The Philosophy of John Locke
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The author of the work criticised by Leibniz, John Locke, was born at Wrington in Somersetshire. A fellow-countryman of Occam and the two Bacons, he shows the anti-mystical and positivistic tendencies common to English philosophy. The study of medicine revealed to him the barrenness of scholastic learning. What, in his opinion, perpetuated the traditions of a priori speculation and the ignorance of reality, was the Platonic doctrine of innate metaphysical, moral, and religious truths, teachings which Ralph Cudworth and Descartes himself had undertaken to defend. The fact is, if truth is native to the mind, it is useless to search for it outside by observation and experimentation. Then we may, by means of a priori speculation, meditation, and reasoning, evolve it from our own inner consciousness, as the spider spins its web out of itself. This hypothesis Descartes consistently carries out when he “closes his eyes and stops his ears,” and abstracts from everything acquired by the senses; but he ceases to be consistent when he assiduously devotes himself to the study of anatomy and physiology. Indeed, the favorite method of the metaphysics of the monasteries and universities was to close one’s eyes, to stop one’s ears, and to ignore the real world. This method prevailed as long as the conviction existed that our ideas have their source within us. Hence, it was necessary, in order to make the philosophers “open their eyes to the real world,” to prove to them that all our ideas come to us from without, through the medium of sensation: it was necessary to demonstrate that our ideas are not innate but acquired.

This Locke undertook to do in his Essay concerning Human Understanding (London, 1690), which, with important additions by the author, was translated into French by Coste (1700). This great work marks the beginning of a series of investigations which were completed by Kant’s Critique. Locke’s aim is: (1) to discover what is the origin of our ideas; (2) to show what is the certainty, the evidence, and the extent of our knowledge; (3) to compel philosophy to abandon what surpasses human comprehension by clearly marking the limits of its capacity.

We have no innate knowledge: such is his revolutionary doctrine against idealism.

As it is evident that new-born children, idiots, and even the great part of illiterate men, have not the least apprehension of the axioms alleged to be innate, the advocates of innate ideas are obliged to assume that the mind can have ideas without being conscious of them. But to say, a notion is imprinted on the mind, and at the same time to maintain that the mind is ignorant of it, is to make this impression nothing. If these words, to be in the understanding, have any positive meaning, they signify to be perceived and to be understood by the understanding: hence, if any one asserts that a thing is in the understanding, and that it is not understood by the understanding, and that it is in the mind without being perceived by the mind, it amounts to saying that a thing is and is not in the understanding.

The knowledge of some ideas, it is true, is very early in the mind. But if we will observe, we shall find that these kinds of truths are made up of acquired and not of innate truths. It is by degrees that we acquire ideas, that we learn the terms which are employed to express them, and that we come to understand their true connection. The universal consent of mankind to certain truths does not prove that these are innate; for nobody knows those truths till he hears them from others. For, if they were innate, “what need they be proposed to gain assent?” An innate and unknown truth is a contradiction in terms.
The principles of morals are no more innate than the rest, unless we so call the desire for happiness and the aversion to misery, which are, indeed, innate tendencies, but which are not the expressions of some truth engraven on the understanding. In this field universal consent cannot be invoked in any case; for moral ideas vary from nation to nation, from religion to religion. The keeping of contracts, for example, is without dispute one of the most undeniable duties in morality. But, if you ask a Christian, who believes in rewards and punishments after this life, why a man should keep his word, he will give this as a reason: Because God, who has the power of eternal life and death, requires it of us. But if a Hobbist be asked why, he will answer, Because the public requires it, and the Leviathan will punish you if you do not. Finally, a pagan philosopher would have answered that the violation of a promise was dishonest, unworthy of the excellence of man, and contrary to his vocation, which is perfect virtue.

The fact is urged against Locke that conscience reproaches us for the breach of the rules of morality. But conscience is nothing else but our own opinion of our own actions, and if conscience were a proof of the existence of innate principles, these principles could be contrary to each other, since some persons do, for conscience's sake, what others avoid for the same reason. Do not the savages practise enormities without the slightest remorse? The breaking of a moral rule is undoubtedly no argument that it is unknown. But it is impossible to conceive that a whole nation of men should all publicly reject what every one of them certainly and infallibly knew to be a moral law. No practical rule which is anywhere transgressed by general consent can be regarded as innate. To hold that the practical principles are innate is to declare all moral education impossible.

