

depends upon a winnowing of the infinite deductive possibilities by the empirical fan of the actual. The method offers too much, and as the *sole instrument of discovery* must be pronounced, even by its creator, a failure.

VI

THE ECLIPSE OF THE METHOD

§ 1

WE have reached a crux in our inquiry and may therefore review its argument.

In order to master nature, Descartes tells us, we must (i) know it; but if our knowledge is to be real it must be (ii) systematic, not casual, that is to say, it must be philosophical or derived from first principles. The first principles are (iii) conceived, on the mathematical model, as a few primary self-guaranteed truths from which demonstration proceeds unilaterally and irreversibly. But (iv) in their application we fall foul of the essential difference between the actualities of 'physics' and the possibilities of mathematics. (v) The method, therefore, while adequate to the discovery of general propositions regarding the structure of nature as a whole, is powerless when it comes to the investigation of particular natural things. Since, however, the aim of science is the dealing with particular natural things

we are driven (vi) to experiment in order to make our 'knowledge' actual.

That this in fact is Descartes' final conclusion we have seen from a comparison between the sixth chapter of the *Discourse* and the explicit retrospect on his life's work given by him in the *Author's Letter*. But there remains to consider one important further point. The peculiar character of the method lies, as we saw, in the conception that the movement from the principles is inevitably and solely unilateral. We march out from the known into the unknown and the certitude of our path is guaranteed from behind. This fundamental conception of a self-guaranteed first principle from which all knowledge can be derived is the distinctive mark of the mathematical tradition in philosophy since the time of Plato, and it is a sign of Pascal's sureness of grasp that he fastened on it in order to demonstrate the inadequacy of the Cartesian ideal.¹ But we may well ask: was Descartes himself always faithful to this view? Did he ever come to recognize, however obscurely, that the method was not theoretically true, in the same way as he came to recognize that it was not practically useful?

It has been pointed out² that this is what actually happens when Descartes comes to discuss metaphysics, but the same would seem to be true in his

¹ See below, p. 132 f.

² R. G. Collingwood, *Philosophical Method* (Oxford: Clarendon Press, 1933), pp. 155-8.

physical inquiries as well. On the one hand we have the passages already referred to,¹ passages for which the *Regulae* provides the background and to which the classic formula of the *Author's Letter* is only commentary. This is what may be called the 'official' Cartesian view. Yet on the other hand the very 'advertissement' to the Table of Contents of the *Essays* warns the reader that 'l'explication des questions qui y sont marquées depend quasi tousiours si expressement de ce qui les precede, & souuent aussi de ce qui les suit, qu'on ne la sçauroit entendre parfaitement si on ne list avec attention tout le livre'.² Nor is the phrase isolated. It would seem to represent a point of view which was present continually to Descartes throughout the years when he was actually working out his discoveries. His theorems 'dependent les vnes des autres' in such a way that 'c'est assez de sçauoir qu'il y en ait vne qui soit fausse, pour connoistre que toutes les raisons dont ie me seruois n'ont point de force' (April 1634, i. 285). That this does not refer to a unilateral dependence is clear from his remarks on the *Essays* (October 1637, i. 455): '. . . les commencemens (au moins ceux de la Dioptrique & des Meteores) ne peuuent estre bien persuadez que *par la connoissance*

¹ Above, p. 71.

² vi. 486. One's general faith in the 'order' given by Descartes in his inquiries is already shaken by his recommendation to a friend (*Corresp.* i. 457, l. 21 f.) to pass from Book 1 of the *Geometry* straight to Book 3; but the *Geometry* is surrounded by intentional mystification (above, p. 21).

de toutes les choses qui suivent apres; & que ces choses qui suivent, ne peuvent estre bien entenduës, si on ne se souvient de toutes celles qui les precedent.

We have here the doctrine not of 'Linear Inference' (above, p. 71) but, in the sense of the title of Bosanquet's book, 'Implication': and the impression is confirmed elsewhere: 'toutes mes opinions sont si iointes ensemble, et dependent si fort les vnes des autres, qu'on ne s'en sçauroit approprier aucune sans les sçauoir toutes' (i. 562); 'la liaison de mes pensées est telle, que i'ose esperer qu'on trouuera mes principes aussi bien prouuez par les consequences que i'en tire, lors qu'on les aura assez remarquées pour se les rendre familiares & les considerer toutes ensemble, que l'emprunt que la Lune fait de sa lumiere est prouué par ses croissances & décroissances' (i. 564).

