§ 2. Informal Inference

{288} IT is plain that formal logical sequence is not in fact the method by which we are enabled to become certain of what is concrete; and it is equally plain, from what has been already suggested, what the real and necessary method is. It is the cumulation of probabilities, independent of each other, arising out of the nature and circumstances of the particular case which is under review; probabilities too fine to avail separately, too subtle and circuitous to be convertible into syllogisms, too numerous and various for such conversion, even were they convertible. As a man's portrait differs from a sketch of him, in having, not merely a continuous outline, but all its details filled in, and shades and colours laid on and harmonized together, such is the multiform and intricate process of ratiocination, necessary for our reaching him as a concrete fact, compared with the rude operation of syllogistic treatment.

Let us suppose I wish to convert an educated, thoughtful Protestant, and accordingly present for his acceptance a syllogism of the following kind:—"All Protestants are bound to join the Church; you are a Protestant: ergo." He answers, we will say, by {289} denying both premisses; and he does so by means of arguments, which branch out into other arguments, and those into others, and all of them severally requiring to be considered by him on their own merits, before the syllogism reaches him, and in consequence mounting up, taken altogether, into an array of inferential exercises large and various beyond calculation. Moreover, he is bound to submit himself to this complicated process from the nature of the case; he would act rashly, if he did not; for he is a concrete individual unit, and being so is under so many laws, and is the subject of so many predications all at once, that he cannot determine, off-hand, his position and his duty by the law and the predication of one syllogism in particular. I mean he may fairly say, "Distinguo," to each of its premisses: he says, "Protestants are bound to join the Church,—under circumstances," and "I am a Protestant—in a certain sense;" and therefore the syllogism, at first sight, does not touch him at all.

Before, then, he grants the major, he asks whether all Protestants really are bound to join the Church—are they bound in case they do not feel themselves bound; if they are satisfied that their present religion is a safe one; if they are sure it is true; if, on the other hand, they have grave doubts as to the doctrinal fidelity and purity of the Church; if they are convinced that the Church is corrupt; if their conscience instinctively rejects certain of its doctrines; if history convinces them that the Pope's power is not *jure divino*, but merely in the order of Providence? if, again, they are in a heathen country where priests are not? Or {290} where the only priest who is to be found exacts of them as a condition of their reception, a profession, which the Creed of Pope Pius IV. says nothing about; for instance, that the Holy See is fallible even when it teaches, or that the Temporal Power is an anti-Christian corruption? On one or other of such grounds he thinks he need not change his religion; but presently he asks himself, Can a Protestant be in such a state as to be really satisfied with his religion, as he has just now been professing? Can he possibly believe Protestantism came from above, as a whole? how much of it can he believe came from above? and, as to that portion which he feels did come from above, has it not all been derived to him from the Church, when traced to its source? Is

not Protestantism in itself a negation? Did not the Church exist before it? and can he be sure, on the other hand, that any one of the Church's doctrines is not from above? Further, he finds he has to make up his mind what is a corruption, and what are the tests of it; what he means by a religion; whether it is obligatory to profess any religion in particular; what are the standards of truth and falsehood in religion; and what are the special claims of the Church.

And so, again, as to the minor premiss, perhaps he will answer, that he is not a Protestant; that he is a Catholic of the early undivided Church; that he is a Catholic, but not a Papist. Then he has to determine questions about division, schism, visible unity, what is essential, what is desirable; about provisional states; as to the adjustment of the Church's claims with those of personal judgment and responsibility; as to the soul of {291} the Church contrasted with the body; as to degrees of proof, and the degree necessary for his conversion; as to what is called his providential position, and the responsibility of change; as to the sincerity of his purpose to follow the Divine Will, whithersoever it may lead him; as to his intellectual capacity of investigating such questions at all.

None of these questions, as they come before him, admit of simple demonstration; but each carries with it a number of independent probable arguments, sufficient, when united, for a reasonable conclusion about itself. And first he determines that the questions are such as he personally, with such talents or attainments as he has, may fairly entertain; and then he goes on, after deliberation, to form a definite judgment upon them; and determines them, one way or another, in their bearing on the bald syllogism which was originally offered to his acceptance. And, we will say, he comes to the conclusion, that he ought to accept it as true in his case; that he is a Protestant in such a sense, of such a complexion, of such knowledge, under such circumstances, as to be called upon by duty to join the Church; that this is a conclusion of which he can be certain, and ought to be certain, and that he will be incurring grave responsibility, if he does not accept it as certain, and act upon the certainty of it. And to this conclusion he comes, as is plain, not by any possible verbal enumeration of all the considerations, minute but abundant, delicate but effective, which unite to bring him to it; but by a mental comprehension of the whole case, and a discernment of its upshot, sometimes after much deliberation, {292} but, it may be, by a clear and rapid act of the intellect, always, however, by an unwritten summing-up, something like the summation of the terms, *plus* and *minus* of an algebraical series.

This I conceive to be the real method of reasoning in concrete matters; and it has these characteristics:— First, it does not supersede the logical form of inference, but is one and the same with it; only it is no longer an abstraction, but carried out into the realities of life, its premisses being instinct with the substance and the momentum of that mass of probabilities, which, acting upon each other in correction and confirmation, carry it home definitely to the individual case, which is its original scope.

Next, from what has been said it is plain, that such a process of reasoning is more or less implicit, and without the direct and full advertence of the mind exercising it. As by

the use of our eyesight we recognize two brothers, yet without being able to express what it is by which we distinguish them; as at first sight we perhaps confuse them together, but, on better knowledge, we see no likeness between them at all; as it requires an artist's eye to determine what lines and shades make a countenance look young or old, amiable, thoughtful, angry or conceited, the principle of discrimination being in each case real, but implicit;—so is the mind unequal to a complete analysis of the motives which carry it on to a particular conclusion, and is swayed and determined by a body of proof, which it recognizes only as a body, and not in its constituent parts. {293}

And thirdly, it is plain, that, in this investigation of the method of concrete inference, we have not advanced one step towards depriving inference of its conditional character; for it is still as dependent on premisses as it is in its elementary idea. On the contrary, we have rather added to the obscurity of the problem; for a syllogism is at least a demonstration, when the premisses are granted, but a cumulation of probabilities, over and above their implicit character, will vary both in their number and their separate estimated value, according to the particular intellect which is employed upon it. It follows that what to one intellect is a proof is not so to another, and that the certainty of a proposition does properly consist in the certitude of the mind which contemplates it. And this of course may be said without prejudice to the objective truth or falsehood of propositions, since it does not follow that these propositions on the one hand are not true, and based on right reason, and those on the other not false, and based on false reason, because not all men discriminate them in the same way.