That does not mean that there are only positive laws. There is a great deal of difference between an innate law and a law of nature, between a truth originally imprinted on our minds and a truth which we are ignorant of, but may attain to the knowledge of by the use and due application of our natural faculties. Furthermore, consider the origin of a host of doctrines which pass as indubitable axioms: though derived from no other source than the superstition of a nurse or the authority of an old woman, they often grow up, by length of time and consent of neighbors, to the dignity of principles in religion and morality. The mind of the child receives the impressions which we desire to give it, like white paper on which you write any characters you choose. When children so instructed reach the age of reason and come to reflect on themselves, they cannot find anything more ancient in their minds than those opinions, and therefore imagine that those propositions of whose knowledge they can find in themselves no original, are the impress of God and nature, and not things taught them by any one else.

Moreover, how can a truth, that is, a proposition, be innate, if the ideas which make up that truth are not? In order that a proposition be innate, certain ideas must be innate; but, excepting perhaps some faint ideas of hunger, warmth, and pains, which they may have felt in the mother's womb, there is not the least appearance that new-born children have any settled ideas. Even the idea of God is not innate; for besides the individuals who are called atheists and who are really atheists, there are whole nations who have no notion of God nor any term to express it. Moreover, this notion varies infinitely from coarse anthropomorphism to the deism of the philosophers. And even if it were universal and everywhere the same, it would not, on that account, be more innate than the idea of fire; for there is no one who has any idea of God who has not also the idea of fire.

The soul is originally an empty tablet. Experience is the source of all our ideas, the foundation of all our knowledge, that is, the observations which we make about external sensible objects or about the internal operations of our minds. Sensation is the source of our knowledge of external objects, reflection, of our knowledge of internal facts. There is not in the mind a single idea that is not derived from one or both of these principles. The first ideas of the child come from sensation, and it is only at a more advanced age that he seriously reflects on what takes place within him. The study of languages may be cited in support of this thesis. In fact, all the words which we employ depend on sensible ideas, and those which are made use of to stand for actions and notions quite removed from sense have their rise from thence, and from obvious sensible ideas are transferred to more abstruse significations. Thus, for example, to imagine,
apprehend, comprehend, adhere, conceive, instil, disgust, disturbance, tranquillity, etc., are all words taken from the operations of sensible things and applied to certain modes of thinking. Spirit, in its primary signification, is breath; angel, a messenger. If we could trace all these words to their sources, we should certainly find in all languages the names which stand for things that fall not under our senses to have had their first rise from sensible ideas. Follow a child from its birth and observe the alterations that time makes, and you shall find, as the mind by the senses comes more and more to be furnished with ideas, it comes to be more and more awake, and thinks more, the more it has matter to think on.

Locke answers the question, When do we begin to think? as follows: As soon as sensation furnishes us with the materials. We do not think before we have sensations. Nihil est in intellectu quod non antea fuerit in sensu. According to the idealist, thought is the essence of the soul, and it is not possible for the soul not to think; it thinks antecedent to and independently of sensation; it always thinks even though it is not conscious of it. But experience, which alone can settle the question, by no means proves it, and it is not any more necessary for the soul always to think than it is for the body always to move. The absolute continuity of thought is one of those hypotheses which have no fact of experience to bear them out. A man cannot think without perceiving that he thinks. With as much reason might we claim that a man is always hungry, but that he does not always feel it. Thought depends entirely on sensation. In its sublimest ideas and in its highest speculations it does not stir beyond those ideas which sense or reflection has offered for its contemplation. In this part the understanding is purely passive. The objects of our senses obtrude their particular ideas upon our minds whether we will or not. These simple ideas, when offered to the mind, the understanding can no more refuse to have, nor alter, nor blot them out, than a mirror can refuse, alter, or obliterate the images of the objects placed before it.

There are two kinds of ideas, some simple and some complex. These simple ideas, the materials of all our knowledge, are suggested to the mind only by those two ways above mentioned, viz., sensation and reflection. The mind, though passive in the formation of simple ideas, is active in the formation of complex ideas. It receives the former, it makes the latter. When it has once received the simple ideas it has the power to repeat, compare, and unite them, even to an almost infinite variety, and so can make new complex ideas. But it is not in the power of the most fruitful mind to form a single new simple idea, not taken in by the way of sensation and reflection. The dominion of man, in this little world of his own understanding, is the same as it is in the great world of visible things, wherein his power, however managed by art and skill, reaches no farther than to compound and divide the materials that are made to his hand; but can do nothing towards the making the least particle of new matter, or destroying one atom of what is already in being.