When a similar passage in the *Discourse* (vi. 76, l. 12 f.) was objected to by Morin, Descartes (iii. 197, ll. 25 ff.) countered by insisting on a distinction between 'prouver' and 'expliquer'; and it is of course true that any basing of physics on metaphysics must show the workings of the metaphysics in the physics, must trace out, that is to say, the manifestations of the metaphysical principles in the actualities of the world we know. But in the passages quoted Descartes is saying something else. He is declaring his thoughts to be *interdependent*, 'principles' resting on 'consequences' as much as 'consequences' on 'principles', and the principles themselves have to be considered 'all together', not, as

one would expect from his other pronouncements, one after the other in a deductive series. The process is thus not unilateral but global, not a 'chain' prolonged by a succession of links but a 'circle' which starts and ends only with its whole self.

Different views may be held as to which is the true conception of the nature of reasoning, but there is no doubt which conception was held 'officially' by Descartes. And yet the rival conception could not be suppressed entirely, and we see it constantly emerging by oversight. Descartes' unilinear deduction is in fact, as it was fated to become, not a method of discovery but an order of exposition.

§ 2

This consequence is bound up with what may be called the paradox of the *Discourse*. The volume published by Descartes in 1637 contained both *Discourse* and *Essays*, and for Descartes it was the *Essays* which formed the principal contents of the volume, the *Discourse* being merely a preface. The *Essays* are for Descartes the type of scientific work; they are contributions to knowledge made by method. They are illustrations of the fertility of the method, concrete examples of its application. Or at least so Descartes would have us believe. The possibilities of the method are illimitable; by its help there is 'nothing so remote that we cannot reach it or so obscure that we cannot reveal it'. But the firstfruits are those he himself gives in the *Essays*, and the

Discourse, the method, is only as it were the seed. It is legitimate to ask, therefore, how far the fruit was in fact the product of the seed—how far, that is, the *Essays* were in fact ‘essays *in*’ the method.

It is of little account here to go into the list of the anticipations of Descartes’ doctrines by others enumerated somewhat maliciously by Leibniz.¹ The main question remains unaffected. Even if his discoveries were discovered by others before him, his own claim that his discovery of them was due to the use of the new method might be maintained and established. Can the connexion between the *Essays* and the *Discourse* be justified? In other words, is the method really a logic of discovery in the sciences?

The answer to this question is, as we have seen, in the negative. The method is fruitful in mathematics because it *is* mathematics; but outside the sphere of mathematics, even in Descartes, it has little heuristic value. It is no accident that in the history of science Descartes is remembered only as a mathematician, or that the only work of his own which continues the *Regulae* is the *Geometry*.² So far as concerns the two arts of medicine and mechanics (celestial or otherwise), in which he saw the greatest need and use for his method, no real discovery of

¹ I know this passage only from Hallam (*Literature of Europe*, 1839, iii. 267–8, note) who himself quotes from Brucker, but there are many others of similar general import (e.g. Erdmann, pp. 120–1). See, too, Baillet, ii. 532 ff.

² Sirven, *Années d’Apprentissage de Descartes* (Albi, 1928), p. 419 f.; and cf. below, p. 111.

any kind stands to his credit. He is noteworthy as a psychologist, but even he did not offer his treatise on the *Passions* as an 'essay' in the method.

Thus the *Discourse*, by Descartes' own standards, would stand condemned if brought before the bar of its own history. Judged by the only criterion its own author would have recognized, its fate would have been melancholy. It would have stood as a literary, not a scientific, achievement ('history', as he would have said, not 'science'),¹ a record of a mind which strove for much but effected nothing in the only sphere that matters, the sphere of *discovery*. With the collapse of the physics, the preface to the method which revealed the physics would have been remembered only because its last obsequies had been carried out by Voltaire.

