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higher forms of civilized development have originated among peoples whose family life was of the patriarchal kind, involving a particularly stern discipline of the sexual life of the women." Dr. Casserley is deeply impressed with the virtues of patriarchal monogamy and he sings them again on pages 100, 101. Was it really his sociological studies which led him to this remarkable conclusion?

Altogether this is more of a theologian's book than a sociologist's. Much of it consists of simple assertions such as "The truth is . . . that religious thought at its narrowest inevitably turns out in the last analysis to be broader than secular thought at its broadest" (page 82). Much would be quite in place in a sermon. But one cannot complain about that since Dr. Casserley's essential thesis rests on faith and is incapable of defence by argument. Unfortunately, however, he does not call spades spades and opinions opinions, but follows the fashion, now popular amongst theologians, of using the adjective "existential" to describe private beliefs which it is desired to pass off as eternal verities. A modern theologian can get away with murder if he declares that it is "existentially justified." In the 115 pages of that section of Dr. Langmead Casserley's book which is devoted to morals, the words "existential," "existentialism," "existentialist," "existentially" occur more than forty times. The climax is reached (page 82) when secularists are taken to task for avoiding or glossing over "the existential character of human existence."

BARBARA WOOTTON.

The Clairvoyant Theory of Perception: a New Theory of Vision. By M. M. Moncrieff. (Faber & Faber Ltd. Pp. 315.)

In this book Mr. Moncrieff puts forward and recommends a form of direct realism in regard to visual perception. It is bound up with something which he calls the "Principle of Four-dimensionality." He gives some account of this Principle in the present book, but states that a fuller treatment is to be provided in a forthcoming volume devoted primarily to that topic. He argues that the well-attested phenomena of clairvoyance became intelligible if we regard normal visual perception as a highly specialized and restricted form of a general faculty of direct perceptual cognition. What is commonly called "clairvoyance" is the exercise of this faculty either without the limitations of normal visual perception or under limitations of a different kind. An example of the first alternative would be what Mr. Moncrieff calls "Full Four-dimensional Vision," i.e. where a person "sees," from a single point of view and simultaneously, an object as a whole which he could normally see only in a sequence of perceptions of its various parts from a number of points of view. An example of the second alternative would be what is called "Travelling Clairvoyance," i.e. where a person "sees" a physical object, from a single point of view and under the ordinary limitations of normal sight, but where the point of view is remote from the position occupied by his eyes at the time. (A typical case is "seeing" one's own body lying in bed, as from a point of view some distance above the bed.)

If I understand Mr. Moncrieff aright, he would hold that what happens in normal vision when one's eyes receive the light reflected from a penny lying before one on the table may be described as follows. No part of the effect of the resulting disturbance in the optic centres of the brain is to generate a coloured extended particular (a "sensum"), which is the private immediate object of the percipient. There are no such entities as "sensa" in this sense, and no such experience as "sensations" in the sense of states of acquaintance with sensa. What the disturbance in the optic centre does

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is to call forth in the mind an act of seeing, whose immediate object is the brown surface of the penny from a certain point of view. According to Mr. Moncrieff the penny is in fact seen simultaneously from two points of view, viz. from immediately in front of the affected areas of the right and of the left retina. But in consequence of the Principle of Four-dimensionality, which will be considered later, these two slightly different perceptions of the penny are integrated, and it is seen as from a single point of view midway between the eyes.

Colours thus become objective characteristics of the surfaces of material objects. But Mr. Moncrieff finds it necessary to draw a number of distinctions here in order to deal with several possibilities, of which the following are examples: (i) A certain hill is covered with grass and looks green to anyone with normal eyesight who sees it by daylight from near at hand. (ii) If he views it from a long way off, it will look blue to him, and it will look more blue and less green the further away he is. (iii) If viewed from near at hand by a person who suffers from red-green colour-blindness, it will look reddishbrown to him. (iv) If viewed from near at hand by a normal person who has taken a dose of the drug santonin, it will look yellow to him.

Mr. Moncrieff's account of these various alternatives may be stated as follows. Except in the fourth case (that of the percipient who has taken santonin) the colour seen exists in physical space independently of the mind and the body of the percipient. Objective colours are the qualitative aspect of photo-electric events, which occur when ether-waves of various frequencies strike the atoms of material things. All the colours of the spectrum are present to some extent on the surface of a grassy hill when it is struck by that mixture of waves of various frequencies which is the quantitative aspect of daylight. But the colour which is predominant is green, and so this may be called the "intrinsic" colour of the hill. A person who suffers from red-green colour-blindness is unable to see the predominant green colour. He sees only the reddish-brown, which is also there to some extent. The blueness seen by the normal observer who views the green hill from a great distance is the colour associated with photo-electric events taking place at the surface of small material particles suspended in the air between his body and the hill. In principle it is the same as if he looked at the hill through blue spectacles. Mr. Moncrieff calls both the blue appearance to the distant normal observer and the reddish-brown appearance to the near-by colourblind observer "objective appearance colours." But he holds that the yellow colour seen by the observer drugged with santonin is in some sense a creation of his brain and nervous system, and so he calls it a "subjective appearance colour."