The simple ideas come into our minds by one sense only, or by more senses than one, or from reflection only, or, finally, by all the ways of sensation and reflection.

Among the ideas which come to us only through one sense (colors, sounds, tastes, smells, etc.), there is none which we receive more constantly than the idea of solidity or impenetrability. We receive this idea from touch. This, of all simple ideas, is the idea most intimately connected with and essential to body. Solidity is neither space — with which the Cartesians erroneously identify it — nor hardness. It differs from space as resistance differs from non-resistance. A body is solid in so far as it fills the space which it occupies to the absolute exclusion of every other body; it is hard, in so far as it does not easily change its figure. It is not properly a definition of solidity that Locke pretends to give us. If we ask him to give us a clearer explanation of solidity, he sends us to our senses to inform us. The simple ideas we have are such as experience teaches us; but if, beyond that, we endeavor to make them clearer in the mind, we shall succeed no better.

The ideas which come to the mind by more than one sense (sight and touch) are those of space or extension, figure, rest, and motion. By reflection we get the ideas of perception or the power of thinking, and the ideas of volition or the power to act. Finally, the ideas of pleasure, pain, power, existence, and unity come to us by sensation and reflection.
Some of the external causes of our sensations are real and positive, others are only privations in the objects from whence our senses derive those ideas, like those, for example, which produce the ideas of cold, darkness, and rest. When the understanding perceives these ideas, it considers them as distinct and as positive as the others, without taking notice of the causes that produce them, which is an inquiry not belonging to the idea, as it is in the understanding, but to the nature of the things existing without us. Now these are two very different things, and carefully to be distinguished; we must not think that our ideas are exactly the images and resemblances of something inherent in the object which produces them; for most of the ideas of sensation which are in our minds are no more the likeness of something existing without us, than the names that stand for them are the likeness of our ideas, although these names are apt to excite ideas in us as soon as we hear them. Different things should have different names; hence, whatsoever the mind perceives in itself, every perception that is in the mind when it thinks, Locke calls idea, and the power or faculty to produce any idea in our mind he calls the quality of the subject (we should say: of the object).

That being established, Locke, like Hobbes, distinguishes two kinds of qualities. Some, such as solidity, extension, figure, and mobility, are inseparable from the body, in what state soever it be: such as it constantly keeps in all the alterations it suffers. These are the original or primary or real qualities of body. Others, like colors, sounds, tastes, etc., do not belong to the bodies themselves, and are nothing but the power which they have to produce various sensations in us by their primary qualities, that is, by the bulk, figure, texture, and motion of their insensible parts. Locke calls them secondary qualities; qualities, in order to comply with the common way of speaking, which considers white, red, and sweet as something inherent in the bodies; secondary, in order to distinguish them from those which are real qualities.

Whatever reality we may by mistake attribute to them, colors, smells, sounds, and tastes are nothing but sensations produced in us by the primary or real qualities of bodies, — sensations which in no way resemble the qualities which exist in the objects. What is sweet, blue, or warm in idea is nothing but a certain bulk, figure, and motion of the insensible parts in the bodies themselves which we call so. Take away the sensation which we have of these qualities; let not the eyes see light or colors, nor the ears hear sounds; let the palate not taste, nor the nose smell; and all colors, tastes, odors, and sounds will vanish and cease to exist. In the opposite hypothesis, the result will be the same. Suppose man were endowed with senses sufficiently fine to discern the small particles of bodies and the real constitution on which their sensible qualities depend, and they will produce in him quite different ideas. The effects of the microscope prove it; blood, for example, seems quite red to us, but by means of this instrument, which discovers to us its smallest particles, we see nothing but a very small number of red globules; and we do not know how these red globules would appear if we could find glasses with a magnifying power that is a thousand or ten thousand times greater.