Having thus explained the view which I would take of reasoning in the concrete, viz. that, from the nature of the case, and from the constitution of the human mind, certitude is the result of arguments which, taken in the letter, and not in their full implicit sense, are but probabilities, I proceed to dwell on some instances and circumstances of a phenomenon which seems to me as undeniable as to many it may be perplexing. {294}

1.

Let us take three instances belonging respectively to the present, the past, and the future.

1. We are all absolutely certain, beyond the possibility of doubt, that Great Britain is an island. We give to that proposition our deliberate and unconditional adhesion. There is no security on which we should be better content to stake our interests, our property, our welfare, than on the fact that we are living in an island. We have no fear of any geographica1 discovery which may reverse our belief. We should be amused or angry at the assertion, as a bad jest, did any one say that we were at this time joined to the main-land in Norway or in France, though a canal was cut across the isthmus. We are as little exposed to the misgiving, "Perhaps we are not on an island after all," as to the question, "Is it quite certain that the angle in a semi-circle is a right-angle?" It is a simple and primary truth with us, if any truth is such; to believe it is as legitimate an exercise of assent, as there are legitimate exercises of doubt or of opinion. This is the position of

our minds towards our insularity; yet are the arguments producible for it (to use the common expression) in black and white commensurate with this overpowering certitude about it?

Our reasons for believing that we are circumnavigable are such as these:—first, we have been so taught in our childhood, and it is so in all the maps; next, we have never heard it contradicted or questioned; on the contrary, every one whom we have {295} heard speak on the subject of Great Britain, every book we have read, invariably took it for granted; our whole national history, the routine transactions and current events of the country, our social and commercial system, our political relations with foreigners, imply it in one way or another. Numberless facts, or what we consider facts, rest on the truth of it; no received fact rests on its being otherwise. If there is anywhere a junction between us and the continent, where is it? and how do we know it? is it in the north or in the south? There is a manifest *reductio ad absurdum* attached to the notion that we can be deceived on such a point as this.

However, negative arguments and circumstantial evidence are not all, in such a matter, which we have a right to require. They are not the highest kind of proof possible. Those who have circumnavigated the island have a right to be certain: have we ever ourselves even fallen in with any one who has? And as to the common belief, what is the proof that we are not all of us believing it on the credit of each other? And then, when it is said that every one believes it, and everything implies it, how much comes home to me personally of this "every one" and "everything"? The question is, Why do I believe it myself? A living statesman is said to have fancied Demerara an island; his belief was an impression; have we personally more than an impression, if we view the matter argumentatively, a lifelong impression about Great Britain, like the belief, so long and so widely entertained, that the earth was immovable, and the sun careered round it? {296}

I am not at all insinuating that we are not rational in our certitude; I only mean that we cannot analyze a proof satisfactorily, the result of which good sense actually guarantees to us.

2. Father Hardouin maintained that Terence's Plays, Virgil's "Æneid," Horace's Odes, and the Histories of Livy and Tacitus, were the forgeries of the monks of the thirteenth century. That he should be able to argue in behalf of such a position, shows of course that the proof in behalf of the received opinion is not overwhelming. That is, we have no means of inferring absolutely, that Virgil's episode of Dido, or of the Sibyl, and Horace's "Te quoque mensorem" and "Quem tu Melpomene," belong to that Augustan age, which owes its celebrity mainly to those poets. Our common-sense, however, believes in their genuineness without any hesitation or reserve, as if it had been demonstrated, and not in proportion to the available evidence in its favour, or the balance of arguments.

So much at first sight;—but what are our grounds for dismissing thus summarily, as we are likely to do, a theory such as Hardouin's? For let it be observed first, that all knowledge of the Latin classics comes to us from the medieval transcriptions of them, and they who transcribed them had the opportunity of forging or garbling them. We are

simply at their mercy; for neither by oral transmission, nor by monumental inscriptions, nor by contemporaneous manuscripts are the works of Virgil, Horace, and Terence, of Livy and Tacitus, brought to our knowledge. The existing copies, {297} whenever made, are to us the autographic originals. Next, it must be considered, that the numerous religious bodies, then existing over the face of Europe, had leisure enough, in the course of a century, to compose, not only all the classics, but all the Fathers too. The question is, whether they had the ability. This is the main point on which the inquiry turns, or at least the most obvious; and it forms one of those arguments, which, from the nature of the case, are felt rather than are convertible into syllogisms. Hardouin allows that the Georgics, Horace's Satires and Epistles, and the whole of Cicero, are genuine: we have a standard then in these undisputed compositions of the Augustan age. We have a standard also, in the extant medieval works, of what the thirteenth century could do; and we see at once how widely the disputed works differ from the medieval. Now could the thirteenth century simulate Augustan writers better than the Augustan could simulate such writers as those of the thirteenth? No. Perhaps, when the subject is critically examined, the question may be brought to a more simple issue; but as to our personal reasons for receiving as genuine the whole of Virgil, Horace, Livy, Tacitus, and Terence, they are summed up in our conviction that the monks had not the ability to write them. That is, we take for granted that we are sufficiently informed about the capabilities of the human mind, and the conditions of genius, to be quite sure that an age which was fertile in great ideas and in momentous elements of the future, robust in thought, hopeful in its anticipations, of singular intellectual {298} curiosity and acumen, and of high genius in at least one of the fine arts, could not, for the very reason of its pre-eminence in its own line, have an equal pre-eminence in a contrary one. We do not pretend to be able to draw the line between what the medieval intellect could or could not do; but we feel sure that at least it could not write the classics. An instinctive sense of this, and a faith in testimony, are the sufficient, but the undeveloped argument on which to ground our certitude.

I will add, that, if we deal with arguments in the mere letter, the question of the authorship of works in any case has much difficulty. I have noticed it in the instance of Shakespeare, and of Newton. We are all certain that Johnson wrote the prose of Johnson, and Pope the poetry of Pope; but what is there but prescription, at least after contemporaries are dead, to connect together the author of the work and the owner of the name? Our lawyers prefer the examination of present witnesses to affidavits on paper; but the tradition of "testimonia," such as are prefixed to the classics and the Fathers, together with the absence of dissentient voices, is the adequate groundwork of our belief in the history of literature.

