VII.—NEW BOOKS.

Aristotelian Society, Supplementary Volume II.: Problems of Science and Philosophy. Papers read at the Joint Session of the Aristotelian Society, the British Psychological Society, and the Mind Association, 11th-14th July, 1919. Williams & Norgate. Pp. 220.

THE Aristotelian Society has adopted the excellent plan of collecting the papers read at certain of its symposia and publishing them in supplementary volumes. This is the second; the first being entitled *Life and Finite Individuality*. The present volume consists of four parts: a long paper by Mr. Russell on *What Propositions are and how they mean*; a symposium on *Time, Space, and Material*, by Profs. Whitehead, Nicholson, and Wildon Carr, Dr. Head, Mrs. Stephen, and Sir O. Lodge; a discussion of the question: *Can Individual Minds be included in the Mind of God?* by the Dean of Carlisle, the Bishop of Down, Prof. Muirhead, and Dr. Schiller; and another on the question: *Is there 'Knowledge by Acquaintance'?* by Prof. Dawes Hicks, Drs. Moore and Edgell, and the present reviewer. The whole constitutes a very interesting contribution to current philosophical controversies. I propose to deal with the three symposia as briefly as possible, and then to give a short account of Mr. Russell's paper, which, whatever may be thought of its other merits, is certainly the most startling in the collection.

Perhaps the most noteworthy feature of the symposium on *Space, Time, and Material* is the singular irrelevance of some of the contributions. Dr. Head gives a most interesting paper summing up the results of his physiological work on cutaneous sensations. Like all first hand accounts of his own researches by a great experimentalist it makes fascinating reading; but I cannot see that it has much bearing on the question under discussion. Sir Oliver Lodge's paper contains nothing that calls for comment, and throws no fresh light on the subject. Prof. Whitehead's paper is a sketch of the ideas which he has since developed in much greater detail and published in his *Principles of Natural Knowledge*. A good deal that is obscure in the symposium becomes clear when read in the context of the book. This contribution is of course the *chef d'œuvre* of this discussion. In Prof. Nicholson too we have a symposiast with a first-hand knowledge and a complete mathematical grip of the ideas and results of modern physics. The result is an excellent paper, in so far as it tells us about the quantum theory, points out the important distinction between the microscopic and the macroscopic, and raises the question whether the concepts that are fundamental in the one region will be so in the other. But, just as Dr. Head's paper is interesting physiology with little bearing on philosophical questions, so Prof. Nicholson's paper is interesting physics leading to no very definite formulation of the question and still less to any definite answer. Mrs. Stephen's contribution is, as usual, Bergson done much better than Bergson could do it himself. She does not indeed, to my mind, succeed in making the French philosopher intelligible, but her attempts are always amazingly clever and remind the present writer of Dr. McTaggart's relation to Hegel, about which one feels that the