The formation of ideas presupposes the following faculties in the understanding: (1) perception, which is the first step and degree towards knowledge, and the inlet of all the materials of it; (2) retention, which keeps the ideas brought into the mind, for some time actually in view (contemplation), and revives again those which after imprinting have disappeared from it (memory); (3) discernment, or the faculty of clearly distinguishing between the different ideas; (4) comparison, which forms that large tribe of ideas comprehended under relations; (5) composition, whereby the mind joins together several simple ideas which it has received from sensation and reflection, and combines them into complex ones; finally (6) abstraction. If every particular idea that we take in should have a distinct name, the number of words would be endless. To prevent this, the mind makes the particular ideas received from particular objects, general; it separates them (abstrahere) from all the circumstances which make these ideas represent particular and actually existent beings, as time, place, and other concomitant ideas. This operation of the mind is called abstraction. It is the prerogative of the human mind, whereas the preceding faculties are common to man and brutes.

The mind is passive in perception proper, but becomes more and more active in the following steps; comparison, the composition of complex ideas, and abstraction, are the three great acts
of the mind. But, however active the mind may be in the formation of complex ideas, these are in the last analysis but modes or modifications of the materials which it passively receives from sensation and reflection.

Thus the ideas of place, figure, distance, and immensity are modifications or modes of the simple idea of space, which is acquired by sight and touch; the ideas of periods, hours, days, years, time, eternity, are modifications of the idea of duration or succession, which we acquire by observing the constant train of ideas which succeed one another in our minds; the idea of finite and infinite, modifications of the idea of quantity.

If it be objected that the ideas of infinity, eternity, and immensity cannot have the same source as the others, since the objects which surround us have no affinity nor any proportion with an infinite extension or duration, Locke answers that these ideas are merely negative, that we do not actually have in the mind any positive idea of an infinite space or an endless duration (Aristotle). All our positive ideas are always limited. The negative idea of an infinite space and duration comes from the power which the mind has of extending its ideas of space and duration by an endless number of new additions.

We get the idea of active and passive power (receptivity) when we observe, on the one hand, the continual alteration in things, and, on the other, the constant change of our ideas, which is sometimes caused by the impression of outward objects on our senses, and sometimes by the determination of our own will.

When we reflect on the power which the mind has to command the presence or the absence of any particular idea, or to prefer the motion of any part of the body to its rest, and vice versa, we acquire the idea of will. Will is not opposed to necessity, but to restraint. Liberty is not an attribute of the will. Will is a power or ability, and freedom another power or ability; so that to ask a man whether his will be free is to ask whether one power has another power, one ability another ability. To speak of a free will is like speaking of swift sleep or square virtue. We are not free to will. We are not free to will or not to will a thing which is in our power, when once we give our attention to it. The will is determined by the mind, and the mind is determined by the desire for happiness. On this point Locke, Leibniz, and Spinoza are in perfect accord, and unanimously opposed to Cartesian indeterminism.

The notions which we have just analyzed are combinations of simple ideas of the same kind (simple modes). Others, like obligation, friendship, falsehood, and hypocrisy, are composed of simple ideas of different kinds (mixed modes). Thus, the mixed mode which the word lie stands for is made of these simple ideas: (1) articulate sounds; (2) certain ideas in the mind of the speaker; (3) words which are the signs of those ideas; (4) those signs put together by affirmation or negation, otherwise than as the ideas they stand for are in the mind of the speaker.

We get the idea of these mixed modes as follows: (1) By experience and observation of things themselves. Thus, by seeing two men wrestle or fence we get the idea of wrestling or fencing. (2) By invention, or voluntary putting together of several simple ideas in our own minds: so he that first invented printing or etching had an idea of it in his mind before it ever existed. (3) By explaining the names of actions we never saw, or notions we cannot see. The several fashions, customs, and manners of a nation give rise to several combinations of ideas which are familiar and necessary to that nation, but which another people have never had any occasion to make. Special names come to be annexed to such special combinations of a people, to avoid long periphrases in things of daily conversation (ostracism among the Greeks, proscription among the Romans), and so there are in every language particular terms which cannot be literally translated into any other.

So much for the complex ideas that express modes.

