René Des Cartes, born 1596 at La Haye in Touraine, and educated by the Jesuits of La Flèche, spent the greater part of his life abroad. In Germany he fought as a lieutenant in the imperial army; in Holland he published *Philosophical Essays*, comprising the *Discours de la méthode* (1637), the *Meditationes de prima philosophia* (1641), the *Principia philosophiae* (1644). His admirer Queen Christina invited him to Sweden, where he died 1650, the same year in which his *Traité des passions de l’âme* appeared at Amsterdam. Besides the above, we must mention the following characteristic works: *Le monde ou traité de la lumière*, and the *Traité de l’homme ou de, la formation du fætus*, which were published after the death of the author.

In order to understand Descartes the philosopher, we must remember that he was an emulator of Gassendi, Galileo, Pascal, and Newton, the successor of Viète, and one of the founders of analytical geometry. Descartes was a mathematician above everything else; a geometrician with a taste for metaphysics rather than a philosopher with a leaning for geometry and algebra. Indeed, his philosophy simply aims to be a generalization of mathematics; it is his ambition to apply the geometric method to universal science, to make it the method of metaphysics. The *Discourse on Method* does not leave us in doubt on this point: “Above all,” he says, “I was delighted with the mathematics on account of the certainty and evidence of their demonstrations, but I had not as yet found out their true use, and although I supposed that they were of service only in the mechanic arts, I was surprised that upon foundations so solid and stable no loftier structure had been raised.” And again: “Those long chains of reasoning, quite simple and easy, which geometers are wont to employ in the accomplishment of their most difficult demonstrations, led me to think that everything which might fall under the cognizance of the human mind might be connected together in the same manner; and that, provided only one should take care not to receive anything as true which was not so, and if one were always careful to preserve the order necessary for deducing one truth from another, there would be none so remote at which he might not at last arrive, nor so concealed which he might not discover.”

These passages and many others make it quite plain that the Cartesian method consists in mathematical deduction generalized. How, then, did Descartes come to be called the inventor of inner observation or the psychological method? Descartes needed first principles from which to proceed in his deductions, and self-observation furnished him with such principles, from which he deduced all the rest *more geometrico*. Hence, those who regard Descartes as the author of the psychological method are right, in so far as observation is one of the phases and the preparatory stage, as it were, in the Cartesian method; but they err in so far as they regard it as more than an introduction, or kind of provisional scaffolding for deductive reasoning, which undoubtedly constitutes the soul of the *Cartesianism of Descartes*. Let us add that Descartes not only uses inner observation; he is a learned anatomist and physiologist (so far as that was possible in the seventeenth century), and as such appreciates the great value of experience. He loves to study *the great book of the world*: and for any one to oppose him to Bacon on this point is sheer ignorance. The most recent historians of Cartesianism justly insist that it is impossible to separate Descartes the philosopher from Descartes the scientist; and French positivism, too, is right in reckoning among its ancestors a man who tried to make philosophy
an exact science. Descartes’s failing, a failing which he shares with very many metaphysicians, and which is the result of his scholastic training, consists in his impatient desire to conclude and systematize; which hinders him from distinguishing sufficiently between the method of scientific investigation and the method of exposition.

The application of the geometrical method to metaphysics for the purpose of making it an exact science: that is the leading thought in Cartesianism. The geometer starts out from a small number of axioms and definitions, and, by means of deduction, reaches wonderful results. Descartes follows this method. He needs, first, axioms and definitions; the first part of our exposition will show us how inner observation, aided by reasoning, supplies them. From these definitions he then deduces a series of consequences, which will form the subject of the second part.

1. Observing that all he knows or thinks he knows he has received through the senses and from tradition, and that the senses often deceive us, Descartes resolves to doubt everything: to traditional science he opposes a radical doubt. But he does not doubt merely for the sake of doubting. His scepticism, though radical, is provisional, and has for its object the creation, of certain and self-acquired knowledge. He differs both from the philosophers of the Church and the sceptics properly so-called. The Schoolmen had said: Credo ut intelligam; he however says: Dubito ut intelligam. Pyrrho, Sextus, and Montaigne had doubted before him, but they did not succeed in mastering their doubts; they were tired of seeking for the truth, and so made doubt an end in itself, a definitive and hopeless system. For Descartes doubt is but a means which he hastens to abandon as soon as he has discovered a certain, primary truth. This, rather than his scepticism, the fact, namely, that he adds to his negation a positive and eminently fruitful principle, makes him the father of modern rationalistic philosophy.

