

kind. While the psychologist is well-nigh constrained to follow, in a general way at least, the progress of physical inquiry, the physicist, when he ventures into the psychological field, almost invariably has recourse to a number of obsolete ideas, ideas which have long since been discarded by psychologists themselves.

What, for example, does Dr. Jeffreys mean by the term "sensation", which he uses so freely in his letter under the above heading in NATURE of June 1? Does he mean the mental act or process of *sensing* (more properly, the mental act or process of perceiving); or does he mean that *which is sensed* (or perceived), what it is now usual to call the *sensum*? If he means the former, then certainly "each sensation is private to one individual"; but, in that case, "we cannot," as Dr. Dingle says, "speak of observing sensations", not at all events in the way Dr. Jeffreys implies, because, as Dr. Dingle puts it, the "sensation" is the observing and "not a thing to be observed". If Dr. Jeffreys means the latter, then no doubt a sensation can be observed; but, in that case, it is sheer dogmatism to assert that sensations "obviously do not exist when they are not observed". That is by no means obvious; on the contrary, I imagine most modern psychologists would agree with Stout that sense-qualities, such as colours and sounds, "do essentially enter into the constitution of the material world". It requires, indeed, but little reflexion to see that what Dr. Dingle calls a "sensation of whiteness" (that is to say, the awareness of whiteness) is not itself white, any more than the apprehension of a triangle is itself triangular.

There is corresponding confusion in the use of the term "concept". It is, of course, impossible here to discuss in detail the nature of concepts; but briefly a concept may, psychologically considered, be said to be a way in which universals are cognised. Clearly, however, neither a ghost nor the planet Neptune (referred to in the correspondence in question) can be said to be either a universal or a concept; each is no less individual and particular than a patch of blue or a sound. Nor is it in the least degree true to say that what are sensations to one person are concepts to another person. I take it that by "concepts" the writer means, in this context, what are usually called "images"; and that he intends to assert that what one person is sensing another person can only imagine. Even that, however, is far from obvious, and cannot be laid down as an indisputable truth.

G. DAWES HICKS.

9, Cranmer Road,
Cambridge.
June 4.

OTHERS beside Prof. Dingle find this discussion "amusing"¹. Each disputant is trying to show that only his philosophy is compatible with science; if he succeeded, he would surely destroy the object of his attempt. For the distinctive feature of scientific propositions, and presumably the source of their evidential value, is that they can be believed by anyone, whatever his philosophy.

Of course, this agreement may be illusory. Profs. Dingle and Levy, who have such strong and such divergent views about the "external world", may be assenting to entirely different propositions when they both assent to (say) Ohm's law. But then there is no science for them to quarrel about. If they are assenting to the same proposition, surely their first step should be to find out what this proposition is.

Of course, they will never agree as to why they agree; but they might agree as to what they are agreeing about. They will never achieve even that, while they insist in dragging in conceptions, such as reality and existence, that lie at the very core of their differences.

NORMAN R. CAMPBELL.

June 3.

¹ NATURE, 135, 912, June 1, 1935.

It does not seem to have occurred to the parties to this controversy that it is based, like so many controversies, on a difference of definition of terms. Prof. Dingle describes the method of science and defines the "logical network" resulting as the "external world". Others might prefer the term "scientific world" or the "scientific picture of the external world". To Prof. Levy the "external world" is what the man of science studies; to Prof. Dingle the result of these studies. So we have words, words, words!

In his letter in NATURE of May 25, Prof. Levy describes two schools of thought, and by so doing implies that they are antithetic. One "claims that science is an historical phenomenon produced by human beings in their handling of the world of which they are parts, a social practice . . ."; the other school sees science "as the organisation of our experiences in logical form". I belong to both these schools and see no inconsistency in doing so. I do not, however, accept Prof. Levy's corollary to his description of his first school that the man of science should be responsible for the social consequences of his work. Were such a doctrine to be acted upon, a scientific laboratory would become an arena for the disputes of ethical teachers and party politicians!

C. O. BARTRUM.

32 Willoughby Road,
Hampstead.
May 27.

Social Research

THE leading article on "Road Traffic Research" in NATURE of April 13 directs attention once again to the need for scientific research into social problems, for which I contended in my communication in NATURE of December 9 (p. 898). The present very unsatisfactory condition of road traffic is but another instance of Government action in a matter of which those responsible have an inadequate knowledge. As is stated in NATURE of April 13, "The tragic position of the road traffic problem at the moment and the sterility of all attempts to diminish accidents, whether by motor control, registration, insuring, licensing or deterrent enactments, are due primarily to the omission to base legislation on scientific experiments and definite facts. In the absence of such study, well-intentioned legislation is apt to have consequences and repercussions widely different from or even opposed to those for which it was designed".

This passage emphasises the same need with regard to road traffic problems that my communication emphasised with regard to industrial problems generally, the need, that is, that there should be no legislation on industrial problems unless it is based on carefully ascertained facts, and not only facts concerning the industries themselves, but also (what is at least as important) those showing what previous