The complex ideas of substances (man, horse, tree) are formed as follows: The mind observes that a certain number of simple ideas, conveyed in by the different senses, constantly go together, and accustoms itself to regard such a complication of ideas as one object, and designates it by one name. Hence, a substance is nothing but a combination of a certain number of simple ideas, considered as united in one thing. Thus the substance called sun is nothing but the aggregate of the ideas of light, heat, roundness, and constant, regular motion. By substance, the philosophy
of the School, and afterwards Descartes, imagined an unknown object, which they assumed to be the support (substratum) of such qualities as are capable of producing simple ideas in us, which qualities are commonly called accidents. But this substance considered as anything else but the combination of these qualities, as something hidden behind them, is a mere phantom of the imagination. We have no distinct idea of such a substratum without qualities. If any one should be asked wherein color or weight inheres, “he would have nothing to say, but the solid extended parts; and if he were demanded what is it that solidity and extension adhere in, he would not be in a much better case than the Indian before mentioned, who, saying that the world was supported by a great elephant, was asked what the elephant rested on; to which his answer was, — a great tortoise; but being again pressed to know what gave support to the broad-backed tortoise, replied, — something, he knew not what.”

Our knowledge does not extend beyond the assumed accidents, that is, beyond our simple ideas, and whenever metaphysics attempts to proceed beyond them it is confronted with insurmountable difficulties.

The third class of complex ideas express relation. The most comprehensive relation wherein all things are concerned is the relation of cause and effect. We get the idea of this by noticing, by means of the senses, the constant vicissitude of things, and by observing that they owe their existence to the action of some other being. Locke does not analyze the idea of cause as thoroughly as his successor Hume. We shall see that the latter regards it as no less illusory than the idea of substance, or substratum.

In passing from the study of ideas to the problem of knowledge and certitude, Locke enters upon a philological discussion, which we have partly reproduced above, and which stamps him as one of the founders of the philosophy of language.

All things that exist are particulars. The far greatest part of words (with the exception of proper names) are general terms; which has not been the effect of neglect or chance, but of reason and necessity. In what do the species and genera consist, and how do they come to be formed? Our ideas are at first particular. The ideas which the children have of their nurse and their mother represent only those individuals. The names which they first gave to them are confined to these individuals and designate only them. Afterwards, when time and a larger acquaintance with the world have made them observe that there are a great many other things that resemble their father and mother and those persons they have been used to, they frame an idea, which they find those many particulars do partake in; and to that they give, with others, the name man. And thus they come to have a general name, and a general idea; wherein they make nothing new, but only leave out of the complex idea they had of Peter and James, Mary and Jane, that which is peculiar to each, and retain only what is common to all. In the same way they acquire all general ideas. This process of abstraction and generalization is a necessity; for it would be impossible for each thing to have a particular name. It is beyond the power of human capacity to frame and retain distinct ideas of all the particular things we meet with, -- of every tree, of every plant, of every beast, that affected the senses. Still less possible would it be to retain their names. But even if it could be done, it would not be of any great use for the improvement of knowledge; for although our knowledge is founded on particular observations, it enlarges itself by general views, which can only be formed by reducing the things to certain species under general names.

General notions (universalia) are nothing but abstract and partial ideas of more complex ones, taken from particular existences. They are simple products of our minds. General and universal belong not to the real existence of things; but are the inventions and creatures of the understanding. It is true that nature, in the production of things, makes several of them alike; there is nothing more obvious, especially in the races of animals, and all things propagated by seed. But the reduction of these things to species is the workmanship of the understanding. Owing to its lack of a thorough knowledge of nature, the Platonic doctrine, which regarded universals as the ingenerable and incorruptible essences of things, disregarded this fact of experience that all things that exist, besides their author, are liable to change; thus, that which was grass to-day is to-morrow the flesh of a sheep, and within a few days after becomes part of a man. In the organic world, as elsewhere, the genera, species, essences, and substantial forms,
dreamt of by the metaphysicians, far from being things regularly and constantly made by nature and having a real existence in things themselves (Aristotle) or apart from them (Plato), “appear, upon a more wary survey, to be nothing else but an artifice of the understanding, for the easier signifying such collections of ideas as it should often have occasion to communicate by one general term.” Notice, moreover, how doubtful is the signification of the word “species,” and how difficult it is to define organic beings. So uncertain are the boundaries of animal species that none of the definitions of the word “man” which we yet have, nor descriptions of that sort of animal, are so perfect and exact as to satisfy a considerate inquisitive person. We may find that learned men multiply species too much, but we may also hold the opposite. Why, for example, are not a shock and a hound as distinct species as a spaniel and an elephant? Any one who carefully observes the individuals ranked under one and the same general name can hardly doubt that many of them are as different, one from another, as several of those which are ranked under different specific names.

