presumably as a matter of deliberate taxonomic policy, no sub-species.

The greater part of the genus was revised by Goncharov, a lesser but nevertheless important part by A. G. Borisova, and other smaller portions by other authors.

The translation by Dr. N. Landau appears to be efficient and clear, and his undaunted perseverance in ploughing through so many specific descriptions, mostly not written in a particularly enlivening style, is praiseworthy.

J. P. M. BRENAN

The Biochemical Genetics of Vertebrates Except Man

By I. E. Lush. (North-Holland Research Monographs. Frontiers of Biology, Vol. 3.) Pp. viii+118. (Amsterdam: North-Holland Publishing Company, 1966.) 36*s*.

THIS monograph, the third in the series "Frontiers of Biology", is devoted to a tabulation of the biochemical variations uncovered so far in mammals, birds and fishes. The author has assembled a large quantity of material, and made interesting reading out of a text which, from its necessary form of presentation, might have been tedious. The subjects discussed in some detail include genetic variations in transferrin, haemoglobin, γ-globulin, esterase, amylase, lactate dehydrogenase and pyrimidine catabolism, to name only a few. This is the first time that an attempt has been made to collect and summarize this material from a widely scattered literature. The concluding chapter includes a clear concise treatise on deletion and duplication in vertebrate biochemical genetics, and the quaternary structure of proteins.

The treatment on the whole is descriptive rather than analytical. One of the most dynamic sciences at the moment is the investigation of the chemical nature and behaviour of the hereditary unit. This publication will serve as a convenient source of reference, not only to biochemists and geneticists interested in this field, but to all researchers who are just awakening to the realization of the powerful research tool and the potentialities afforded by biochemical variants. H. M. MURPHY

Radioactive Pharmaceuticals

Edited by Gould A. Andrews, Ralph M. Kniseley, and Henry N. Wagner, jun. (Proceedings of a Symposium held at the Oak Ridge Institute of Nuclear Studies, November 1–4, 1965.) (U.S. Atomic Energy Commission/Division of Technical Information.) Pp. viii+728. (Springfield, Virginia: Clearinghouse for Federal Scientific and Technical Information, N.B.S., U.S. Department of Commerce, 1966.) $5.

THE publication of these proceedings comes at a time of particularly rapid growth of the use of radioactive materials in medicine. The purpose of the symposium was to summarize and correlate the recent advances in the development of radioactive pharmaceuticals for use in clinical medicine and biological research. It succeeds admirably. The symposium title *Radioactive Pharmaceuticals* itself acknowledges the technical advances and the change of status which have occurred in the 28 years since thyroid function was first demonstrated with radioactive iodine. To some extent it may also mislead, since a radioactive pharmaceutical is usually administered to provide information, commonly of organ function, rather than to elicit a specific pharmacological response. The papers in these proceedings are accordingly largely devoted to the discussion of radioactive materials used in diagnosis: their production, their characteristics and the techniques for using them. Their applications in radiotherapy are not included.

Recently developed radiopharmaceuticals figure prominently and provide a convincing illustration of the more sophisticated diagnostic techniques now being achieved. The instrumental aspects are not reported in the proceedings though the consequences of concurrent developments in equipment for external body scanning are everywhere apparent.

The forty papers range widely through biochemistry, pharmacology, radionuclide production, nuclear medicine and the radiopharmaceutical industry. The more critical outlook of both suppliers and users of radioactive pharmaceuticals is reflected in the number of papers concerned with quality control and licensing regulations.

The proceedings provide not only a record of what was a well timed and eminently successful symposium, but a valuable reference for all whose work brings them into contact with nuclear medicine. C. C. EVANS

Strong Solids

By A. Kelly. (Monographs on the Physics and Chemistry of Materials.) Pp. xv+212. (Oxford: Clarendon Press; London: Oxford University Press, 1966.) 42*s*. net.

DR. KELLY has written a book quite unlike any other at present available. He has undertaken a single-minded treatment of a central question: what determines the ideal strength of solids, and what steps can be taken to approach this in practice as nearly as possible.

The first chapter shows how the ideal fracture and shear strengths can be calculated, and what physical parameters must be controlled to maximize them. Next, Dr. Kelly summarizes the fracture promoting properties of cracks, and goes on to expound very selectively some relevant properties of dislocations, in particular the forces binding them to the lattice. An illuminating chapter on presently available strong alloys, including recently developed forms of high strength steel, is followed by a long chapter on the dynamics of fibre reinforced composites. A final chapter is concerned with the practical methods of making these.

The last two chapters include much very recent material, a good deal of it arising from the work of the author and his associates. They constitute the most readable and up to date survey of the reinforcement of plastics and metals by strong fibres. The early chapters deal with older subject matter, yet make stimulating reading, because the author has firmly resisted the temptation to spread his subject matter; he has not hesitated to use without proof formulae in the theory of elasticity or in dislocation geometry, for instance, but has incorporated them in the flow of his argument in such a way that its physical basis is always clear. Also he has been unusually careful to map out his plan of campaign at the start of each chapter, and at each stage to explain exactly what he is aiming at.

The book is up to the very high standards of the Clarendon Press. Apart from a slip near the foot of page 118 and a mysterious footnote on page 150, I found no errors. The book is recommended without hesitation to students of metallurgy, materials science and mechanical engineering, and to their teachers. R. W. CAHN

Nonlinear Electron-Wave Interaction Phenomena

By Joseph E. Rowe. (Electrical Science: a Series of Monographs and Texts.) Pp. xiv+591. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1965.) 144*s*.

THE subject of this book is the non-linear analysis of the interaction between streams of charged particles and propagating electromagnetic waves. The theoretical foundations are laid with mathematical rigour in the first part of the book, while the remainder is devoted to the detailed application of the theories to various *O* and *M* type microwave tubes, and to some related techniques and problems. It is essentially a very full and systematic theoretical analysis of microwave tubes in which the theory has been developed with sufficient generality to be of