What is this principle, and how does Descartes discover it? His very doubts reveal it to him. I doubt, says he: that is absolutely certain. Now, to doubt is to think. Hence it is certain that I think. To think is to exist. Hence it is certain that I exist. Cogito, ergo sum. Though Descartes derives the substance of his argument from St. Augustine, he formulates it differently; he presents it in such an attractive and precise form as to impress the mind and to gain its immediate approval. To the classical formula, cogito ergo sum, Cartesian philosophy owes a large share of its success. Descartes’s motto is not, however, an inference, and he does not wish us to regard it as such. As an inference it would be a petitio principii; for the conclusion is really identical with the major premise. It is a simple analytical judgment, a self-evident proposition.

Here then we have a certain basis, on which to construct a system of no less certainty than its fundamental principle; for it is evident that all the propositions following necessarily from an axiom must be as true as the axiom itself.

Thus far, then, I merely know that I exist. I cannot advance and extend the circle of my knowledge without exercising the greatest care; I must remember constantly that self-evidence, and that alone, is needed to make me certain of anything. It is evident that I think and that I exist, but it is not evident that the object of my thought exists outside of me, for the nature which deceives me by making me believe in the rising and the setting of the sun, may also delude me by making me assume the reality of sensible things. My ideas may be merely the product of my own imagination. Heat, cold, and even disease, may be hallucinations. We should have to abandon all attempts to prove the contrary, we should forever remain confined within the narrow circle of certitude described by the sum quia cogito, and doubt everything else, did we not find among our ideas one whose foreign origin is self-evident — the idea of God or of the infinite and perfect Being.

This idea cannot be the product of my thought, for my thought is finite, limited, and imperfect, and it is self-evident that a finite cause cannot produce an infinite effect. Shall we say that the idea of the infinite is purely negative? On the contrary, it is the most positive idea of all, the one which precedes all the others, and without which the idea of the finite would not be possible. Shall we raise the objection that the human ego, though actually imperfect, may be potentially infinite, because it strives for perfection, and can therefore produce the idea of God? But the idea of God is not the idea of a potentially perfect being, it is the idea of the actually-
infinite being. We do not attribute to God an acquired perfection. Our knowledge increases and grows more perfect little by little, perhaps indefinitely; but nothing can be added to God, the eternally-absolute and perfect being. Hence, if the idea of God cannot come from us, it must necessarily come from God, and God necessarily exists.

Moreover, the existence of God follows from the very idea of the perfect being, for existence is an essential element of perfection; without it, God would be the most imperfect of beings. This argument, advanced by St. Anselmus, apparently makes the existence of God depend on our idea of the perfect being. Such, however, is not Descartes’s meaning. We should not say, God exists because my mind conceives him; but, My reason conceives God, because God exists. The true foundation of our faith in God is not our own conception of him, - that would be a subjective and weak basis — but God himself, who reveals himself to us in the innate idea of infinity. The objection that the existence of a mountain or a valley, for example, does not follow from the intimate and necessary correlation existing between the idea of a mountain and the idea of a valley, is a sophism. From the fact that I cannot conceive a mountain without a valley, nor a valley without a mountain, it does not follow that a mountain or a valley exists, but that the two ideas are inseparable from each other. Similarly, from the fact that I cannot conceive God except as existent, it follows that the idea of God implies the existence of the perfect Being.

I know, then, (1) that I exist; and, (2) that God exists. The certainty of God’s existence is a matter of the greatest importance; on it depends all truth, all certitude, all positive knowledge. Without it I could not advance beyond the cogito, ergo sum; I should know myself and never know the not-me. It enables me to destroy the barrier erected by doubt between thought and external things. It teaches me (3) that the corporeal world exists. God, and God alone, vouchsafes the reality of my ideas; the idea of God, which he has implanted in me, is the perpetual refutation of scepticism. In short, as long as I leave out of account the idea of God, I may suppose that the sensible world is an illusion caused by some evil demon, or by the nature of my own mind. But the existence of God as the author of all things being proved, it becomes evident that my instinctive belief in the existence of the world is well founded; for I receive it from a perfect being, that is, from a being incapable of deceiving me. Henceforth, doubt is impossible, and whatever trace of scepticism I may have retained is superseded by an unshakable confidence in reason.

The three realities whose existence has been proved, God, the ego, and the corporeal world may be defined as follows: God is the infinite substance, on which everything depends and which itself depends on nothing; the soul is a substance that thinks; the body is an extended substance. By “substance” we can understand nothing else than a thing which so exists as to need nothing except itself in order to exist.