3. Once more: what are my grounds for thinking that I, in my own particular case, shall die? I am as certain of it in my own innermost mind, as I am that I now live; but what is the distinct evidence on which I allow myself to be certain? how would it tell in a court of justice? how should I fare under a cross-examination upon the grounds of my certitude? Demonstration {299} of course I cannot have of a future event, unless by means of a Divine Voice; but what logical defence can I make for that undoubting, obstinate anticipation of it, of which I could not rid myself, if I tried?

First, the future cannot be proved *à posteriori*; therefore we are compelled by the nature of the case to put up with *à priori* arguments, that is, with antecedent probability, which is by itself no logical proof. Men tell me that there is a law of death, meaning by law a necessity; and I answer that they are throwing dust into my eyes, giving me words instead of things. What is a law but a generalized fact? and what power has the past over the future? and what power has the case of others over my own case? and how many deaths have I seen? how many ocular witnesses have imparted to me their experience of deaths, sufficient to establish what is called a law?

But let there be a law of death; so there is a law, we are told, that the planets, if let alone, would severally fall into the sun—it is the centrifugal law which hinders it, and so the centripetal law is never carried out. In like manner I am not under the law of death alone, I am under a thousand laws, if I am under one; and they thwart and counteract each other, and jointly determine the irregular line, along which my actual history runs, divergent from the special direction of any one of them. No law is carried out, except in cases where it acts freely: how do I know that the law of death will be allowed its free action in my particular case? We often are able to avert death by medical treatment: why {300} should death have its effect, sooner or later, in every case conceivable?

It is true that the human frame, in all instances which come before me, first grows, and then declines, wastes, and decays, invisible preparation for dissolution. We see death seldom, but of this decline we are witnesses daily; still, it is a plain fact, that most men who die, die, not by any law of death, but by the law of disease; and some writers have questioned whether death is ever, strictly speaking, natural. Now, are diseases necessary? is there any law that every one, sooner or later, must fall under the power of disease? and what would happen on a large scale, were there no diseases? Is what we call the law of death anything more than the chance of disease? Is the prospect of my death, in its logical evidence,—as that evidence is brought home to me—much more than a high probability?

The strongest proof I have for my inevitable mortality is the *reductio ad absurdum*. Can I point to the man, in historic times, who has lived his two hundred years? What has become of past generations of men, unless it is true that they suffered dissolution? But this is a circuitous argument to warrant a conclusion to which in matter of fact I adhere so relentlessly. Anyhow, there is a considerable "surplusage," as Locke calls it, of belief over proof, when I determine that I individually must die. But what logic cannot do, my own living personal reasoning, my good sense, which is the healthy condition of such personal reasoning, but which cannot adequately express itself in words, does for me, and I am possessed {301} with the most precise, absolute, masterful certitude of my dying some day or other.

I am led on by these reflections to make another remark. If it is difficult to explain how a man knows that he shall die, is it not more difficult for him to satisfy himself how he knows that he was born. His knowledge about himself does not rest on memory, nor on distinct testimony, nor on circumstantial evidence. Can he bring into one focus of proof

the reasons which make him so sure? I am not speaking of scientific men, who have diverse channels of knowledge, but of an ordinary individual, as one of ourselves.

Answers doubtless may be given to some of these questions; but, on the whole, I think it is the fact that many of our most obstinate and most reasonable certitudes depend on proofs which are informal and personal, which baffle our powers of analysis, and cannot be brought under logical rule, because they cannot be submitted to logical statistics. If we must speak of Law, this recognition of a correlation between certitude and implicit proof seems to me a law of our minds.

2.

I said just now that an object of sense presents itself to our view as one whole, and not in its separate details: we take it in, recognize it, and discriminate it from other objects, all at once. Such too is the intellectual view we take of the *momenta* of proof for a concrete truth; we grasp the full tale of premisses and the conclusion, *per modum unius*,—by a sort of instinctive perception of the legitimate conclusion in and through the premisses, {302} not by a formal juxtaposition of propositions; though of course such a juxtaposition is useful and natural, both to direct and to verify, just as in objects of sight our notice of bodily peculiarities, or the remarks of others may aid us in establishing a case of disputed identity. And, as this man or that will receive his own impression of one and the same person, and judge differently from others about his countenance, its expression, its moral significance, its physical contour and completion, so an intellectual question may strike two minds very differently, may awaken in them distinct associations, may be invested by them in contrary characteristics, and lead them to opposite conclusions;—and so, again, a body of proof, or a line of argument, may produce a distinct, nay, a dissimilar effect, as addressed to one or to the other.

Thus in concrete reasonings we are in great measure thrown back into that condition, from which logic proposed to rescue us. We judge for ourselves, by our own lights, and on our own principles; and our criterion of truth is not so much the manipulation of propositions, as the intellectual and moral character of the person maintaining them, and the ultimate silent effect of his arguments or conclusions upon our minds.

It is this distinction between ratiocination as the exercise of a living faculty in the individual intellect, and mere skill in argumentative science, which is the true interpretation of the prejudice which exists against logic in the popular mind, and of the animadversions which are levelled against it, as that its formulas make a pedant and a *doctrinaire*, that it never makes converts, {303} that it leads to rationalism, that Englishmen are too practical to be logical, that an ounce of common-sense goes farther than many cartloads of logic, that Laputa is the land of logicians, and the like. Such maxims mean, when analyzed, that the processes of reasoning which legitimately lead to assent, to action, to certitude, are in fact too multiform, subtle, omnigenous, too implicit, to allow of being measured by rule, that they are after all personal,—verbal argumentation being useful only in subordination to a higher logic. It is this which was meant by the Judge who, when asked for his advice by a friend, on his being called to

important duties which were new to him, bade him always lay down the law boldly, but never give his reasons, for his decision was likely to be right, but his reasons sure to be unsatisfactory. This is the point which I proceed to illustrate.

