

used for sheep pituitaries, as it should have been for consistency), and the widespread use of the inept term "let-down" which the reviewer thought he had knocked out twelve years ago, but which has persistently refused to lie down. There are some inconsistencies such as the use of "dog" rather than "bitch", while the females of the ox, horse, sheep and pig are called "cow", "mare", "ewe" and "sow". Bibliographical errors are also more frequent than they ought to be, particularly in Chapter 7. British readers are by now inured to what seems to be becoming standard American practice in the use of prepositions (two of the more startling examples being "identical to" and "different than"), but in a book of this calibre one would not expect to find a sentence like (p. 163): "A hypothyroid monkey put on a very low thyroid dosage for a period of ten days always resulted in the return of menstrual function".

The main justification for the publication of this book in face of the well-established and authoritative treatises mentioned at the beginning of this review must lie in its emphasis on farm animals and its relatively modest price, which will bring it within the reach of the private purchaser. Is this publication justified? On the showing of this first volume the reviewer thinks so, despite the criticisms mentioned above, and he is glad to recommend it.

S. J. FOLLEY

## HÆMOGLOBIN AND SENSORY MECHANISMS

Progress in Biophysics and Biophysical Chemistry  
Vol. 9. Edited by Prof. J. A. V. Butler and Prof. B. Katz. Pp. vii+388. (London and New York: Pergamon Press, 1959.) 105s. net.

**F**OLLOWING the present reviewer's criticism in *Nature* of the previous volume of this series on the grounds that few of the articles matched up to the aims stated in the preface, the editors have prudently suppressed the customary preface in this volume. Perhaps they need not have feared; their aims may well be achieved, for five out of the seven articles are written in such a way as to be intelligible and interesting to non-specialists in their subjects. Two of these articles have the special flavour that only comes when a scientist with a flair for exposition describes the development of a subject he has himself largely invented and contributed to. These are F. J. W. Roughton on the kinetics of oxygen and carbon monoxide uptake by red cells and by solutions of hæmoglobin, and W. A. H. Rushton on visual pigments and their measurement in the living human eye. The book opens with an enthusiastic and highly interesting account by Q. H. Gibson of the rapid reactions of hæmoglobin with gases. The last article which can be recommended without reservations as to style or scientific content is that in which J. A. B. Gray describes what is known of the way sensory endings, sensitive to mechanical change, convert mechanical energy into streams of nervous impulses; he illustrates the argument mainly from his own and his collaborators' pioneer work on the Pacinian corpuscle.

It would have been churlish to exclude the article by D. A. McDonald and M. G. Taylor on the hydrodynamics of the arterial circulation from the category 'intelligible and interesting', but after reading it I

found I was not convinced either that their problem was an important one, or that they had advanced much towards a solution.

The two remaining papers are by A. Peterlin on molecular dimensions and light scattering (fifteen pages of references) and by C. de Duve, J. Berthet and H. Beaufay on gradient centrifugation of cell particles. Both of these appear to be competent and clear descriptions of the theory and practice of their highly specialized techniques, which would no doubt be of great convenience to anyone directly concerned. But this volume is supposed to be about progress. Is a technical description of the methods by which progress may have been achieved in the past and by which it is hoped to achieve it in the future any substitute for a critical account of progress? It certainly makes very much duller reading than the real thing. Fortunately, there is plenty of the real thing in this mainly excellent work.

P. A. MERTON

## COLOUR REPRODUCTION

### The Reproduction of Colour

By Dr. R. W. G. Hunt. Pp. 208+10 plates. (London: Fountain Press, 1957.) 63s. net.

**T**HIS book expounds the principles and the crucial technical devices of the processes used in colour reproduction in photography, printing and television. Many of these processes are now extremely intricate—for example, the action of the couplers of various kinds used in colour photography and the coding and transmitting of colour information on television wave-bands of limited width. In the difficult task of explaining essentials in an easily read text with clear and simple diagrams and a minimum of mathematics, the author has been highly successful. A course of lectures (Royal Institution, 1953) was the starting point and much of the freshness and intimacy of a good lecture style has been preserved.

A common element linking all the reproduction techniques is a dependence on the basic ideas of colorimetry and the perception of colour by the human eye, fields in which Dr. Hunt's own researches are well known. The exposition here is unexceptionable and, most important, it has not been allowed to expand unduly so as to upset the balance of the work. Colour reproduction techniques, in their primitive form, are not capable—even theoretically—of giving exact reproduction, and much of what Dr. Hunt has to say concerns colour correction methods: the nine-page chapter on the general masking method in photography and the discussion of developments from Neugebauer's analysis of dot image reproduction in printing are particularly informative brief-accounts. The difficulties of assessing the 'quality' of the final result in colour reproduction are well brought out, with emphasis on the inadequacy of a demand for a simple point-to-point correspondence with the original.

Although the book appears to be addressed mainly to a rather lay circle, that is to say, people having to do with colour pictures in various ways but not experts, it is certain that many readers, knowledgeable in one area of the wide field covered, will find most useful this insight into related techniques. In the quality of the coloured plate illustrations the publishers have not failed the author. W. S. STILES