Yet it was with the high serenity of the *Discourse* as with the prophetic frenzy of the *Novum Organum*: it survived through its own inherent distinction. Composed as an introduction to the *Essays* and offered as a logic ancillary to scientific discovery, it was its good (not its bad) fortune that the discoveries it announced were either not discoveries at all or found to be untrue. The break-down of the physics proved the opportunity for the isolation of the logic and its treatment as an independent entity. The *failure* of Cartesianism lay in its *connecting the Discourse* with the *Essays*, the linking of the method

¹ *Reg.* 3 (x. 367, ll. 22-3), and, more fully, letter to Van Hoghelande (1640), *Œuvres, Supplément*, p. 2.

with its practical application in the field of discovery. The history of its *triumph* is the history of their *dissociation*. It is this dissociation which I propose to follow out in this, and the following, chapter.

§ 3

A half-century after Descartes had composed his 'Romance of Nature'¹ the happy idea occurred to an anonymous author to compose a romance about Descartes. The book was well received. Published in 1689, it was soon translated into English² and Italian, and there was some talk in Holland, it appears (although the author is unaware whether the project was carried out), of its being turned into Latin. More than this. When Baillet came to write his great *Life of Descartes*, he felt constrained³ to compliment the anonymous author on his work, and indeed implied, with oblique reference to preceding 'Lives', that the romance contained much authentic historical information. Since the book contains, in fact, few points about the life of Descartes which are not derived from Descartes' own published letters, it would seem that Baillet's compliments were meant to propitiate the Church rather

¹ Above, p. 32.

² In which language it reached a second edition (1694), thus fulfilling in some measure the translator's wish that this work 'wherein Philosophy is divested of the Stiffness and Moroseness of the Schools' might popularize philosophy in England, 'even among women as is the case in France' (above, p. 1).

³ Preface, p. xviii.

than the Muse of history. But be that as it may with regard to the facts of Descartes' life, there is no doubt that the book enables us to recapture something which to us is of even greater importance, and that is the state of opinion on Descartes' work which was prevalent in orthodox circles towards the close of the century in which Descartes lived. It may be added that a second edition of the book, enriched by an additional fifth part, appeared at Paris in 1702, this time bearing the name of the author (who had produced in the meanwhile a reply to the *Provincial Letters* of Pascal, also anonymous¹): Father G. Daniel of the Company of Jesus.

The plot of the story is simple enough. We are told that Descartes, like Socrates and Archimedes before him, was given to 'ecstasies', and that one day, when an admirer paid him a visit at Egmond in the 'hypocauste' he had built for himself after the pattern of the one in which he had begun his philosophizing in Germany, he was found lying on the table in the attitude of a man taking snuff, with a snuff-box in his left hand. The friend stood watching him for half an hour, and was then surprised to see a bottle lift itself from the shelf, and, having uncorked itself, hold itself for some time at Descartes' nose. Shortly afterwards Descartes awoke, and striking his hand on the table cried, 'I've got it, I've got

¹ *Réponse aux Lettres provinciales de L. de Montalte, ou Entretiens de Cleandre et d'Eudoxe*, Amsterdam, 1696.

it!¹ It appears that with the help of the mysterious snuff Descartes had succeeded in freeing his soul from his body, and that the bottle contained a restorative which helped the soul to return to its seat in the pineal gland (pp. 29-32). The infinite possibilities opened up by the new discovery were speedily appreciated by the philosopher, and he made a practice of taking leave of absence of his body as often as might be. But he was imprudent enough to embark on one of these adventures when under medical care in Sweden. The doctor called on him unexpectedly at night, thought he was suffering from a sudden seizure, applied violent remedies, and thus so disturbed the machine of the body as to render it incapable of receiving back its soul. When Descartes returned from his nocturnal expedition he found himself, as it were, 'locked out' (pp. 35-8).

Luckily he had one friend to whom he had communicated the secret, the disciple who had visited him at Egmond, and he went to this friend's house at Paris and made him his intermediary between the world of spirits and this world. It seems that, far from finding the accident inconvenient, Descartes rejoiced at the opportunity of getting peace at last, and he proposed to spend his time in carrying out, in the light of his principles, the greatest experiment of all, that of the creation of a world (p. 48). His

¹ Pp. 19-21 (all references are to the second French edition of 1702).

friend was to visit him every now and then to see how the project was getting on, and as the time for the next visit, and indeed for the actual experiment, was near, he proposed that Father Daniel should accompany him. The third member of the expedition was to be, by the way, none other than Father Mersenne. Father Daniel, with the fate of Descartes before him, was nervous about taking premature leave of his body, but when the precaution was taken of leaving another disembodied spirit in charge of his body during his absence, he declared himself satisfied, and off they went all three (p. 63 f.).