We may consider next Mr. Moncrieff's account of the apparent *shapes* of physical objects seen from various points of view, e.g. the elliptical appearance presented by an intrinsically round flat object when viewed obliquely. These he counts as *objective* appearances, on the ground that they are independent of the mind and the body of the percipient. The situation of the percipient merely determines which particular one of these innumerable objective appearances, associated with a single material object, he shall perceive. This assertion is bound up with a theory of "Public Perspectives," which Mr. Moncrieff merely adumbrates here and promises to develop fully in yet a third book.

I pass now to Mr. Moncrieff's account of what may be called "optical dislocation." The reflection of an object in a plane mirror is the simplest example. Mr. Moncrieff says that we must carefully distinguish between what he calls a "mirror-object" and what he calls a "virtual mirror-image."

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Suppose that my head is in a certain position in front of a plane mirror, and that I "see" the reflection of a certain vase in that mirror. Then there is a certain definite area of the mirror which (i) is being affected by waves coming from the vase and (ii) is reflecting such waves to my eye. This area, whose shape and size will be a projection of the solid vase from a certain direction upon the flat mirror, is what Mr. Moncrieff would call the "mirrorobject." This is what I literally see. Now, when a person literally sees such an object, he seems to himself to be seeing a solid object, exactly like the actual vase except for a characteristic kind of inversion, situated at a place as far behind the mirror as the vase is in front of it. This is what Mr. Moncrieff would call the "virtual mirror-image." The mirror-object of a thing from a certain place is something completely objective. The presence of a percipient in that particular place merely brings it about that that particular mirrorobject is seen, whilst the innumerable other mirror-objects of the vase from other points of view, which co-exist with this one on the surface of the mirror, are unseen. But there is nothing in the physical world answering to the description of the virtual mirror-image. It is in some sense a creation of the mind and body of the percipient. Mr. Moncrieff describes the process as "projecting" a virtual mirror-image to a place behind the mirror where no such object really exists.

In this connection Mr. Moncrieff draws a distinction between "perceiving" and "perception," on the one hand, and what he calls "acceiving" and "acception," on the other. Only actually existing physical things or events can be perceived. But the perception of a certain physical thing or event under certain conditions (e.g. a mirror-object) may generate a pseudoperception, in which one seems to oneself to see a physical thing or event in a place where nothing of the kind exists at the time. This pseudo-perceiving is called "acceiving," and the object which the experient seems to himself to be perceiving under such circumstances is called an "acceptum." This distinction should be compared and contrasted with another which Mr. Moncrieff makes, viz. between what he calls "bare percepts" and "interpretive supplements." What a person literally perceives on any occasion is indeed always something quite objective and in no sense a creation of his body or his mind. But it is extremely fragmentary, and any grown person automatically supplements it and interprets it with the memories and associations which it calls forth.

Mr. Moncrieff deals in the following way with the case of a distant star which continues to be "seen" from the earth for years after it has disintegrated. He holds that what an observer, who looks in the direction in which the star lay before it exploded, really sees is, not the star, but a stretch of innumerable small lights in intermediate space, associated with the photoelectric events produced by the radiation from the star on minute material particles in the line between his eye and the place which the star formerly occupied. Since these all lie in a line behind each other, they are integrated into the appearance of a single small distant luminous object. (Mr. Moncrieff does not deal with the phenomenon of aberration, which occurs when a distant star is watched by an observer from a platform, such as the earth, which is moving with a velocity that is appreciable in comparison with that of light. I presume that he would try to deal with it on similar lines.)

The following comments are perhaps worth making at this point. (1) Mr. Moncrieff's account of the yellow colour "seen" by a man drugged with santonin ascribes to the mind-body of an observer the power of creating colour-appearances and projecting them to places in physical space where no such colours belong. His account of virtual mirror images ascribes to it the

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power of creating appearances of solid coloured objects and projecting them to places where no such bodies exist. Is it very credible that one and the same psycho-neural mechanism should in general merely call forth direct acquaintance with independently existing coloured bodies, and yet should occasionally create and project exact simulacra of such objects? (2) I find the account of mirror-objects and virtual mirror-images difficult to swallow. In so far as one can be said to see the area of a mirror which reflects to one's eye the rays from an object in front of it, it is surely seen as a silvery area and not as having the colours of the object. Yet, as I understand the theory, it is alleged that one really sees a flat projection of the object in its own colours on the surface of the mirror, and is thereby led to have a pseudo-perception as of a similarly coloured solid object behind the mirror. (3) The account given of "seeing" the no longer existing star implies that, in the absence of particles suspended in the intervening medium, the distant star would cease to be "seen" at the very instant when it ceased to exist. Presumably aberration would also cease to occur under similar conditions. Is this really credible?