1. I will take a question of the present moment. "We shall have a European war, *for* Greece is audaciously defying Turkey." How are we to test the validity of the reason, implied, not expressed, in the word "for"? Only the judgment of diplomatists, statesmen, capitalists, and the like, founded on experience, strengthened by practical and historical knowledge, controlled by self-interest, can decide the worth of that "for" in relation to accepting or not accepting the conclusion which depends on it. The argument is from concrete fact to concrete fact. How will mere logical inferences, which cannot proceed without general and abstract propositions, help us on to the determination of this particular case? It is not the case of Switzerland {304} attacking Austria, or of Portugal attacking Spain, or of Belgium attacking Prussia, but a case without parallels. To draw a scientific conclusion, the argument must run somewhat in this way:—"All audacious defiances of Turkey on the part of Greece must end in a European war; these present acts of Greece are such: ergo;"—where the major premiss is more difficult to accept than the conclusion, and the proof becomes an "obscurum per obscurius." But, in truth, I should not betake myself to some one universal proposition to defend my own view of the matter; I should determine the particular case by its particular circumstances, by the combination of many uncatalogued experiences floating in my memory, of many reflections, variously produced, felt rather than capable of statement; and if I had them not, I should go to those who had. I assent in consequence of some such complex act of judgment, or from faith in those who are capable of making it, and practically syllogism has no part, even verificatory, in the action of my mind.

I take this instance at random in illustration; now let me follow it up by more serious cases.

2. Leighton says, "What a full confession do we make of our dissatisfaction with the objects of our bodily senses, that in our attempts to express what we conceive of the best of beings and the greatest of felicities to be, we describe by the exact contraries of all that we experience here,—the one as infinite, incomprehensible, immutable, &c.; the other as incorruptible, undefiled, and that passeth not away. At all events, this coincidence, say rather identity of attributes, is {305} sufficient to apprise us that, to be inheritors of bliss, we must become the children of God." Coleridge quotes this passage, and adds, "Another and more fruitful, perhaps more solid, inference from the facts would be, that there is something in the human mind which makes it know that in all finite quantity, there is an infinite, in all measures of time an eternal; that the latter are the basis, the substance, of the former; and that, as we truly are only as far as God is with us, so neither can we truly possess, that is, enjoy our being or any other real good, but by living in the sense of His holy presence." [Note 1]

What is this an argument for? how few readers will enter into either premiss or conclusion! and of those who understand what it means, will not at least some confess

that they understand it by fits and starts, not at all times? Can we ascertain its force by mood and figure? Is there any royal road by which we may indolently be carried along into the acceptance of it? Does not the author rightly number it among his "aids" for our "reflection," not instruments for our compulsion? It is plain that, if the passage is worth anything, we must secure that worth for our own use by the personal action of our own minds, or else we shall be only professing and asserting its doctrine, without having any ground or right to assert it. And our preparation for understanding and making use of it will be the general state of our mental discipline and cultivation, our own experiences, our appreciation of {306} religious ideas, the perspicacity and steadiness of our intellectual vision.

3. It is argued by Hume against the actual occurrence of the Jewish and Christian miracles, that, whereas "it is experience only which gives authority to human testimony, and it is the same experience which assures us of the laws of nature," therefore, "when these two kinds of experience are contrary" to each other, "we are bound to subtract the one from the other;" and, in consequence, since we have no experience of a violation of natural laws, and much experience of the violation of truth, "we may establish it as a maxim that no human testimony can have such force as to prove a miracle, and make it a just foundation for any such system of religion." [Note 2]

I will accept the general proposition, but I resist its application. Doubtless it is abstractedly more likely that men should lie than that the order of nature should be infringed; but what is abstract reasoning to a question of concrete fact? To arrive at the fact of any matter, we must eschew generalities, and take things as they stand, with all their circumstances. *À priori*, of course the acts of men are not so trustworthy as the order of nature, and the pretence of miracles is in fact more common than the occurrence. But the question is not about miracles in general, or men in general, but definitely, whether these particular miracles, ascribed to the particular Peter, James, and John, are more likely to have been or not; whether they are unlikely, supposing that there is a Power, external to the world, {307} who can bring them about; supposing they are the only means by which He can reveal Himself to those who need a revelation; supposing He is likely to reveal Himself; that He has a great end in doing so; that the professed miracles in question are like His natural works, and such as He is likely to work, in case He wrought miracles; that great effects, otherwise unaccountable, in the event followed upon the acts said to be miraculous; that they were from the first accepted as true by large numbers of men against their natural interests; that the reception of them as true has left its mark upon the world, as no other event ever did; that, viewed in their effects, they have—that is, the belief of them has—served to raise human nature to a high moral standard, otherwise unattainable: these and the like considerations are parts of a great complex argument, which so far can be put into propositions, but which, even between, and around, and behind these, still is implicit and secret, and cannot by any ingenuity be imprisoned in a formula, and packed into a nut-shell. These various conditions may be decided in the affirmative or in the negative. That is a further point; here I only insist upon the nature of the argument, if it is to be philosophical. It must be no smart antithesis which may look well on paper, but the living action of the mind on a great problem of fact; and we must summon to our aid all our

powers and resources, if we would encounter it worthily, and not as if it were a literary essay.

4. "Consider the establishment of the Christian religion," says Pascal in his "Thoughts." "Here is a religion contrary to our nature, which establishes itself {308} in men's minds with so much mildness, as to use no external force; with so much energy, that no tortures could silence its martyrs and confessors; and consider the holiness, devotion, humility of its true disciples; its sacred books, their superhuman grandeur, their admirable simplicity. Consider the character of its Founder; His associates and disciples, unlettered men, yet possessed of wisdom sufficient to confound the ablest philosopher; the astonishing succession of prophets who heralded Him; the state at this day of the Jewish people who rejected him and His religion; its perpetuity and its holiness; the light which its doctrines shed upon the contrarieties of our nature;—after considering these things, let any man judge if it be possible to doubt about its being the only true one." [Note 3]

This is an argument parallel in its character to that by which we ascribe the classics to the Augustan age. We urge, that, though we cannot draw the line definitely between what the monks could do in literature, and what they could not, anyhow Virgil's "Æneid" and the Odes of Horace are far beyond the highest capacity of the medieval mind, which, however great, was different in the character of its endowments. And in like manner we maintain, that, granting that we cannot decide how far the human mind can advance by its own unaided powers in religious ideas and sentiments, and in religious practice, still the facts of Christianity, as they stand, are beyond what is possible to man, and betoken the presence of a higher intelligence, purpose, and might. {309}