The details of their adventures (their interviews with the Greek philosophers [pp. 98 ff.]; the drawing up of a treaty of peace with Aristotle through the commandant of his territory, Voetius [pp. 193 ff.]; the meeting with a Chinese mandarin who expressed his dissatisfaction with Descartes' proofs of the existence of God [pp. 225 ff.]) are not only amusing: they are built on a shrewd comprehension of the strength and weakness both of Descartes himself and of Cartesianism. The most striking single episode, and it is an extraordinary one indeed, is the account of Father Daniel's own conversion. He found himself suddenly, although an anti-Cartesian, strangely responsive to Descartes' philosophy, and indeed saw Descartes' world grow before his eyes as the magician set to work. But it appears that he did not really see it after all, except with the eye of faith, and that the illusion had been arranged by Descartes' friend,

who had instructed the spirit left in attendance on Father Daniel's body to manipulate his brain in such a way that the course of the 'animal spirits' should be changed from the Aristotelian to the Cartesian! (Pp. 287, 291, 428.)

§ 4

Descartes' disciples, according to Father Daniel, were wont to claim that they were philosophers, not theologians, and that the mysteries they undertook to explain were those of nature, not those of religion (p. 40). Broadly speaking it may be said that this is the interest of the whole book. It is an inquiry into physics, not metaphysics, and the metaphysical principles examined are as a rule those immediately connected with Cartesian physics. In this way what we have seen to be the real emphasis of Descartes' thought receives recognition. At the very outset, for example, we hear of Descartes' 'intuitive' knowledge; but this 'intuition' is not, as might have been expected, of his own soul, but of the details of the physical world (pp. 33-4). When Descartes first appeared in the world of spirits he tried to engage them in conversation; but the conversation is not about what we should call metaphysics but 'the principles of bodies and the causes of divers phenomena' (p. 44), topics which, as the author remarks rightly (p. 45), form the subject of most of Descartes' books. In the same way the 'new philosophers' are identical with those who

'have tried to improve physical theory' (p. 257), while the 'famous axioms which are the foundations of his physics' are the 'doctrine of God as creator' which leads to Descartes' theory of motion (p. 91). Similarly, when the Aristotelian put before Descartes his 'difficulties on various points' of his 'philosophy', the 'principal ones touch the general construction of' Descartes' 'world' (p. 347). In brief, for Father Daniel philosophy means physics, and metaphysical considerations are indissolubly bound up with the physical explanation of the natural world.

One may remark that within the phenomena of the natural world, as might have been expected in a book which comes out of the Aristotelian tradition, is included psychology, and Descartes' treatise on the *Passions of the Soul* is considered as much a part of his physics as the *Dioptric* or the *Meteors*. This treatise, indeed, would seem to be the only part of Descartes' 'physics' which continued to command universal respect. On the other hand, nothing seems to have shocked the thought of the age so much as Descartes' doctrine of the souls of animals. It is the second point of dispute advanced by the Aristotelians (p. 200), and Father Daniel devotes a large portion of his additional Part 5 to an examination of it. He treats it, indeed, as a central point of the whole doctrine (pp. 429-30), and notes maltreatment of animals as the first practical consequence of his own 'conversion' to Cartesian principles (p. 344). The 'plot' of the whole work is of course only

possible if we accept Descartes' theory of the human body as an automaton, and one of the most interesting parts of the book is the exposition of this theory given by Mersenne and Descartes' friend when they are trying to persuade Father Daniel to attempt dissociation (pp. 68 ff.). But the very 'word machine' in this connexion was 'revolting' (p. 432), and the Aristotelians saw rightly that here was the crux of the world-problem as raised by Descartes: either universal mechanism or not (p. 435). It may be added that the question of the souls of animals takes precedence in the Aristotelian's attack over that of the better-known problem of the soul of man. If there is a universal mechanism, one cannot stop at the souls of animals; one must include the souls of men as well (p. 474). Mechanism, in fact, embraces and accounts for even the phenomena of speech, and thought becomes identical, as it has been made to do in more recent times, with a tickling of the larynx.¹

As Father Daniel rejects the Cartesian theory of the souls of animals and its consequent universal mechanism, so he rejects what he considers to be the central Cartesian doctrine in physics, that of the theory of vortices. Against this he has a definite series of arguments culminating in what he considers to be the final one adduced in Part 5 (p. 532 f.). To post-Newtonian readers the detail is unimportant. It is sufficient to observe that, apart altogether

¹ Pp. 70, 435. For Descartes' own doctrine see *Passions*, i. 50.

from the work of Newton, the whole structure of Cartesian physics was open to attack on all sides and had ceased to have much meaning, and that within fifty years of its appearance.

