

The sections on actinomycosis and syphilitic disease of joints might be advantageously recast and made somewhat fuller, whilst "tensing" as a synonym for "tighten," and "sorbefacient" for "causing resolution" are certainly as ugly as they are unwarranted.

The book is illustrated by 440 drawings, of which the majority have been executed by Dr. Harvey Goldsmith, some from preparations or drawings in the museum of St. George's Hospital, others from rough sketches made by Mr. Pick himself. The drawings for the most part fulfil their purpose of illustrating the text, but in Fig. 6 the veins appear to be situated external to the skin; whilst the drawings of the mocmain and lever trusses in Fig. 338 are too diagrammatic to be useful.

The book has a good index, and concludes with an appendix containing a description of the various methods of amputation. This appendix might have been rendered additionally serviceable by the introduction of a section upon prosthetic appliances. D'A. P.

OUR BOOK SHELF.

Elements of Precise Surveying and Geodesy. By Mansfield Merriman, Professor of Civil Engineering in Lehigh University. Pp. 261. (London: Chapman and Hall, Ltd. New York: Wiley and Sons, 1899.)

THIS book will be useful not only to undergraduates attending Prof. Merriman's classes at the well-known Lehigh University, but to all who may be engaged in carrying out accurate or geodetic surveys. It is clearly written, methodically arranged, and well illustrated; and the problem at the end of each section seems well designed to test the student's knowledge.

In Chapter i. the laborious method of least squares is explained, and the most important processes for the comparison of observations are described. Chapter ii. deals with precise plane triangulation, the measurement of horizontal angles, the adjustment of the angles of a triangle and the computations. Chapter iii. is devoted to base lines, their measurement and reduction to sea-level. A steel tape, from 300 to 500 feet long, is recommended as a convenient apparatus for the measurement of base lines, and instances are given of the excellent results that have been obtained with it in the United States. In its favour are its portability and the moderate cost at which accuracy of measurement can be secured by its use. Chapter iv. contains useful sections on accurate levelling and the adjustment of "a level net." In Chapter v. the field operations necessary for the determination of azimuth, latitude and longitude are well described, and it may be noted that a good sextant is held to be preferable to a transit theodolite for taking altitudes of a star. In Chapter vi. there is a slight sketch of the attempts to determine the form and size of the earth from that of Eratosthenes to the measurement of the Lapland and Peruvian arcs by the French Academy. This is followed by sections on the solution of geodetic problems on the supposition, first, that the earth is a sphere, and then, Chapter vii., that it is an oblate spheroid. In the latter case Clarke's elements of the spheroid are used for the calculations. Chapter viii. deals with projections, including the polyconic projection adopted in the United States; and Chapter ix. is a brief but clear account of the various operations connected with the practical work of geodetic triangulation. In Chapter x. there are short discussions on the figure of the earth considered as a spheroid, an ellipsoid, an ovaloid and a geoid; and in Chapter xi. there are tables sufficient for the solution of the problems given in the volume.

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Prof. Merriman's book contains frequent references to the valuable publications of the United States Coast Survey, which are not always easily accessible, and the American meter is used in the tables and calculations. But this does not lessen its value as a treatise on the elements of precise surveying and geodesy that may be profitably used for instructional purposes in this country. C. W. WILSON.

Experimental Science (Physiography: Section I). By R. A. Gregory and A. T. Simmons, B.Sc. Pp. viii + 332. (London: Macmillan and Co., Ltd., 1899.)

THIS is one of the school books called into existence by the alterations which have been made by the Department of Science and Art in the syllabus for elementary physiography. A clear perception of the needs of both pupils and teachers is evident throughout, and the high standard which the authors have set themselves in previous works of a similar character is thoroughly maintained. The book is so planned that it is well adapted for the new arrangement whereby the subject may be taken in three stages, by candidates for engagement as pupil teachers, and pupil teachers in their first and second years; and it also includes most of the subjects of the Oxford and Cambridge Junior Local examinations in experimental science. Though treating a considerable range of subjects, and keeping examination requirements well in view, the book is by no means sketchy, but indicates very clearly the significance of the progressive series of experiments described. Many of the experiments are suitable for performance by the pupils themselves. The illustrations are both numerous and good.

Tito Nenci. I. Bachi da Seta. 3a edizione con note e aggiunte di Francesco Nenci. Con 47 incisioni e 2 Tavole. Pp. xii + 300. (Milano: Hoepli, 1900.)

THIS is a compact little manual which seems to have first appeared in 1883, and has now arrived at its third edition. The portrait of Prof. T. Nenci forms the frontispiece, and the other plate illustrates the ventilation of a silkworm establishment. The text illustrations are good, some of them occupying a whole page. The book is divided into seven parts, dealing with the natural history of the silkworm; the "bacheria," or silkworm-breeding establishment; races and rearing; diseases of the silkworm; degeneracy and regeneration; outlay; properties of silk, &c.; and other silk-producing Lepidoptera. But the book is chiefly intended as a practical manual; and the last chapter gives little more than the names of a few of the best-known silk-producing Saturniidae, though the cocoons of two of these are illustrated. W. F. K.

Types of British Animals. By F. G. Aflalo. Pp. xx + 290. (London: Sands and Co., 1899.)

THIS well-illustrated and very readable addition to the "Library for Young Naturalists" is likely to become a favourite with boys. Technical terms are reduced to a minimum, though room has been found for necessary explanatory paragraphs. The first eight chapters describe types of British quadrupeds and whales, and are followed by eight chapters on birds. After single chapters on British reptiles and amphibians, with six on British fishes, invertebrate life is considered in the concluding six chapters. Spiders and insects are described by Mr. C. S. Colman. The familiar and chatty style which is adopted throughout will be sure to capture a boy's attention, and eventually set him observing for himself. We hope the author's appeal to his readers to burn their catapults may prove successful, but we have our doubts. The eight full-page plates and thirty-one illustrations by Mr. Caldwell not only add to the attractiveness of the volume, but will prove useful in enabling the reader to recognise living specimens.