Many have been converted and sustained in their faith by this argument, which admits of being powerfully stated; but still such statement is after all only intended to be a vehicle of thought, and to open the mind to the apprehension of the facts of the case, and to trace them and their implications in outline, not to convince by the logic of its mere wording. Do we not think and muse as we read it, try to master it as we proceed, put down the book in which we find it, fill out its details from our own resources, and then resume the study of it? And, when we have to give an account of it to others, should we make use of its language, or even of its thoughts, and not rather of its drift and spirit? Has it never struck us what different lights different minds throw upon the same theory and argument, nay, how they seem to be differing in detail when they are professing, and in reality showing, a concurrence in it? Have we never found, that, when a friend takes up the defence of what we have written or said, that at first we are unable to recognize in his statement of it what we meant it to convey? It will be our wisdom to avail ourselves of language, as far as it will go, but to aim mainly by means of it to stimulate, in those to whom we address ourselves, a mode of thinking and trains of thought similar to our own, leading them on by their own independent action, not by any syllogistic compulsion. Hence it is that an intellectual school will always have something of an esoteric character; for it is an assemblage of minds that think; their bond is unity of thought, and their words become a sort of *tessera*, not expressing thought, but symbolizing it. {310}

Recurring to Pascal's argument, I observe that, its force depending upon the assumption that the facts of Christianity are beyond human nature, therefore, according as the powers of nature are placed at a high or low standard, that force will be greater or less; and that standard will vary according to the respective dispositions, opinions, and experiences, of those to whom the argument is addressed. Thus its value is a personal question; not as if there were not an objective truth and Christianity as a whole not supernatural, but that, when we come to consider where it is that the supernatural presence is found, there may be fair differences of opinion, both as to the fact and the proof of what is supernatural. There is a multitude of facts, which, taken separately, may perhaps be natural, but, found together, must come from a source above nature; and what these are, and how many are necessary, will be variously determined. And while every inquirer has a right to determine the question according to the best exercise of his judgment, still whether he so determine it for himself, or trust in part or altogether to the judgment of those who have the best claim to judge, in either case he is guided by the implicit processes of the reasoning faculty, not by any manufacture of arguments forcing their way to an irrefragable conclusion.

5. Pascal writes in another place, "He who doubts, but seeks not to have his doubts removed, is at once the most criminal and the most unhappy of mortals. If, together with this, he is tranquil and self-satisfied, if he be vain of his tranquillity, or makes his state a topic of mirth and self-gratulation, I have not words to describe {311} so insane a creature. Truly it is to the honour of religion to have for its adversaries men so bereft of reason; their opposition, far from being formidable, bears testimony to its most distinguishing truths; for the great object of the Christian religion is to establish the corruption of our nature, and the redemption by Jesus Christ." [Note 4] Elsewhere he says of Montaigne, "He involves everything in such universal, unmingled scepticism, as to doubt of his very doubts. He was a pure Pyrrhonist. He ridicules all attempts at certainty in anything. Delighted with exhibiting in his own person the contradictions that exist in the mind of a free-thinker, it is all one to him whether he is successful or not in his argument. The virtue he loved was simple, sociable, gay, sprightly, and playful; to use one of his own expressions, 'Ignorance and incuriousness are two charming pillows for a sound head.'" [Note 5]

Here are two celebrated writers in direct opposition to each other in their fundamental view of truth and duty. Shall we say that there is no such thing as truth and error, but that anything is truth to a man which he troweth? and not rather, as the solution of a great mystery, that truth there is, and attainable it is, but that its rays stream in upon us through the medium of our moral as well as our intellectual being; and that in consequence that perception of its first principles which is natural to us is enfeebled, obstructed, perverted, by allurements of sense and the supremacy of self, and, on the other hand, quickened by aspirations after the supernatural; so that at length two characters {312} of mind are brought out into shape, and two standards and systems of thought,—each logical, when analyzed, yet contradictory of each other, and only not antagonistic because they have no common ground on which they can conflict?

6. Montaigne was endowed with a good estate, health, leisure, and an easy temper, literary tastes, and a sufficiency of books: he could afford thus to play with life, and the abysses into which it leads us. Let us take a case in contrast.

"I think," says the poor dying factory-girl in the tale, "if this should be the end of all, and if all I have been born for is just to work my heart and life away, and to sicken in this dree place, with those mill-stones in my ears for ever, until I could scream out for them to stop and let me have a little piece of quiet, and with the fluff filling my lungs, until I thirst to death for one long deep breath of the clear air, and my mother gone, and I never able to tell her again how I loved her, and of all my troubles,—I think, if this life is the end, and that there is no God to wipe away all tears from all eyes, I could go mad!" [Note 6]

Here is an argument for the immortality of the soul. As to its force, be it great or small, will it make a figure in a logical disputation, carried on *secundum artem*? Can any scientific common measure compel the intellects of Dives and Lazarus to take the same estimate of it? Is there any test of the validity of it better than the *ipse dixit* of private judgment, that is, the judgment of those who have a right to judge, and next, the {313} agreement of many private judgments in one and the same view of it?

7. "In order to prove plainly and intelligibly," says Dr. Samuel Clarke, "that God is a Being, which must of necessity be endued with perfect knowledge, 'tis to be observed that knowledge is a perfection, without which the foregoing attributes are no perfections at all, and without which those which follow can have no foundation. Where there is no Knowledge, Eternity and Immensity are as nothing, and Justice, Goodness, Mercy, and Wisdom can have no place. The idea of eternity and omnipresence, devoid of knowledge, is as the notion of darkness compared with that of light. 'Tis as a notion of the world without the sun to illuminate it; 'tis as the notion of inanimate matter (which is the atheist's supreme cause) compared with that of light and spirit. And as for the following attributes of Justice, Goodness, Mercy, and Wisdom, 'tis evident that without knowledge there could not possibly be any such things as these at all." [Note 7]

The argument here used in behalf of the Divine Attribute of Knowledge comes under the general proposition that the Attributes imply each other, for the denial of one is the denial of the rest. To some minds this thesis is self-evident; others are utterly insensible to its force. Will it bear bringing out into words throughout the whole series of its argumentative links? for if it does, then either those who maintain it or those who reject it, the one or the other, will be compelled by logical necessity to confess that they are {314} in error. "God is wise, if He is eternal; He is good, if He is wise; He is just, if He is good." What skill can so arrange these propositions, so add to them, so combine them, that they may be able, by the force of their juxtaposition, to follow one from the other, and become one and the same by an inevitable correlation. That is not the method by which the argument becomes a demonstration. Such a method, used by a Theist in controversy against men who are unprepared personally for the question, will but issue in his retreat along a series of major propositions, farther and farther back, till he and they find themselves in a land of shadows, "where the light is as darkness."