§ 5

Father Daniel's book concludes (p. 522 f.) with certain reflections on the comparative value of Descartes' philosophical work. The metaphysics, we are told, comprised chiefly in the *Meditations*, is far from being, as is generally thought, a masterpiece. It is, on the contrary, the most mischievous and useless of all Descartes' works. Its starting-point, the advice to rid oneself of prejudice before setting out on the search for truth, is salutary enough, but Descartes turns it into a dangerous exercise in scepticism leading to the logical circle whereby the existence of God both guaranteed and was guaranteed by the truth of our clear and distinct ideas. Indeed, the whole of Descartes' doctrine of God is unsound. His making the truths of mathematics depend on God is paradoxical; the demonstrations he offers of the existence of God are paralogisms, and his explanation of the mystery of the Eucharist is either meaningless or blasphemous. It follows that in all this metaphysics 'there is much to blame and nothing or hardly anything to learn' (p. 525).

So far as ethics is concerned the author approves of the moral rules of the *Discourse*, particularly the warning to abstain from meddling with the truths

of religion, though he complains that on this point the Cartesians have not been faithful to the teaching of the master (p. 526). In physics he finds the best of all Descartes' works the treatise on the *Passions of the Soul* (p. 528). He esteems many passages in the *Meteors* and the *Letters*. The *Principles* and the *Monde* are ruined by certain special theories, above all by the theory of vortices (pp. 529-31). The last and most sore point is Descartes' theory of the souls of animals, and on this he agrees with all that has been said earlier by the Aristotelians (p. 531).

It is this 'order of merit' of Descartes' writings which claims our attention. A theologian might well have been expected to dismiss Descartes' theology, but the dismissal of the physics, and that on physical grounds, is remarkable. And no less interesting is the stress on the psychology. The Cartesian revolution is accomplishing itself in its very critics. In the *Voyage du Monde* we see the same crucial turning of the attention from the outer world to the inner which, the significant mark historically of the whole Cartesian outlook, was to come to full expression in Locke and Kant.

§ 6

If one thinks of the high claim of the *Discourse* and *Essays*, Father Daniel's *compte-rendu* would appear devastating. At first sight there is nothing left in Descartes at all. The physics is broken down; the metaphysics condemned out of hand; the charac-

teristic parts of the psychology rejected with emphasis. The 'science' of the *Essays*, that is to say, the actual contribution made by Descartes to the interpretation of nature, might just as well not have been in existence. Yet, for all this, something *is* left, and that is the *Discourse*, the method itself, and an illuminating passage, following immediately on that quoted earlier,¹ puts it as clearly as any modern could:

'All Such as have a sound and unprejudic'd Notion of things, though they stand diameter to your Opinions, do you Justice and give you an *Encomium* that seems none of the least; which is, that they acknowledge you have open'd the Eyes of the Philosophers of our Times to the discovery of the Rises of their Method in *Philosophy*, by that just and reasonable Reproach of the little Concern they had, for the most part, to dive to the Bottom of the Things they treat of, whether in *Metaphysicks* or in *Physicks*, and the little application they bring with them, both in framing to themselves and giving their Disciples clear and distinct ideas of the Things disputed of; the abuse that was made of the subtilty of their Mind, perverted only to the multiplying Wranglings and trifling Disputes, to the inventing of new Equivocal Terms, to the confounding rather than enlightning certain abstracted Questions, prudently enough introduc'd the Schools, by Exercise and on Occasion of Dispute and Emulation, to the Minds of Youth . . . the little Observation made upon *Experience*, that is the Mother of Philosophy: the implicit Dependence they had on one another, often superficially considered and ill understood. . . .'

¹ Above, p. 2 f.

