

CAUSE AND SENSATION IN PHILOSOPHY

Proceedings of the Aristotelian Society

New Series, Vol. 44 : Containing the Papers read before the Society during the Sixty-fifth Session, 1943-1944. Pp. xxx+160. (London: Harrison and Sons, Ltd., 1944.) 25s. net.

THE nine papers in volume 44 of the *Proceedings of the Aristotelian Society* cover a wide range of subjects, including logic, psychology, ethics, religion. Three are likely to be of special interest to scientific readers. Though the authors approach the subject in different ways and quite independently, they all attack the phenomenalist or positivist view of scientific knowledge. Mr. J. C. Gregory, writing on "Causal Efficacy", argues that those who treat causation as nothing but regularity of succession ignore the universal background of all thinking, primitive or advanced. The notion of activity or efficacy belongs to this background. Dr. J. O. Wisdom in an article on "The Descriptive Interpretation of Science" admits that, so far as it provides a maxim of caution against postulation of unnecessary entities, the descriptive interpretation is useful, but urges that it cannot possibly be taken as final. Experiments are made and experimental science exists only because of the expectation that things will behave in definite ways; an expectation which the descriptive view dismisses as groundless.

Prof. H. H. Price, in his presidential address "Touch and Organic Sensation", clinches the argument with admirable force and lucidity. He points out that phenomenologists and positivists, all those who take the descriptive view of science, the regularity view of causation, and treat matter as a logical construction, are visual philosophers. "Hume looked at his billiard balls. And all that he could see was that one moved whenever the other struck it. Indeed, in any causal transaction there is nothing else to be seen except the concomitance of two events. But the tactual conception of causation is quite different." Organic sensation, if we take it to be the genus of which tactual and muscular sensation are species, reveals a world different from that of visual experience. The difference is specially marked if visual experience is taken, as it so often is, to exclude peripheral vision or anything ill-defined. The first main difference is that organic sensation is better analysed in terms of feeling and content (I feel tired) than of act and datum (I see a cat). The second is that it provides unity or wholeness as well as voluminousness and interpenetration, qualities singularly lacking in sight. As to its different modes, tactual experience gives rise to the obstacular conception of matter and muscular experience to the activity conception of causation. These conceptions do not arise in the first place from inferences made by comparing sets of experiences, but are given as qualities of tactual and muscular sensation. Lastly, muscular activity combined with other forms of organic sense provide a basis for self-consciousness; what it feels like to be alive.

The reason why organic sensation has been neglected and purely visual philosophy so much favoured is that for purposes of theory it is convenient to take sight as the model or type sense. Its range, flexibility and precision make it a specially suitable medium for theoretical statements. Moreover, long before science existed human language had developed

a visual bias in its terminology. The result is that any other sort of perceptual experience tends to be interpreted in visual terms, and often, as Prof. Price argues, misinterpreted. A. D. RITCHIE.

AMINO-ACID CONSTITUENTS OF PROTEINS

The Amino Acid Composition of Proteins and Foods

Analytical Methods and Results. By Dr. Richard J. Block and Diana Bolling. Pp. xiv+396. (Springfield, Ill., and Baltimore, Md.: Charles C. Thomas; London: Baillière, Tindall and Cox, 1945.) 6.50 dollars.

AT a time when the world faces a food shortage for man and beast, the nutritive evaluation of protein foodstuffs is a matter of first importance. The relative values of the different proteins in nutrition are based upon their content of those special amino-acids which cannot be synthesized in the animal body and are indispensable for its growth and continued health. All these 'essential' amino-acids are not present in every protein. With a knowledge of the amino-acid composition of the various animal and vegetable proteins, it is possible to choose proteins so that they become mutually supplementary, and thus to ensure a diet that contains the qualitative and quantitative requirements of essential amino-acids.

Obviously the selection of proteins to form an adequate diet depends on accurate estimations of the amino-acid constituents. The analytical methods used in such estimations are scattered widely throughout the literature. It is difficult without much experience to assess the value of several differing methods employed in the estimation of the various amino-acids. Dr. Block and Miss Bolling have collected together analytical methods for the estimation of the essential amino-acids and also of those non-essential amino-acids which can be evaluated with some degree of accuracy. In this way it is possible to compare the content of a specific amino-acid in the same protein as determined by many different procedures.

Attention has been directed to the one great difficulty in any accurate determination of amino-acids in proteins, which is the loss, to a greater or less extent, of the amino-acids by the process of hydrolysis. The methods which have been employed to arrive at an estimate of losses during hydrolysis are discussed in some detail for each of the main groups of amino-acids.

The authors have wisely given the various analytical methods in detail, including not only those employed for determinations but also for separation of specific amino-acids from protein hydrolysates. At the end of each section on a group of amino-acids, they have listed with references the values obtained by different workers for several proteins. Their opinion as to 'best values' may not receive general approval, but it is valuable to have such an opinion based as it is on wide experience.

This book is not only a most timely but also a most welcome addition to the literature of the proteins. It is well indexed and documented with a valuable bibliography. British readers will envy the way in which the book has been produced, with its clear printing on good paper.