2. Observation and reasoning form the basis of the Cartesian system. A priori deduction completes the structure.

And here we find, at the very outset, a syllogism which contains the elements of the Spinozistic system. If substance is a thing which needs no other thing in order to exist, it follows that God alone is a substance in the real sense of the term. Now, by substance we can conceive nothing else than a thing which so exists as to need nothing except itself in order to exist. There may be some obscurity in the phrase: “to need nothing except itself,” for, strictly speaking, God alone is such a being, and no created thing can exist a single moment without being sustained and preserved by his power. Accordingly, the School is right in saying that the term “substance” does not apply to God and the creatures univocally. Hence, creatures are not substances in the proper sense. Some are substances as compared with others; they are not substances as compared with God, for they depend on him.

Descartes, therefore, understands by relative and finite substance a thing which needs nothing but God in order to exist; by mode, that which cannot exist or be conceived without something else which is its substance; by attribute, the essential quality of the substance, from which we cannot abstract without at the same time destroying the substance itself.

Minds and bodies are (relative) substances. Thought constitutes the attribute, i.e., the essence
of mind;\textsuperscript{11} extension, the attribute, i.e., the essence of body.

From the fact that extension constitutes the essence of body, it follows: (1) That there can be no extension in the universe without body, i.e., no empty space; nor bodies without extensions, i.e., atoms; (2) That the corporeal world is illimitable, since extension cannot be conceived as having limits (here Descartes contradicts Aristotle and agrees with Bruno); (3) That body has, strictly speaking, no center, that its form is naturally eccentric and its motion centrifugal; for the center is a mathematical point, and the mathematical point, inextendent.

The properties of extension are divisibility, figurability, and mobility. But divisibility is merely a movement of separation and of union. Hence, the properties of extension, and consequently of matter, consist in motion.

There is no other motion than motion in extension, local motion or change of place.

Furthermore, motion cannot originate in the bodies themselves: they cannot be said to move themselves, to set themselves in motion and to persist in it of themselves; for bodies are extended, extended only, even in their smallest parts, and absolutely devoid of the inner principle, the center of action and impulse which we call soul or ego. They are entirely passive; they do not move themselves at all, but are moved by external causes. They cannot even say that they are heavy, if we understand by weight a tendency of the body to fall towards the center of the earth, i.e., a kind of spontaneous activity in matter. The material world knows no other law than the law of necessity. The particles of matter, to which the Creator originally imparted rectilinear motion, are distributed in vortices (tourbillons), forming stars, then planets, which are extinguished stars, and finally other heavenly bodies. The science of the world is a problem of mechanics. The material world is a machine, an indefinite — not infinite —chain of movements, the origin of which is in God.\textsuperscript{14}

However, we must not mix theology with our interpretation of nature; and physics should entirely abandon the search for final causes, which has hitherto impeded the progress of this science.\textsuperscript{15}

Minds are diametrically opposed to bodies: i.e., they are essentially active and free; and just as there is nothing inextendent in body, mind contains nothing that is not thought, inextendent, and immaterial. Body is everything that mind is not; mind is the absolute negation of everything that body is. The two substances entirely exclude each other, they are entirely opposed to each other: body is absolutely soulless; the soul, absolutely immaterial (dualism of substances, dualistic spiritualism).\textsuperscript{16}

Like soul and body, the science of soul and the science of body have nothing in common. Physics should confine itself wholly to mechanical interpretation, while the soul should be explained only in terms of itself.

Although sensation seems to be an action of the body upon the soul, voluntary motion, an action of the soul upon the body, this is not actually the case; for there can be no reciprocal action between substances whose attributes exclude each other. Man is a composite being, a combination of soul and body. The soul derives its sensible ideas from its own nature on occasion of the corresponding excitations; the body, on the other hand, is an automaton, whose movements are occasioned by the volitions of the soul. The body and the soul lead separate lives; the body is subject to necessity, the soul endowed with free-will; being independent of the body, it survives its destruction. The two parts composing the human being are so exclusive as to make a real \textit{union between soul and body absolutely impossible}. “Those who never philosophize,” Descartes\textsuperscript{17} writes to Princess Elizabeth, “and employ their senses only, do not doubt that the soul moves the body, and that the body acts upon the soul. But they regard them both as one and the same thing, i.e., they conceive them to be united; for to \textit{conceive things as united is to conceive them as one and the same thing}.” And when she objects that the reciprocal action between soul and body is a self-evident fact, and that it is easier to attribute extension to the soul than to contradict this evidence, Descartes replies: “I pray your highness kindly to attribute matter and extension to the soul, or, in other words, to conceive it as united to the body; and after you have so conceived it and have tested the notion in your own case, it will not be difficult to see that the matter attributed to thought is not thought itself, and that the
extension of this matter is quite different from the extension of thought: the former is bound to a certain place from which it wholly excludes the extension of the body, which is not the case with the latter, and your highness will find no trouble in understanding the distinction between body and soul in spite of the fact that your highness has conceived them as united.”