Descartes had taught them, however, that their task was not *embrouiller* but *débrouiller*, to disentangle problems, not to tangle them up, and, so the passage continues, the change of attitude due to Descartes' influence had even penetrated the seats of learning. The best teachers were now beginning to treat all problems, both plain and complex, 'with more Solidity and Method, with more Justice and Exactness, persuaded that those Questions thus handl'd have a greater power than is imagin'd to form a Juvenile Mind, if it is capable of it, to render it Correct and Just. . . .' As if to emphasize the general educational value of the Cartesian method, the *raisonnement* in which its virtues are to be shown is not only that of an ordinary 'discourse', or of the 'Examination of a Mathematical Demonstration', or of the 'Discussion of a Physical Experiment', but 'peut-être même d'une affaire & d'un interest politique'—'perhaps a Political Interest or Concern'.¹

Cartesianism has thus become a general method of approach to all problems, not a specific system of physics or metaphysics, and it is this general method which is of value, the ideal of order and precision, not the particular historical results which that ideal offered (or was supposed to offer) Descartes himself in his delving into the facts of nature. And similar testimony is given by the great physicist Christiaan Huyghens, son of Descartes' personal friend the

¹ *Voyage du Monde*, pp. 258–60 (condensed); pp. 179 ff. in the English version.

diplomatist Constantijn, in some notes to Baillet's *Life of Descartes*¹ which belong approximately to the same period as the *Voyage du Monde*. He writes that when he first read Descartes' *Principles*, at about the age of fifteen or sixteen, he was enthusiastic about it, but that now (*à l'heure qu'il est*, i.e. some time between 1691, the year of publication of Baillet's *Life*, and 1695, the year of Huyghens's own death), he can find almost nothing to approve in it as true, whether in the physics, the metaphysics, or the meteors.

'What pleased most at first when this philosophy appeared originally was this: what Descartes wrote could be understood, whereas other philosophers only gave us meaningless words like "qualities", "substantial forms", and "intentional species". . . . But what recommended his philosophy above all was the fact that he did not confine himself to expressing disgust at the ancient philosophy, but that he ventured to offer in its place causes which one could understand for all that exists in nature. . . .'

The actual 'causes' offered by Descartes Huyghens learnt afterwards to reject, but the demand that they should be 'understood' remained. Thus, again, Descartes is praised not for his 'discoveries' in physics but for the ideal of clarity with which he dispelled the mists of medievalism. As Huyghens remarks, somewhat too tartly (p. 161): 'cela auroit esté autrement, s'il eust pu expliquer clairement la

¹ Published in Cousin, *Fragments philosophiques* (ed. 3, Paris, 1838), vol. ii, pp. 155-62.

vérité de ses dogmes; et il l'auroit pu, si la vérité s'y fust rencontrée'.

§ 7

One of the most famous Cartesian critics at the end of the seventeenth century is Bishop Huet, author of a *Censura Philosophiae Cartesianae*, published in 1689, and the *Nouveaux Mémoires pour servir à l'Histoire du Cartésianisme*, of 1711. The second work may be dismissed summarily. It is a slight and pale reflection of Daniel's satire. It tells us that Descartes is alive still in Lapland, his death and burial at Stockholm over half a century earlier having been a comedy played at his instigation in order to enable him to escape from the court of Queen Christine. Now, having left 'the study of Geometry and other sciences in order to apply himself uniquely to physics, medicine, chemistry, the Cabbala and other secret sciences' (p. 32), and being assured, as a good Rosicrucian, of 'at least five hundred years of life' (p. 33), he proposes to devote his energy to the propagation of his own 'sect' and the confusion of the Aristotelians (p. 35). Unfortunately we are told nothing whatsoever of his ideas or plans and we are therefore unable to judge whether they would be likely to be of any interest or significance.

The *Censure* is a work of more weight and attained many editions (I have used the fourth, that of 1694), although Arnauld is reported to have said of it that the only good thing in it was its Latin. It comprises

a detailed examination of Descartes' philosophical system in seven chapters headed by a general preface and concluded by a summary evaluation of the whole. The order of the examination follows specifically Descartes' own, that is, it begins with the metaphysical presuppositions. The first chapter deals with the methodic doubt and the *cogito*, the second with the criterion of truth, the third with the human mind, the fourth with the existence of God, and the fifth, sixth, and seventh with problems of physics and cosmology. The last chapter sums up the good and bad points both in Descartes himself and in Cartesianism.