disciple is so much better than the master that it is a pity that he keeps up the form of being a disciple. I understand her view to be that science is necessarily stated in the form of words and in terms of universals; that universals are not really exemplified by nature; and that they are definite, distinct, and related,—in a word, 'logical,' or as Bergson, for reasons best known to himself, would say 'spatial'—whilst nature has none of these attributes. No reason whatever is produced for the negative part of this view. The question then arises: How do scientific concepts come to serve us so well in our practical dealings with nature? The answer is as follows: In every phenomenon we can distinguish two aspects, each by itself a fiction, both present in various degrees in different phenomena. One is the factor of mere sensation, the other the meaning which is always conveyed by a sensation. The former can recur, the latter is never exactly the same twice over. The former factor corresponds to material and can be treated by science, the latter cannot be so treated. In proportion as the former predominates in any region of phenomena, science can successfully deal with that region. The second factor is due to memory and is characteristic of mind. The theory appears to me to express certain truths but to express them in a thoroughly confusing way. It is of course true that precisely similar stimuli when repeated produce somewhat different total states of mind. But (*a*) the stimuli are not themselves 'bare sensations'; they are not sensations at all; and, because it is a fiction to talk of the repetition of exactly similar sensations, it does not follow that there is any fiction in the supposed repetition of exactly similar stimuli. Again (*b*) because the total state of mind is different on each repetition of the stimulus it does not follow that the sensations are not exactly alike, in the sense that they are awarenesses of precisely similar sense-data. Sometimes the sense-data themselves *are* modified qualitatively, *e.g.*, in so-called 'complication'. But there is no logical necessity why they should *always* be modified in their sensible qualities merely because they have acquired new meanings; and, in the numerous cases where no such modification can be detected on careful inspection, it seems wholly otiose to suppose that it is really present. The other truth is the following. Colours and sounds may be quite uniform, yet science ascribes them to vibrations of varying frequency. Obviously it takes a number of vibrations in a finite time to give a characteristic frequency. Thus a seen uniform colour corresponds to the repetition of a large number of similar stimuli none of which separately would give a sensation of that colour. Memory is once more called in by Bergson and Mrs. Stephen to produce the rabbit out of the hat. There are several comments to be made on this procedure. Memory is now being used in a quite different sense from that noted above. There is no reason to suppose that the single vibrations produce any sensation at all, still less that a seen colour is the sensation produced by one vibration after this has been complicated with or has acquired a meaning in terms of those produced by the previous exactly similar vibrations. Either memory here 'holds in tension' the vibrations themselves or supposed elementary sensations due to each separate vibration. On the former alternative all analogy with any psychologically verifiable process has utterly vanished. On the latter we must say that, since there is no evidence that the separate vibrations produce any sensation at all, and no reason to suppose that, if they do, these sensations resemble those of colour in the least, it is doubtful whether memory has anything to 'hold in tension,' and still more doubtful whether it could do the work assigned to it. For in those cases where we know that on repetition an actual qualitative modification of the sense-data takes place (and they are the exception) this modification is a comparatively small one, whilst here the difference which memory would have to make would

be to produce a definitely coloured sense-datum out of sense-data which we have every reason to think would have neither this nor any other colour. Finally, we must remember that it is only one particular interpretation of the scientific theory (though it is no doubt the one which most scientists believe) that the vibrations in some sense produce the colour. They may, after all, simply direct our attention to the colour already present in a physical object. The particles of all objects that are really red may vibrate with a certain frequency and the sole function of this may be that it is a factor in causing us to become aware of the redness that is always present in this object.

Prof. Carr in the main agrees with Mrs. Stephen, and, after a very fair summary of the contributions of the other symposiasts, concludes his own with an attempt to show that the modern conception of Relativity was anticipated by Descartes and in some respects more consequently thought out by him and his immediate successors than by modern relativists.

The symposium on Finite Minds and the Mind of God is opened by Dean Rashdall in a powerful paper on the negative side. Common-sense denies that one mind can be a part of another, and it is right. Philosophers persuade themselves to the contrary by thinking that identity of content implies identity of knowing subjects. The difficulty is not diminished in the least by holding God to be timeless; 'we do not understand time, but we shall not understand it any better by talking nonsense about it'. Finally Prof. Pringle-Pattison is gently twitted with a desire to run with the hare and hunt with the hounds in this matter.

Prof. Muirhead holds that, in spite of difficulties, a meaning can be attached to the phrase that finite minds are parts of God's mind, in which this shall be both true and important. After rejecting other possible interpretations, he concludes that such a meaning is found in the connexion between God's purpose and the purposes of finite persons. Dr. Schiller rejects this view, and, in the main, agrees with the Dean of Carlisle. He submits, however, that the facts about multiple personality do offer additional senses in which one mind might be part of another, though they hardly suggest that the relations between God and man on this view would be of a friendly character or that God's mind would compare favourably with those of his creatures. It seems to me that even here there is at most total or partial identity of *content*, together with an immediate knowledge of some things which one person can commonly only know mediately about another. Dr. Schiller says that most religious conceptions, being based on partially inconsistent desires, involve contradictions; but holds that this is no special objection to them, for 'the mathematician thinks nothing of inventing a symbol for an impossible operation like $\sqrt{-1}$ . . .; and when he has done so troubles himself no further with any logical protests'. Dr. Schiller may be right about religion; but he is certainly wrong about mathematics, as half an hour's study of chapters vi., vii., and viii., of Prof. Whitehead's *Introduction to Mathematics* will show him. Dr. D'Arcy contends that it is necessary to suppose that something exists to unify various finite minds, just as (according to him) they unify the material world. Now, as material objects do not lose their own peculiarities by this unification, so there is no need to suppose that finite minds lose their individuality in the unity of God. God cannot be held to be a self in the literal sense, but it does not follow from this, as Bradley thinks, that *nothing* is literally a self; and, since selfhood is the highest kind of unity that we know, we are justified in ascribing it to God *sensu eminentiori*.