The theory, however, does not hinder Descartes from speaking of the reciprocal action between soul and body, as though this action were real and direct. His anthropology, particularly as formulated in the Traité des passions,18 everywhere assumes what his metaphysics denies. In contradiction to the very explicit statements which have just been quoted, Descartes holds that the soul is united to all parts of the body; that it exercises its functions more especially in the pineal gland; that the soul and the body act upon each other through the medium of this gland and the animal spirits. However, he never goes so far as to identify the “two substances.”

The Traité de l’homme et de la formation du fœtus19 points out the distinction which he draws between them: the body walks, eats, and breathes; the soul enjoys, suffers, desires, hungers and thirsts, loves, hopes, fears; perceives the ideas of sound, light, smell, taste, and resistance; wakes, dreams, and faints. But all these phenomena are consequences — consequences and not effects — of movements caused in the pores of the brain, the seat of the soul, by the entrance and the exit of the animal spirits. Without the body, and particularly without the brain, all these phenomena, as well as the memory in which they are retained, would disappear, and nothing would be left to the soul except the conception of pure ideas of substance, thought, space, and infinity, - ideas which are wholly independent of sensation. Moreover, the ideas which need the cooperation of the senses, and consequently of the brain, are entirely different from the objects which we suppose them to represent. The idea is immaterial; the object, material; the idea is therefore the opposite of the object, even though it be its faithful image. Our ideas of material qualities no more resemble the objects than pain resembles the needle causing it,20 or the tickling resembles the feather which occasions it.

We see, the founder of French philosophy, though a rationalist and spiritualist in principle, really approximates empiricism and materialism. His animal-machine anticipates the Man a Machine of La Mettrie. Though dogmatic in his belief that extension is a reality, he is the precursor of Locke, Hume, and Kant, in that he makes a clear and absolute distinction between our ideas of material qualities and their external causes.

NOTES

2. Discours de la methode (Torrey’s translation), Part I., § 10.
3. Discours de la methode (Torrey’s translation), Part II., § 11.
5. *Discours de la methode*, IV. Cf. the second *Meditation*.
6. *Meditations*, III., V.
7. In reality, the ontological argument is no more of an inference than the *cogito, ergo sum*. It is an axiom, a truth which the soul perceives immediately and prior to all reflection.
8. *Meditation*, V., 8: “But after I have recognized the existence of a God, and because I have at the same time recognized the fact that all things depend upon him, and that he is no deceiver, and in consequence of that I have judged that all that I conceive clearly and distinctly cannot fail to be true . . . no opposing reason can be brought against me which should make me ever call it in question; and thus I have a true and certain knowledge of it. And this same knowledge extends also to all the other things which I recollect having formerly demonstrated, as the truths of geometry and others like them; for what is there which can be objected to oblige me to call them in question? Will it be that my nature is such that I am very liable to be mistaken? But I know already that I cannot deceive myself in judgments the reasons for which I clearly perceive. Will it be that I have formerly regarded many things as true and certain which afterwards I have discovered to be false? . . . Will it be that perhaps I am a sleep? . . . But even if I am a sleep, all that presents itself to my mind with evidence is absolutely true. And this I recognize very clearly that the certainty and the truth of all knowledge depend on the knowledge alone of the true God: so that before I knew him I could not perfectly know anything else. And now that I know him, I have the means of acquiring a perfect knowledge of an infinitude of things, not only of those which are in him, but also of those which belong to corporeal nature . . . .”
10. *Id.*, I., 51.
11. *Id*.
13. *Id.*, I., 9: By the word *thought* I understand everything that so takes place in us that we of ourselves immediately perceive it; hence, not only to understand, to will, to imagine, but even to feel, are the same as to think.
14. *Principles*, II., III.
15. *Id.*, I., 28.
16. *Meditation*, VI. Here we notice a striking difference between Descartes and Leibniz, between dualistic spiritualism and concrete spiritualism. Descartes goes so far as to deny *force* (*tendance*) to body; while Leibniz attributes to it (i.e., to the monads constituting it) not only *force*, but also *perception*: it contains the idea which it desires to realize, without, however, being conscious of it. The characteristic trait of mind as compared with body is not *perception* but *apperception*, not the tendency itself, but the consciousness of the goal aimed at.
18. Amsterdam, 1650.