The summing up takes the form of an explicit 'order of merit' of Descartes' writings (pp. 229-30). First comes the *Geometry*, then the *Dioptric*, close to them is the treatise on the *Passions* 'which is nothing other than a distinct and mechanical exposition of the internal motions of the body'. Then comes the *Principles*, 'partly mathematical, partly physical, and partly metaphysical'. The *Meteors* is 'acute but insufficiently based on experiment'. As for the *Discourse on Method* 'there is nothing much to blame in it and nothing much to admire'. Last of all comes the *Meditations*, mere 'metaphysical commentaries'.

The order is clearly logical and depends on a fundamental point made just before (p. 229). Descartes' genius was for and in mathematics. He is strongest, therefore, in matters which are near mathematics, weakest in those which are far from it; or,

as he puts it (p. 230), using the well-known Cartesian distinction, his strength is in matters which can be conceived by the 'imagination', his weakness in matters dependent on the 'judgement'. *Mathematica tractat felicius, in iisque plane regnat: verum illa cum adhiberet ad Philosophiam, uti Philosophiae pars re ipsa sunt, non Philosophico, uti decuit, more explicavit; sed Philosophiam contra more Mathematico; omniaque propemodum revocavit ad Geometricas leges & Mechanicas* (p. 229).

The criticism is clear: Descartes' genius was for mathematics, but it is a fundamental error to treat all questions mathematically. The Cartesian, he says earlier,¹ is naturally a student of 'physical rather than of moral philosophy'; but even assuming the validity of Descartes' principles in physics (and Huet holds them in question), they are not applicable to other fields. Descartes himself noted² that there are very few people who show an equal propensity both for mathematics and for metaphysics. Huet (and many after him) would have retorted that herein is no matter for surprise, since they are different both in their matter and their method, and that it was Descartes' mistake to have confounded them.

Yet, for all this, Huet, like Father Daniel, gives full weight to Descartes' good points, and those good points are precisely those enumerated by both Daniel and Huyghens and with which we are already familiar: the clearing away of ancient error and the

¹ Antecessio iii b.

² *Principles*, Dedicatory Letter to Elizabeth.

substituting of a few clear and simple principles on which to build a more compact and closely knit system. Huet sings Descartes' praises in these terms more than once,¹ and sees in them the real and characteristic advance made by Descartes on his scholastic predecessors. We have thus again the same condemnation of Descartes' results with the same commendation of his general method.

§ 8

Huet closes his book (p. 263) with a *laus Aristotelis*, and an interesting volume might be made on the attempts to reinstate the scholastic Aristotle.² The *Recueil de quelques Pièces curieuses concernant la Philosophie de Monsieur Descartes* (Amsterdam, 1684), for example, opens with the 'concordat' of 1678 between the Fathers of the Oratory and the Jesuits in which the former agreed to give up the philosophy of Descartes, and in the course of some elucidations given later to a treatise by a Jesuit Father de Valois ('Louïs de la Ville') a list is given (pp. 81 ff.) of the six primary errors of Cartesianism, to wit: the denial of the vacuum, the doctrine of animal automatism, the ontological proof of the existence of God, and the tendencies to occasionalism, voluntarism, and (in our sense) idealism. But the world was not going

¹ e.g. pp. 206, 228.

² Cf. Gilson, *Rôle de la Pensée Médiévale* (1930), Appendices, cap. 5.

to return to Aristotle, just as it was not going to follow directly on the path traced by Descartes. The summary of Locke's *Essay* appeared in the *Bibliothèque Universelle* of 1688 (the *Essay* itself was published two years later, 1690), and another 'revolution' was begun in modern thought.

VII

THE SURVIVAL OF THE METHOD

§ 1

THE later vicissitudes of the Cartesian philosophy as a whole are displayed most strikingly in Locke. Its fundamental metaphysical position, the distinction of matter from mind, was offered by Descartes explicitly as the basis of his mathematico-physical theory of the equation of matter with extension. The whole of this is rejected by Locke, physics and metaphysics alike, and with it Descartes' well-known attempt in the ontological argument to draw the fullest consequence from the autonomy of mind. In the same way we have Locke's reiterated criticism of the very possibility of a demonstrative science of nature, a criticism which puts asunder the mathematics and physics joined so decisively by Descartes.

And yet Locke is a Cartesian. One has only to glance at the kernel of his philosophy, the doctrine of knowledge in Book IV of the *Essay on Human*