

*Die elliptischen Funktionen von Jacobi: Fünfstellige Tafeln, mit Differenzen, von  $sn$  u,  $cn$  u,  $dn$  u mit den natürlichen Zahlen als Argument, nach Werten von  $m$  ( $=k^2$ ) rangiert, nebst Formeln und Kurven.* Von Prof. L. M. Milne-Thomson. Pp. xiv + 69. (Berlin: Julius Springer, 1931.) 10.50 gold marks.

THE scope of this work is explained by its title. The author has succeeded in condensing into a very small space three quite adequate tables of double entry, which should be very useful to all who need numerical values of elliptic functions. Entries to five places of decimals are sufficient for nearly all practical purposes, and, by restricting the entries in this manner, the author has made it possible to interpolate not only (vertically) for  $u$ , but also (horizontally) for  $m$ ; the vertical interpolations are facilitated by the insertion of a table of first differences.

The tables are beautifully printed; the only defect in them which has been noticed is a dropped digit on p. 14. An introduction of eight pages gives a compact set of integrals and other formulae, which add to the value of the book. Tables of elliptic functions, being essentially tables of double entry, are extremely scanty in number; the only existing tables with which these can reasonably be compared are Glaisher's much more elaborate tables of the theta functions, which are, as yet, unpublished. The publication of Glaisher's tables will not, however, make Milne-Thomson's tables superfluous, since elliptic functions can be obtained from Glaisher's tables only as the quotient of two entries.

We welcome with enthusiasm the volume under review. Before its appearance, on the occasions (not, it is true, very numerous) on which numerical values of elliptic functions were needed, the reviewer's usual procedure was to take the Smithsonian Tables and to waste perhaps half an hour in trying to unravel the mysteries of their notations; then to put them aside in exasperation and to compute the values required by means of  $q$ -series. The present work will not be the cause of similar trials of patience.

G. N. W.

*Anatomy in the Living Model: a Handbook for the Study of the Surface Movements and Mechanics of the Human Body and for the Surface Projection of the Viscera, etc.* By Prof. David Waterston. Pp. xvii + 255 + 16 plates. (London: Hodder and Stoughton, Ltd., 1931.) 25s. net.

WE welcome the appearance of Prof. Waterston's useful manual of surface anatomy, which is illustrated with numerous figures in monochrome and colour by that excellent draughtsman the late Mr. J. T. Murray, whose death just after the completion of the beautiful drawings in this book is a serious loss to anatomy. The book gives a careful account not only of the modelling of the body and the relations of the surface markings to the deep structures, but also to the texture of the skin and what can be learned in the living from its reactions to stimuli.

It is unfortunate, however, that a book dealing primarily with the living subject should omit any

adequate reference to the chief means now at the service of the anatomist for studying the living—namely, X-ray photography. The author of the present book admits this omission, but excuses it by the surprising statement that "X-ray examination covers too wide a field and is too specialised a matter to be included here". But the information obtained by the use of X-ray photography cannot be regarded as "too wide" or "too specialised" to be expressed in the drawings. Although the work is dealing with the *living* body, the most beautiful of Mr. Murray's drawings (Plates XI. to XIV. and Figs. 70 to 74) obviously represent in the *dead* body conditions which profoundly differ from those which obtain in the living.

*Recent Advances in Organic Chemistry.* By Prof. Alfred W. Stewart. Sixth edition. Vol. 1. Pp. xii + 429. Vol. 2. Pp. xii + 432. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1931.) 21s. net each vol.

AS compared with the fifth edition (see NATURE, Dec. 24, 1927, p. 908), the new volumes have been augmented by 42 pages and 50 pages respectively, and two plates illustrating space-models of hexamethylene and reduced naphthalene rings have been inserted. The general plan of the work remains unaltered. New matter, illustrating important researches of the last few years, has been incorporated: thus, vol. 1 contains a chapter on the polymethylenes and some large carbon rings, in which noteworthy work by Ruzicka and his collaborators is discussed; and vol. 2 includes an account of di- and tri-terpenes (the camphorenes and squalenes), the decalins and other fused ring-systems, and the diphenyl problem. The new edition will continue to lighten the labours of advanced students and research workers who are interested in the fields which Prof. Stewart has selected for treatment in this valuable publication. For the work to remain true to its title, however, we suggest that some of the older and more familiar material ought to be replaced by sections on cholesterol, vitamins, and other subjects of current importance; the account of electronics in organic chemistry also calls for expansion. J. R.

*Outline of Comparative Embryology.* By Prof. Aute Richards. Pp. xvi + 444. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1931.) 30s. net.

THE first part of this book deals with those embryological processes which are common to most of the higher animal forms, and presents in assimilable form the accepted views on cleavage, germ layer formation, the egg, and embryonic membranes, including the placenta. The consideration of various invertebrate forms is based largely on the work of Korschelt and Heider. The second part of the book deals with modern problems in embryology, and presents the modern aspects of asexual reproduction, parthenogenesis, and polyembryony with clarity. The historical aspect is well maintained, and the recent expansion of experimental embryology is admirably incorporated.