translator adds Evvard), Falkovich, Puckett, Khaskind, Frankl, Gurevich, Karpovich, and Hayes. The work is dense with calculations, but the mathematics is simple and within reach of the aeronautical engineer. The "approximations" are heuristic and formal, there is no trace of what a mathematician would regard as a precise theory. The authors make no mention of the extensive literature arguing in favor of retaining terms they throw away or of throwing away terms they retain, as is usual among perturbationists. Thus they give the linearized theory an appearance of finality which would be destroyed by any more catholic presentation of the field.

The translator tells us he has made a literal translation, "with no effort . . . to impose the translator's style on the author's intentions." However, he has added at least one reference (to himself) and one plate without any special notice; what else he may have changed we can only guess. In some places he appears to preserve the Russian word order, and surely we cannot blame the author for "make $\partial\phi/\partial t$ to vanish" (p. 5), "the formula for the pressure is derived, now" (pp. 6–7), "to show that the wave equations, is satisfied" (pp. 11–12), "the body generatrices" (p. 22), and so forth, not to mention the many misspellings.

C. TRUESDELL

Graduate Institute for Mathematics and Mechanics, Indiana University

Protein Metabolism. R. B. Fisher. Methuen, London; Wiley, New York, 1954. ix + 198 pp. Illus. $2.50.

This interesting and thoughtfully written little book is the latest member of the excellent series known as *Methuen's Monographs on Biochemical Subjects.* Like its predecessors, it is pocket-sized and very convenient to carry about for perusal at odd times.

It is the stated purpose of the author to "re-view" the essential knowledge of protein metabolism and to remind the reader of the possibility of reinterpreting discovered facts in the light of later findings. He is interested in redirecting the student to some of the older literature and is opposed to the rather popular notion that what is latest is always best.

There are seven essays, all but one accompanied by a conclusion. There is a general conclusion at the end of the book. The essays are: I, "Digestion and absorption of protein"; II, "The overall picture of protein metabolism"; III, "The metabolic significance of specific enzymes"; IV, "General aspects of the metabolism of the amino acids"; V, "The use of isotopes in the study of protein metabolism"; VI, "Metabolic and endocrine interactions in protein metabolism"; and VII, "The nutritive value of proteins." In each case the author undertakes to question current hypotheses, particularly in those cases where the physiological point of view seems to have been lost sight of or neglected. His central theme is that protein metabolism must be considered to be the metabolism of the amino acids in concert and that, of the variety of chemical and physiological factors which are kept in balance, no one can be neglected indefinitely.

Among the questions raised are included the examples that follow. It is my opinion that reappraisals which are the heart of this small volume may well stimulate future studies. Fisher, who is demonstrator in biochemistry, University of Oxford, considers that it is not firmly established that the "currency" of protein metabolism is amino acids. There is a distinct possibility that small peptides may fulfill such a role. There is no complete assurance that amino acids only are the end products of digestive proteolysis. The time required for complete digestion of proteins by protease action *in vitro* seems to be at variance with any assumption of complete hydrolysis.

It is the author's view that protein synthesis involves not only competition for precursors but also secondary physiologic influences which affect the synthetic process. In the light of present data, transamination, deamination, and the urea cycle seem to be somewhat lacking insofar as detailed knowledge of protein catabolism is concerned. The author is quite skeptical of experiments which have involved feeding a high level of a single amino acid along with an already adequate protein intake. He feels that studies with isotopically labeled amino acids have led to real advances in understanding in spite of certain difficulties of interpretation.

This book is to be recommended as a stimulating and brief analysis of a very complex active research area.

CARL S. VESTLING

Department of Chemistry and Chemical Engineering, University of Illinois

Structure Reports for 1950. vol. 13. A. J. C. Wilson, Gen. Ed.; N. C. Baenziger (Metals), J. M. Bijvoet (Inorganic compounds), and J. Monteath Robertson (Organic compounds), Section eds. Oosthoek, Utrecht, Holland, 1954 (For the International Union of Crystallography. viii + 643 pp. Illus. $21.50.

This is the fourth volume of the series to be published, and it is the latest step in the process of catching up with publications of structural interest during the period since the last issue of the *Strukturbericht,* vol. VII for 1939. Like most workers concerned with structural studies, I turn to each of these reports as they appear to see not only what articles of importance I may have overlooked but also whether I have fully appreciated all important points in the articles I have supposedly read. For these are not abstracts in the ordinary sense; they aim to survey structural work so fully that nothing further would be gained by consulting the original papers. Indeed, these reports may go even further, for the abstractors sometimes give their own comments on the work. For example, their own calculations of interatomic separations may be compared with those in the literature. This is a wonderful service for all structure analysts, and one wonders whether the editors and their col-