

the individual purified proteins of the myofibril, nor the brilliant investigations on the fine structure of the fibril, has led to any well-founded theory as to the nature and mechanism of the structural changes which take place in the contractile particles"; but most of the rest is for the expert only.

A splendid review on "The Arrangement of Amino-Acids in Proteins" is contributed by F. Sanger (Cambridge), who himself has devised and applied many of the methods he describes; the section on methods for the degradation of proteins and their inherent pitfalls is especially welcome. A discussion of nomenclature and symbolism for peptide chains and terminal residues is included. A new structure for vertebrate collagen fibrils, based on parallel, coiled, polypeptide chains (protofibrils) with transverse matching of corresponding chemical structures, is put forward by R. S. Bear (Massachusetts Institute of Technology). Work on the comparative structure and organization of mammalian epidermal cell proteins is discussed by K. M. Rudall (Leeds). Complementary to the article on infra-red spectroscopy, G. H. Beaven and E. R. Holiday (London Hospital) consider the "Ultraviolet Absorption Spectra of Proteins and Amino-Acids", especially the vibrational fine structures revealed by Holiday's 'moving-plate' spectrographic method, and the advantages and problems associated with analytical methods for proteins in terms of their aromatic amino-acid content.

It is a pleasure to see so many British authors featured in this volume—a welcome recognition of British contributions to protein chemistry. One suggestion may be made: the publishers should consider providing, in each subsequent volume, a cumulative list of titles in the whole series.

## DESCARTES: THE FATHER OF MODERNITY

### Descartes and the Modern Mind

By Prof. Albert G. A. Balz. Pp. xiv+492. (New Haven, Conn.: Yale University Press; London: Oxford University Press, 1952.) 63s. net.

MOST students of the seventeenth century will know the name of Prof. A. G. A. Balz. During the past twenty years, articles in learned reviews and a recent volume of essays, "Cartesian Studies", on the successors, both friendly and hostile, of Descartes have given us a foretaste of the scholarship and power of analysis which mark this distinguished volume, confessedly the fruit of many years of reflexion and study. Whether one agrees or disagrees with Prof. Balz's interpretation of Descartes, one cannot help being impressed by the sincerity and depth of his analysis, and it is refreshing to read a commentator who has meditated the texts of his philosopher and pondered them until he has wrought for himself and his reader a consistent meaning and interpretation. Prof. Balz does not close his eyes to the many difficulties and inconsistencies in the thought of Descartes, but the gaps he sees are not of his own making; they are, in one sense, inherent in the nature of the problems themselves. Towards the end of his book, he points out how fortunate the pursuers of inquiries concerning physical Nature are, in so far as their undertakings

are relatively simple and they can avail themselves of the aid of the mathematicians. "They cannot quite conceal a certain disdain for those who conduct inquiries concerning that lesser mystery, man, whose baffling unity of composition is the very ground of their good fortune." Yet even the man of science may turn upon himself and experience some of the doubt and perplexity of the philosopher. "Those who pursue the physical sciences would do well to look with charity and humility upon those who seek to penetrate the mystery we confront because man is man, and because the conductors of inquiry are men." It is probable, at the present moment, that Descartes would obtain a more sympathetic and intelligent understanding of his problems from men of science than from the majority of philosophers, who would reject, out of hand, both solutions and problems as linguistic fallacies.

The title of this work is a little misleading. Except for the last four chapters, the author is not directly concerned with Descartes and present problems of science and philosophy. It is rather the beginnings and growth of the 'modern mind' which form the main subject of this work, and the concern is with Descartes as the father of 'modernity', at least as a first among equals. Prof. Balz is careful to point out that the transition from medievalism to modernity does not merely mean revolt but also conservation, not only change and destruction but also revision and redirection. The first four chapters are accordingly devoted to a discussion of the Augustinian and Thomistic doctrines, especially the famous distinction of *Scientia* and *Theologia*, which set the conditions under which Descartes must seek to launch the search for truth in the sciences. The next section describes this quest for certainty and is, in fact, together with the following section, a detailed analysis and exposition of the epistemological and metaphysical doctrines of the "Meditations". It is impossible, in the limits of a short review, to enter into the many points raised in these closely argued chapters. One original point of exposition may perhaps be mentioned. The name *Cartesius* is used to signify reason itself, and *René Descartes* used to describe the conductor of the inquiry who proposes to report what he has learned from *Cartesius*. This rhetorical device is used to avoid possible misconceptions which may arise from faults in Descartes's own method and devices of expression being confused with the logical structure and articulation of his philosophy. Given the patience requested by Prof. Balz, I was able to follow the elaborate discussion of the methodical doubt and the *Cogito* with comparative ease. Some readers may become slightly irritated.

The second part of the book is devoted to a discussion of the scientific doctrines of Descartes. It is as though the text commented upon was changed to the "Principia", but the emphasis is still upon the philosophical aspects. The mind-matter or soul-body problem is discussed in great detail, and this is one of the most rewarding sections of the whole work. The texts quoted are well known, but an original thinker throws new light on them without forcing or distorting their meaning.

The volume is magnificently produced, although it is somewhat expensive. Personally, I do not see the need for quoting the French texts in their old spelling, which may puzzle a few readers. Descartes himself was a careless speller and often expressed his complete indifference to orthography. Nothing is lost by modernizing the text.

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