To feel the true force of an argument like this, we must not confine ourselves to abstractions, and merely compare notion with notion, but we must contemplate the God of our conscience as a Living Being, as one Object and Reality, *under* the aspect of this or that attribute. We must patiently rest in the thought of the Eternal, Omnipresent, and All-knowing, rather than of Eternity, Omnipresence, and Omniscience; and we must not hurry on and force a series of deductions, which, if they are to be realized, must distil like dew into our minds, and form themselves spontaneously there, by a calm contemplation and gradual understanding of their premisses. Ordinarily speaking, such deductions do not flow forth, except according as the Image [Note 8], presented to us through conscience, on which they depend, is cherished within us with the sentiments which, supposing it be, as we know it is {315} the truth, it necessarily claims of us, and is seen reflected, by the habit of our intellect, in the appointments and the events of the external world. And, in their manifestation to our inward sense, they are analogous to the knowledge which we at length attain of the details of a landscape, after we have selected the right stand-point, and have learned to accommodate the pupil of our eye to the varying focus necessary for seeing them; have accustomed it to the glare of light, have mentally grouped or discriminated lines and shadows and given them their due meaning, and have mastered the perspective of the whole. Or they may be compared to a landscape as drawn by the pencil (unless the illustration seem forced), in which by the skill of the artist, amid the bold outlines of trees and rocks, when the eye has learned to take in their reverse aspects, the forms or faces of historical personages are discernible, which we catch and lose again, and then recover, and which some who look on with us are never able to catch at all.

Analogous to such an exercise of sight, must be our mode of dealing with the verbal expositions of an argument such as Clarke's. His words speak to those who understand the speech. To the mere barren intellect they are but the pale ghosts of notions; but the trained imagination sees in them the representations of things. He who has once detected in his conscience the outline of a Lawgiver and Judge, needs no definition of Him, whom he dimly but surely contemplates there, and he rejects the mechanism of logic, which cannot contain in its grasp matters so {316} real and so recondite. Such a one, according to the strength and perspicacity of his mind, the force of his presentiments, and his power of sustained attention, is able to pronounce about the great Sight which encompasses him, as about some visible object; and, in his investigation of the Divine Attributes, is not inferring abstraction from abstraction, but noting down the aspects and phases of that one thing on which he is ever gazing. Nor is it possible to limit the depth of meaning, which at length he will attach to words, which to the many are but definitions and ideas.

Here then again, as in the other instances, it seems clear, that methodical processes of inference, useful as they are, as far as they go, are only instruments of the mind, and need, in order to their due exercise, that real ratiocination and present imagination which gives them a sense beyond their letter, and which, while acting through them, reaches to conclusions beyond and above them. Such a living *organon* is a personal gift, and not a mere method or calculus.

3.

That there are cases, in which evidence, not sufficient for a scientific proof, is nevertheless sufficient for assent and certitude, is the doctrine of Locke, as of most men. He tells us that belief, grounded on sufficient probabilities, "rises to assurance;" and as to the question of sufficiency, that where propositions "border near on certainty," then "we assent to them as firmly as if they were infallibly demonstrated." The only question is, what these propositions are; this {317} he does not tell us, but he seems to think that they are few in number, and will be without any trouble recognised at once by common-sense; whereas, unless I am mistaken, they are to be found throughout the range of concrete matter, and that supra-logical judgment, which is the warrant for our certitude about them, is not mere common-sense, but the true healthy action of our ratiocinative powers, an action more subtle and more comprehensive than the mere appreciation of a syllogistic argument. It is often called the "judicium prudentis viri," a standard of certitude which holds good in all concrete matter, not only in those cases of practice and duty, in which we are more familiar with it, but in questions of truth and falsehood generally, or in what are called "speculative" questions, and that, not indeed to the exclusion, but as the supplement of logic. Thus a proof, except in abstract demonstration, has always in it, more or less, an element of the personal, because "prudence" is not a constituent part of our nature, but a personal endowment.

And the language in common use, when concrete conclusions are in question, implies the presence of this personal element in the proof of them. We are considered to feel, rather than to see, its cogency; and we decide, not that the conclusion must be, but that it cannot be otherwise. We say, that we do not see our way to doubt it, that it is impossible to doubt, that we are bound to believe it, that we should be idiots, if we did not believe. We never should say, in abstract science, that we could not escape the conclusion that {318} 25 was a mean proportional between 5 and 125; or that a man had no right to say that a tangent to a circle at the extremity of the radius makes an acute angle with it. Yet, though our certitude of the fact is quite as clear, we should not think it unnatural to say that the insularity of Great Britain is as good as demonstrated, or that none but a fool expects never to die. Phrases indeed such as these are sometimes used to express a shade of doubt, but it is enough for my purpose if they are also used when doubt is altogether absent. What, then, they signify, is, what I have so much insisted on, that we have arrived at these conclusions—not *ex opere operato*, by a scientific necessity independent of ourselves,—but by the action of our own minds, by our own individual perception of the truth in question, under a sense of duty to those conclusions and with an intellectual conscientiousness.

This certitude and this evidence are often called moral; a word which I avoid, as having a very vague meaning; but using it here for once, I observe that moral evidence and moral certitude are all that we can attain, not only in the case of ethical and spiritual subjects, such as religion, but of terrestrial and cosmical questions also. So far, physical Astronomy and Revelation stand on the same footing. Vince, in his treatise on Astronomy, does but use the language of philosophical sobriety, when, after speaking of the proofs of the earth's rotatory motion, he says, "when these reasons, all upon

different principles, are considered, they amount to a proof of the earth's rotation about its axis, which is as satisfactory to the {319} mind as the most direct demonstration could be;" or, as he had said just before, "the mind rests equally satisfied, as if the matter was strictly proved." [Note 9] That is, first there is no demonstration that the earth rotates; next there is a cluster of "reasons on *different* principles," that is, independent probabilities in cumulation: thirdly, these "*amount* to a proof," and "the mind" feels "*as if* the matter was strictly proved," that is, there is the equivalent of proof; lastly, "the mind rests *satisfied*," that is, it is certain on the point. And though evidence of the fact is now obtained which was not known fifty years ago, that evidence on the whole has not changed its character.

