhastily, endeavored to test by those legitimate methods.

§ 3. There is another branch of what may be called the Philosophy of Error, which must be mentioned here, though only to be excluded from our subject. The sources of erroneous opinions are twofold, moral and intellectual. Of these, the moral do not fall within the compass of this work. They may be classed under two general heads: Indifference to the attainment of truth, and Bias; of which last the most common case is that in which we are biased by our wishes; but the liability is almost as great to the undue adoption of a conclusion which is disagreeable to us, as of one which is agreeable, if it be of a nature to bring into action any of the stronger passions. Persons of timid character are the more predisposed to believe any statement, the more it is calculated to alarm them. Indeed it is a psychological law, deducible from the most general laws of the mental constitution of man, that any strong passion renders us credulous as to the existence of objects suitable to excite it.

But the moral causes of opinions, though with most persons the most powerful of all, are but remote causes; they do not act directly, but by means of the intellectual causes; to which they bear the same relation that the circumstances called, in the theory of medicine, *predisposing* causes, bear to *exciting* causes. Indifference to truth can not, in and by itself, produce erroneous belief; it operates by preventing the mind from collecting the proper evidences, or from applying to them the test of a legitimate and rigid induction; by which omission it is exposed unprotected to the influence of any species of apparent evidence which offers itself spontaneously, or which is elicited by that smaller quantity of trouble which the mind may be willing to take. As little is Bias a direct source of wrong conclusions. We can not believe a proposition only by wishing, or only by dreading, to believe it. The most violent inclination to find a set of propositions true, will not enable the weakest of mankind to believe them without a vestige of intellectual grounds--without any, even apparent, evidence. It acts indirectly, by placing the intellectual grounds of belief in an incomplete or distorted shape before his eyes. It makes him shrink from the irksome labor of a rigorous induction, when he has a misgiving that its result may be disagreeable; and in such examination as he does institute, it makes him exert that which *is* in a certain measure voluntary, his attention, unfairly, giving a larger share of it to the evidence which seems favorable to the desired conclusion, a smaller to that which seems unfavorable. It operates, too, by making him look out eagerly for reasons, or apparent reasons, to support opinions which are conformable, or resist those which are repugnant, to his interests or feelings; and when the interests or feelings are common to great numbers of persons, reasons are accepted and pass current, which would not for a moment be listened to in that character if the conclusion had nothing more powerful than its reasons to speak in its behalf. The natural or acquired partialities of mankind are continually throwing up philosophical theories, the sole recommendation of which consists in the premises they afford for proving cherished doctrines, or justifying favorite feelings; and when any one of these theories has been so thoroughly discredited as no longer to serve the purpose, another is always ready to take its place. This propensity, when exercised in favor of any widely-spread persuasion or sentiment, is often decorated with complimentary epithets; and the contrary habit of keeping the judgment in complete subordination to evidence, is stigmatized by various hard names, as skepticism, immorality, coldness, hard-heartedness, and similar expressions according to the nature of the case. But though the opinions of the generality of mankind, when not dependent on mere habit and inculcation, have their root much more in the inclinations than in the intellect, it is a necessary condition to the triumph of the moral bias that it should first pervert the understanding. Every erroneous inference, though originating in moral causes, involves the intellectual operation of admitting insufficient evidence as sufficient; and whoever was on his guard against all kinds of inconclusive evidence which can be mistaken for conclusive, would be in no danger of being led into error even by the strongest bias. There are minds so strongly fortified on the intellectual side, that they could not blind themselves to the light of truth, however

really desirous of doing so; they could not, with all the inclination in the world, pass off upon themselves bad arguments for good ones. If the sophistry of the intellect could be rendered impossible, that of the feelings, having no instrument to work with, would be powerless. A comprehensive classification of all those things which, not being evidence, are liable to appear such to the understanding, will, therefore, of itself include all errors of judgment arising from moral causes, to the exclusion only of errors of practice committed against better knowledge.

To examine, then, the various kinds of apparent evidence which are not evidence at all, and of apparently conclusive evidence which do not really amount to conclusiveness, is the object of that part of our inquiry into which we are about to enter.

The subject is not beyond the compass of classification and comprehensive survey. The things, indeed, which are not evidence of any given conclusion, are manifestly endless, and this negative property, having no dependence on any positive ones, can not be made the groundwork of a real classification. But the things which, not being evidence, are susceptible of being mistaken for it, are capable of a classification having reference to the positive property which they possess of appearing to be evidence. We may arrange them, at our choice, on either of two principles; according to the cause which makes them appear to be evidence, not being so; or according to the particular kind of evidence which they simulate. The Classification of Fallacies which will be attempted in the ensuing chapter, is founded on these considerations jointly.