In the symposium about knowledge of acquaintance, Prof. Dawes Hicks and Miss Edgell denied its reality, without otherwise agreeing among themselves; Dr. Moore argued that there could be no doubt of the *fact*, though there might be grave doubt as to certain statements made about it by Russell and others; and the present writer attempted to clear up certain

ambiguities in the question and to deal with some of the arguments used by Prof. Dawes Hicks.

It remains to deal with Mr. Russell's contribution. He has been trying his hardest to become a behaviourist. Behaviourists insist that they have no minds; and, although their arguments do not seem to me to prove this modest contention, the fact that they accept such arguments does suggest that at any rate they have none to spare. Mr. Russell indeed admits that he has only been able to persuade himself that his mind, like Mrs. Easy's nurse's baby, is a very little one; and it may be doubted whether he will be able to persuade anyone else of this proposition. I need scarcely say, however, that Mr. Russell's arguments are not to be settled by cheap witticisms of this kind. Substantially his position is this. He is persuaded as a matter of method that both the self and its acts ought to be treated as logical constructions like points and instants, of course without prejudice to the possibility of their being something more than this. His old theory of judgment, and much that he has written about sensations and sense-data, will of course have to go if this position is to be worked out. In this article he is looking for a theory of judgment that shall fill the gap. Naturally the behaviourist view presents itself as a candidate, since behaviourists will have nothing to do with any factors the evidence for which is introspective. He therefore tests the behaviourist theory of judgment much as Cardinal Newman tested the XXXIX. Articles to see how much catholic truth they could be made to contain. He concludes that it is considerably less silly than it looks at first sight, that it contains important elements of truth, and that certain arguments against it which seem highly plausible will not bear scrutiny. Nevertheless he thinks that it breaks down over the empirical fact that there are genuine mental images, and that these at least are necessary for any theory of judgment that will fit the facts. His positive view seems to be that images are both necessary and sufficient to constitute propositions. Both these positions, and more especially the latter, seem to me highly doubtful. Verbal propositions have a meaning in terms of image propositions, and image propositions refer to facts other than themselves, which correspond to them in certain ways, if they be true. There are genuinely negative facts, but neither verbal nor image-propositions are among them; a negative sentence is a positive fact and so is the image proposition corresponding to a negative fact. This has led people (wrongly, as Mr. Russell tries to show) to attempt to analyse away *all* negative facts. Belief, as an act, is a feeling, or rather a class of feelings, associated with certain sets of images. Memory and expectation are special varieties of this feeling, and the difference between them is liable verbally to appear in the content of the proposition. Differences of tense do not really belong to content any more than differences of quality. It is impossible to criticise an elaborate and novel theory, dealing as does this with extremely fundamental points, at the end of a review. I hope to return to the subject in the near future.

There are a few misprints in the book. Two in Dean Rashdall's article make him say the exact opposite of what he evidently means; whilst Prof. Wildon Carr is made to speak of 'illuding' where he clearly means 'alluding'.

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Theophrastus and the Greek Physiological Psychology before Aristotle. By George Malcolm Stratton. London: George Allen & Unwin, Ltd.; New York: The Macmillan Company, 1917.

Theophrastus' work *De Sensibus* is a book of great interest as being the only continuous portion left to us of his great collection, in eighteen books, of *Opinions of the Physicists*, the source from which all the