Compare with this avowal the language of Butler, when discussing the proof of Revelation. "Probable proofs," he says, "by being added, not only increase the evidence, but multiply it. The truth of our religion, like the truth of common matters, is to be judged by the whole evidence taken together ... in like manner as, if in any common case numerous events acknowledged were to be alleged in proof of any other event disputed, the truth of the disputed event would be proved, not only if any one of the acknowledged ones did of itself clearly imply it, but though no one of them singly did so, if the whole of the acknowledged events taken together could not in reason be supposed to have happened, unless the disputed one were true." [Note 10] Here, as in Astronomy, is the same absence of demonstration of the thesis, the same cumulating and converging indications of it, the same indirectness in the proof, as being {320} *per impossibile*, the same recognition nevertheless that the conclusion is not only probable, but true. One other characteristic of the argumentative process is given, which is unnecessary in a subject-matter so clear and simple as astronomical science, viz. the moral state of the parties inquiring or disputing. They must be "as much in earnest about religion, as about their temporal affairs, capable of being convinced, on real evidence, that there is a God who governs the world, and feel themselves to be of a moral nature and accountable creatures." [Note 11]

This being the state of the case, the question arises, whether, granting that the personality (so to speak) of the parties reasoning is an important element in proving propositions in concrete matter, any account can be given of the ratiocinative method in such proofs, over and above that analysis into syllogism which is possible in each of its steps in detail. I think there can; though I fear, lest to some minds it may appear far-fetched or fanciful; however, I will hazard this imputation. I consider, then, that the principle of concrete reasoning is parallel to the method of proof which is the foundation of modern mathematical science, as contained in the celebrated lemma with which Newton opens his "Principia." We know that a regular polygon, inscribed in a circle, its sides being continually diminished, tends to become that circle, as its limit; but it vanishes before it has coincided with the circle, so that its tendency to be the circle, though ever nearer fulfilment, never in fact gets beyond a tendency. {321} In like manner, the conclusion in a real or concrete question is foreseen and predicted rather than actually attained; foreseen in the number and direction of accumulated premisses, which all converge to it, and as the result of their combination, approach it more nearly than any assignable difference, yet do not touch it logically (though only not touching it,)

on account of the nature of its subject-matter, and the delicate and implicit character of at least part of the reasonings on which it depends. It is by the strength, variety, or multiplicity of premisses, which are only probable, not by invincible syllogisms,—by objections overcome, by adverse theories neutralized, by difficulties gradually clearing up, by exceptions proving the rule, by un-looked-for correlations found with received truths, by suspense and delay in the process issuing in triumphant reactions,—by all these ways, and many others, it is that the practised and experienced mind is able to make a sure divination that a conclusion is inevitable, of which his lines of reasoning do not actually put him in possession. This is what is meant by a proposition being "as good as proved," a conclusion as undeniable "as if it were proved," and by the reasons for it "amounting to a proof," for a proof is the limit of converging probabilities.

It may be added, that, whereas the logical form of this argument, is, as I have already observed, indirect, viz. that "the conclusion cannot be otherwise," and Butler says that an event is proved, if its antecedents "could not in reason be supposed to have happened *unless* it were true," and law-books tell us that the {322} principle of circumstantial evidence is the *reductio ad absurdum*, so Newton too is forced to the same mode of proof for the establishment of his lemma, about prime and ultimate ratios. "If you deny that they become ultimately equal," he says, "let them be ultimately unequal;" and the consequence follows, "which is against the supposition."

Such being the character of the mental process in concrete reasoning, I should wish to adduce some good instances of it in illustration, instances in which the person reasoning confesses that he is reasoning on this very process, as I have been stating it; but these are difficult to find, from the very circumstance that the process from first to last is carried on as much without words as with them. However, I will set down three such.

1. First, an instance in physics. Wood, treating of the laws of motion, thus describes the line of reasoning by which the mind is certified of them. "They are not indeed self-evident, nor do they admit of accurate proof by experiment, on account of the effects of friction and the air's resistance, which cannot entirely be removed. They are, however, constantly and invariably suggested to our senses, and they agree with experiment, as far as experiment can go; and the more accurately the experiments are made, and the greater care we take to remove all those impediments which tend to render the conclusions erroneous, the more nearly do the experiments coincide with these laws.

"Their truth is also established upon a different ground: from these general principles innumerable {323} particular conclusions have been deducted; sometimes the deductions are simple and immediate, sometimes they are made by tedious and intricate operations; yet they are all, without exception, consistent with each other and with experiment. It follows thereby, that the principles upon which the calculations are founded are true." [Note 12]

The reasoning of this passage (in which the uniformity of the laws of nature is assumed) seems to me a good illustration of what must be considered the principle or form of an

induction. The conclusion, which is its scope, is, by its own confession, not proved; but it ought to be proved, or is as good as proved, and a man would be irrational who did not take it to be virtually proved; first, because the imperfections in the proof arise out of its subject-matter and the nature of the case, so that it *is* proved *interpretativè*; and next, because in the same degree in which these faults in the subject-matter are overcome here or there, are the involved imperfections here or there of the proof remedied; and further, because, when the conclusion is assumed as an hypothesis, it throws light upon a multitude of collateral facts, accounting for them, and uniting them together in one whole. Consistency is not always the guarantee of truth; but there may be a consistency in a theory so variously tried and exemplified as to lead to belief in it, as reasonably as a witness in a court of law may, after a severe cross-examination, satisfy and assure judge, jury, and the whole court, of his simple veracity. {324}

2. And from the courts of law shall my second illustration be taken.

A learned writer says, "In criminal prosecutions, the circumstantial evidence should be such, as to produce nearly the same degree of certainty as that which arises from direct testimony, and to exclude a rational probability of innocence." [Note 13] By degrees of certainty he seems to mean, together with many other writers, degrees of proof, or approximations towards proof, and not certitude, as a state of mind; and he says that no one should be pronounced guilty on evidence which is not equivalent in weight to direct testimony. So far is clear; but what is meant by the expression "*rational*probability"? for there can be no probability but what is rational. I consider that the "exclusion of a rational probability" means the "exclusion of any argument in the man's favour which has a rational claim to be called probable," or rather, "the rational exclusion of any supposition that he is innocent;" and "rational" is used in contra-distinction to argumentative, and means "resting on implicit reasons," such as we feel, indeed, but which for some cause or other, because they are too subtle or too circuitous, we cannot put into words so as to satisfy logic. If this is a correct account of his meaning, he says that the evidence against a criminal, in order to be decisive of his guilt, to the satisfaction of our conscience, must bear with it, along with the palpable arguments for that guilt, such a reasonableness, or body of implicit reasons for it in addition, as may exclude any probability, really such, that he is not guilty,—that is, it must be {325} an evidence free from anything obscure, suspicious, unnatural, or defective, such as (in the judgment of a prudent man) would hinder that summation and coalescence of the evidence into a proof, which I have compared to the running into a limit, in the case of mathematical ratios. Just as an algebraical series may be of a nature never to terminate or admit of valuation, as being the equivalent of an irrational quantity or surd, so there may be some grave imperfections in a body of reasons, explicit or implicit, which is directed to a proof, sufficient to interfere with its successful issue or resolution, and to balk us with an irrational, that is, an indeterminate, conclusion.