We may remark, in passing, that the modern theory of the transmutation of species is nothing but an application of Locke’s teaching that species have no objective reality. Let us also note the important fact that this extreme nominalism closely approximates extreme realism. Scholastic nominalism denies the reality of species, and absolutely affirms the reality of individuals to the exclusion of everything else. In this sense Leibniz is a nominalist. English nominalism, from which the theory of transformation takes its rise, denies not only the existence of species, but also the stability of the individuals themselves. All things, says Locke, besides their author, are liable to change. Now this is exactly what Spinoza teaches. He is not content with repudiating universals for the sake of the one universal Being, but considers the individuals themselves as passing modes of what he calls substance, what the materialists call matter, and Locke and the positivists call the great unknown.

Hence, species, genera, and universals are mere words (flatus vocis). The traditional error of the metaphysicians consists in taking words for things. The disciples of the Peripatetic philosophy are persuaded that the ten categories of Aristotle, substantial forms, vegetative souls, abhorrence of a vacuum, are something real. The Platonists have their soul of the world, and the Epicureans their endeavor towards motion in their atoms. All this is gibberish, which, in the weakness of the human understanding, serves to palliate our ignorance and cover our errors. We must be content; there are limits to our knowledge that cannot be crossed.

Well, then, what is knowledge?

It is nothing but the perception of the connection and agreement, or disagreement and repugnancy, of any of our ideas. From this definition it follows that our knowledge does not reach further than our ideas; nay, it is even much narrower than these, because the connection between most of our simple ideas is unknown. Hence we may affirm that, although our knowledge may be carried much further than it has hitherto been, it will never reach to all we might desire to know concerning those ideas we have, nor be able to resolve all the questions that might arise concerning any of them. Thus, we have the ideas of matter and thinking, but possibly shall never be able to know whether any mere material thing thinks or no; it being impossible for us to discover whether Omnipotency has not given to some systems of matter fitly disposed, a power to perceive and think. We are perfectly conscious of the existence of our soul, without knowing exactly what it is; and he who will take the trouble to consider freely the difficulties contained in both the spiritualistic and the materialistic hypotheses, will scarce find his reason able to determine him fixedly for or against the soul’s materiality. Just as we are absolutely ignorant whether there is any opposition or connection between extension and thought, matter and perception, so too it is impossible for us to know anything of the union or incompatibility between the secondary qualities of an object (between its color, taste, and smell), on the one hand, and between any secondary quality and those primary qualities on which it depends, on the other.

Though our knowledge does not reach further than our ideas and the perception of their agreement or disagreement, and though we have no knowledge of what the things they represent are in themselves, it does not follow that all our knowledge is illusory and chimerical.
We have an intuitive and immediate knowledge of our own existence, even if we are ignorant of the metaphysical essence of the soul. We have a demonstrative knowledge of God, although our understanding cannot comprehend the immensity of his attributes. Finally, we know the other things by sensation. It is true, we do not know them immediately, and consequently our knowledge is real only so far as there is a conformity between our ideas and the reality of things. But we are not absolutely without a criterion for knowing whether our ideas agree with the things themselves. It is certain that our simple ideas correspond to external realities; for since the mind can by no means make them to itself without the intervention of the senses (as witness men born blind), it follows that they are not fictions of the imagination, but the natural and regular productions of things without us, really operating upon us. The reality of external things is further proved by the fact that there is a very great difference between an idea that comes from an actual sensation and one that is revived in memory, and that the pleasure or pain which follows upon an actual sensation does not accompany the return of these ideas when the external objects are absent. Finally, our senses bear witness to the truth of each other’s report concerning the existence of sensible things without us. He that sees a fire may, if he doubt whether it be anything more than a bare fancy, feel it too, and be convinced by putting his hand in it, which certainly could never be put into such exquisite pain by a bare idea or phantom.

Let us sum up. There are no innate ideas; no innate truths, maxims, or principles; no other sources of knowledge but sensation for external things, and reflection for what takes place within us. Consequently, it is impossible to know anything outside of what experience, be it external or internal, furnishes us. Philosophy must abandon the transcendental problems of substance, essence, and the inner constitution of things, as well as all methods except observation, induction, and experience. The soul exists, but we cannot know whether its essence is material or immaterial. The freedom of indifference is denied. God exists, but we know nothing of his nature. Outside of us exist solidity, extension, figure, and motion, as primary qualities, or such as inhere in the bodies themselves. The substance of bodies is identical with the sum of these qualities. These qualities are distinguished from secondary qualities (colors, sounds, tastes, smells, etc.), which are merely sensations of the soul produced by the primary qualities of bodies, and do not exist as such in the objects themselves. Finally, the reality of species is absolutely denied.