It remains to say something of the "Principle of Four-dimensionality." I suspect that the name is an unfortunate one. It is admitted that the term "four-dimensional" and the correlated term "three-dimensional" are used, in connection with this principle, in a different sense from that in which they are used in mathematics. It will be best to begin with examples. (i) A surface can properly be said to be red at each moment throughout a continuous stretch of time. But the state of redness which exists at this place at each moment of this period is associated with something else which is essentially successive, viz. a state of vibration of a certain frequency. According to Mr. Moncrieff, the red colour and the associated state of vibration are equally objective and independent of the presence of an observer. He counts the state of vibration as an instance of "three-dimensionality," and the state of redness as an instance of "four-dimensionality," in his technical sense. He regards the latter as arising through the integration of an aggregate, which is quantitative and successive, into a whole which is qualitative and indivisible. And he offers this integration as an example of the "Principle of Four-dimensionality.'

(ii) Imagine a square flat object lying in a plane. A being confined to that plane could never see this thing as a whole. He could only walk round it, get a sequence of views of the several sides, and then form as best he might a concept of the whole in which they coexist. But a being who could move out of the plane, and view the object from a point above it, would see it as a whole in one view. We are very nearly in the position of the imaginary two-dimensional percipient in respect of our normal vision of solid objects. Now we can conceive a visual field in which the whole of the surface of a solid object would be presented simultaneously from a single point of view. This would be an instance of what Mr. Moncrieff calls "Full Four-dimensional Vision." It is alleged that instances of it occur in clairvoyant subjects. However that may be, Mr. Moncrieff holds that our normal binocular vision has to an extremely limited extent the properties of four-dimensional vision. In looking at a solid we see in one visual field and from a single point of view an integration of the slightly different though predominantly overlapping parts of it which are projected on to the two retinae. This is also offered as an example of the "Principle of Four-dimensionality."

I have said that the above two cases are "offered as examples" of the Principle. But I think that I am here being too charitable to Mr. Moncrieff. I am afraid that there is no doubt that he often treats the Principle, not merely as a summary of certain important facts, but as an *explanation* and

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even as an agent which brings about various "integrations." I can see no justification for this.

Finally, I will mention that Mr. Moncrieff has very interesting things to say about stereoscopic vision, and about a topic concerning which most of us are deplorably ignorant, viz. the compound eyes of insects and the problem of how they see with this curious and seemingly clumsy apparatus. I suspect that some of the problems described are pseudo-problems, and therefore that the solutions offered are no recommendation for any particular theory. But the facts are highly interesting and will be new to many readers.

C. D. BROAD.

The Development of Aristotle. Illustrated from the earliest books of the Physics By H. E. Runner. (J. H. Kok, N.V., Kampen.)

This work is a thesis presented for the doctorate at the Free University of Amsterdam, by a student who was born in America, but evidently does not write English as his native language. In the first chapter, he discusses at considerable length "the present status of Aristotelian studies," and arrives at some general maxims of interpretation. In the remainder of the thesis, he considers in detail Books VII, I, II, V and VI of the *Physics*, leaving out of account Books III and VIII, because it is held that they show Aristotle's system in its final shape and throw less light on the process of its formation.

The writer is deeply influenced by the methods of his principal philosophical teacher, Dr. Vollenhoven, who has just published the first volume of a Geschiedenis der Wijsbegeerte. This work will, no doubt, in due course be reviewed in this journal. However, since its method is accepted without reservation by Mr. Runner, a brief description of it must be given here. In the first place, Dr. Vollenhoven writes from a definitely Christian and Calvinistic point of view. This yields him the healthy, but negative rule that one should beware of reading Christian notions into the pagan philosophers. Secondly, and this is less satisfactory, his treatment is of a highly formal character; instead of dealing with the Greek thinkers in the usual chronological succession, he starts from a classification, which is pursued to absurd lengths, of the types of doctrine which they represent. We are invited to regard the appearance of realism, in the earlier philosophy of Plato, as the salient fact. All previous philosophy including that of Socrates is termed non-realistic and variously subdivided. So far, this has little bearing on the speculation of scholars about the growth of Aristotle's philosophy. But Dr. Vollenhoven has further maintained in the journal Philosophia Reformata XVI (1951) that Jaeger's account of the genesis of Aristotle's thought is open to objection on the ground that he considers only Aristotle's reaction against Platonism and does not view his physical system in relation to earlier Greek speculation. (In the present reviewer's opinion, this charge is wholly untrue.)

Coming to Mr. Runner's thesis, many points might be criticized both in his account of the state of Aristotelian studies and in his analysis of the *Physics*. It need only be said that he distrusts the view which would distinguish three main phases in Aristotle's development, and prefers simply to contrast a Platonic and a non-Platonic phase. The evidence which he offers, however, will convince no one who is not a disciple of Vollenhoven; and my impression is that the faults of the work are not so much those of the writer, as of the teacher whose jargon and distinctions he has imbibed.

D. J. ALLAN.