So much as to the principle of conclusions made upon evidence in criminal cases; now let us turn to an instance of its application in a particular instance. Some years ago there was a murder committed, which unusually agitated the popular mind, and the evidence against the culprit was necessarily circumstantial. At the trial the Judge, in

addressing the Jury, instructed them on the kind of evidence necessary for a verdict of *guilty*. Of course he could not mean to say that they must convict a man, of whose guilt they were not certain, especially in a case in which two foreign countries, Germany and the American States, were attentively looking on. If the Jury had any doubt, that is, reasonable doubt, about the man's guilt, of course they would give him the benefit of that doubt. Nor could the certitude, which would be necessary for an adverse verdict, be merely that which is sometimes called a "practical certitude," that is, a certitude indeed, {326} but a certitude, that it was a "duty," "expedient," "safe," to bring in a verdict of guilty. Of course the Judge spoke of what is called a "speculative certitude," that is, a certitude of the fact that the man was guilty; the only question being, what evidence was sufficient for the proof, for the certitude of that fact. This is what the Judge meant; and these are among the remarks which, with this drift, he made upon the occasion:—

After observing that by circumstantial evidence he meant a case in which "the facts do not directly prove the actual crime, but lead to the conclusion that the prisoner committed that crime," he went on to disclaim the suggestion, made by counsel in the case, that the Jury could not pronounce a verdict of *guilty*, unless they were as much satisfied that the prisoner did the deed as if they had seen him commit it. "That is not the certainty," he said, "which is required of you to discharge your duty to the prisoner, whose safety is in your hands." Then he stated what was the "degree of certainty," that is, of certainty or perfection of proof, which was necessary to the question, "involving as it did the life of the prisoner at the bar,"—it was such as that "with which," he said, "you decide upon and conclude your own most important transactions in life. Take the facts which are proved before you, separate those you believe from those which you do not believe, and all the conclusions that naturally and almost necessarily result from those facts, you may confide in as much as in the facts themselves. The case on the part of the prosecution is the *story* of the murder, told by {327} the *different* witnesses, who *unfold the circumstances one after another*, according to their occurrence, together with the *gradual* discovery of some apparent connexion between the property that was lost, and the possession of it by the prisoner."

Now here I observe, that whereas the conclusion which is contemplated by the Judge, is what may be pronounced (on the whole, and considering all things, and judging reasonably) a proved or certain conclusion, that is, a conclusion of the truth of the allegation against the prisoner, or of the fact of his guilt, on the other hand, the *motiva* constituting this reasonable, rational proof, and this satisfactory certitude, needed not, according to him, to be stronger than those on which we prudently act on matters of important interest to ourselves, that is, probable reasons viewed in their convergence and combination. And whereas the certitude is viewed by the Judge as following on converging probabilities, which constitute a real, though only a reasonable, not an argumentative, proof, so it will be observed in this particular instance, that, in illustration of the general doctrine which I have laid down, the process is one of "line upon line, and letter upon letter," of various details accumulating and of deductions fitting into each other; for, in the Judge's words, there was a story—and that not told right out and by one witness, but taken up and handed on from witness to witness—gradually unfolded, and tending to a proof, which of course might have been ten times

stronger than it was, but was still a proof for all that, and sufficient for its conclusion,—just as we see that {328} two straight lines are meeting, and are certain they will meet at a given distance, though we do not actually see the junction.

3. The third instance I will take is one of a literary character, the divination of the authorship of a certain anonymous publication, as suggested mainly by internal evidence, as I find it in a critique written some twenty years ago. In the extract which I make from it, we may observe the same steady march of a proof towards a conclusion, which is (as it were) out of sight;—a reckoning, or a reasonable judgment, that the conclusion really is proved, and a personal certitude upon that judgment, joined with a confession that a logical argument could not well be made out for it, and that the various details in which the proof consisted were in no small measure implicit and impalpable.

"Rumour speaks uniformly and clearly enough in attributing it to the pen of a particular individual. Nor, although a cursory reader might well skim the book without finding in it anything to suggest, &c., … will it appear improbable to the more attentive student of its internal evidence; and the improbability will decrease more and more, in proportion as the *reader is capable* of judging and appreciating the *delicate, and at first invisible touches*, which limit, to *those who understand them*, the individuals who can have written it to a very small number indeed. The utmost scepticism as to its authorship (*which we do not feel ourselves*) cannot remove it farther from him than to that of some one among his most intimate {329} friends; so that, leaving others to discuss antecedent probabilities," &c.

Here is a writer who professes to have no doubt at all about the authorship of a book,—which at the same time he cannot prove by mere argumentation set down in words. The reasons of his conviction are too delicate, too intricate; nay, they are in part invisible; invisible, except to those who from circumstances have an intellectual perception of what does not appear to the many. They are personal to the individual. This again is an instance, distinctly set before us, of the particular mode in which the mind progresses in concrete matter, viz. from merely probable antecedents to the sufficient proof of a fact or a truth, and, after the proof, to an act of certitude about it.

I trust the foregoing remarks may not deserve the blame of a needless refinement. I have thought it incumbent on me to illustrate the intellectual process by which we pass from conditional inference to unconditional assent; and I have had only the alternative of lying under the imputation of a paradox or of a subtlety.

Notes

1. "Aids to Reflection," p. 59, ed. 1839.

2. Works, vol. iii. p. 178, ed. 1770.

3. Taylor's Translation, p. 131.

797 4. Ibid. pp 108-110.

798 5. Ibid. pp. 429-436.

799 6. "North and South."

800 7. Serm. xi. init.

801 8. *Vide supr*. ch. v. § 1, pp. 109, 113.

802 9. Pp. 84, 85.

803 10. "Analogy," pp. 329, 330, ed. 1836.

804 11. Ibid. p. 278.

805 12. "Mechanics," p. 31.

806 13. Phillipps' "Law of Evidence," vol. i. p. 456.