These doctrines are the culmination of the nominalistic movement which was inaugurated by Roscellinus and renewed by Occam; they likewise form the beginning of modern scientific philosophy. As the preceding paragraphs show, the teachings of Descartes and Bacon greatly resemble each other in many respects, particularly in the matter of final causes. A no less noteworthy fact, one that may serve as an argument against the scepticism which bases itself solely on the constant disagreement among philosophers, is the harmony existing between Locke and Spinoza, that is to say, between empiricism and rationalism. Locke agrees with his contemporary at Amsterdam not only in his repudiation of species, but in his denial of the liberty of indifference, and in his view that ethics is as susceptible of demonstration as mathematics.

The name of the most illustrious scientist of the seventeenth century is connected with Locke’s empiricism supplemented by mathematical speculation. I mean ISAAC NEWTON (1642-1727), the founder of celestial mechanics, whose Mathematical Principles of Natural Philosophy is, next to the Celestial Revolutions of Copernicus, the grandest monument of modern science. His calculus of fluxions, which anticipated, or at least was discovered independently of, Leibniz’s integral and differential calculus, his analysis of light, and, above all, his theory of universal gravitation, according to which bodies are attracted to each other in direct proportion to their masses and in inverse ratio to the squares of their distances, have exercised an incalculable influence upon what he calls natural philosophy.

Locke’s philosophy, with its principles of observation and analysis, also formed the nucleus of a distinguished school of English moralists. We might mention the names of: Shaftesbury, Clarke, Hutcheson, Ferguson, Adam Smith, and many others. The freethinkers, who flourished in Great Britain and on the Continent at the end of this period, and the philosophers
proper whom we have still to consider, are likewise descendants of Locke. English philosophy is, to this day, almost as empirical and positivistic as in the times of Bacon and Locke. We may even claim, in general, that England, though rich in thinkers of the highest order, has never had but a single school of philosophy, or, rather, that it has never had any, for its philosophy is a perpetual protest against Scholasticism.

NOTES


2. 1617-1688. In his chief work, The True Intellectual System of the Universe (London, 1678), he combats the materialist conclusions of Thomas Hobbes with the system of Christianized Platonism, which also influenced men like Malebranche, Leibniz, Bonnet, and Herder. [See C. E. Lowrey, The Philosophy of Ralph Cudworth, New York, 1885.]

3. [Edited, collated, and annotated by A. C. Fraser, 2 vols., New York, 1894; J. E. Russel, The Philosophy of Locke in Extracts from the Essay, etc. (Series of Modern Philosophers), New York, 1891, - TR.]


5. Thus Leibniz speaks of unconscious perception, and Leibniz is right, notwithstanding the English philosopher's objections. His only mistake consists in his failure to recognize that the unconscious perceptions need some external solicitation in order to become conscious, which, however, his preconceptions will not allow him to assume.


7. Id., 15.

8. c. III., 3.


10. c. III., 23.

11. c. III., 9.


15. Id., 25.

16. B. II., chap. II., 2.

17. Id., chap. III., 1.

18. B. II., chap. VIII., 1 ff. Here we have the fundamental principle of criticism which, as we have seen, was advanced by Aristippus, Pyrrho, Ænesidemus, Hobbes, and Descartes. The eighth chapter of the second book of the Essay, of which the above is a summary, and especially § 7 of this chapter, is the classical expression of the philosophy to which Kant gives its real name.


21. B. II., chaps. IX., ff.

22. B. II., chaps. XII. ff.


24. Id., chap. XXI.

25. B. II., chap. XXI., 29.

27. B. III., chap. III., 11.
29. Id., chap. VI., 27.
30. Id., chap. VI., 38; chap. X., 20.
32. Id.
34. B. IV., chap. IV., 3.
35. B. IV., chap. XI., 7.
40. 1724-1816. [Institution of Moral Philosophy, London, 1769; tr into German by Garve, Leipsic, 1772. - TR.]


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