

four parts, the first 94 pages being devoted to the description and uses of instruments, the next 224 pages to methods of field work, the next 58 pages to computation, and the remaining 57 pages to mapping and draughting; an arrangement admirably adapted to a clear presentation of the subject. The detail of these four sections is well worked out. For example, in part I., a series of diagrams shows all the types of transit verniers; the Berger top attachment is used to show the theory and operation of the solar compass; the measurement of angles by repetition is explained and the value insisted on; and the tape rod for reading elevations direct, is explained and commended. In part II., the usual methods of land surveying are explained, and many details are given which show the practical experience of the authors. The chapter on Topographical Surveying is particularly satisfactory. The chapter on Mining Surveying is written by Blamey Stevens, M.Sc., of Ellamar, Alaska, and the field and office methods of underground work are carefully explained. In the chapter on leveling, the advantage in accuracy of double rodged lines is carefully pointed out and in the chapter on city work, the simpler methods of running out and recording curves are shown. A brief description of methods of triangulation is also given. In part III., emphasis is laid on the accuracy of computations, on the significance of the number of digits employed and on the proper forms for computation. Models are given in details for land area determinations and for earth volume determinations and these form the chief part of this section. In part IV. are given many hints referring particularly to surveying draughting, such as the use of water colors for ready-made inks, the checks on field work made possible by a critical study of the plot, and methods of finishing and filing drawings.

The usual tables complete the volume, which is probably as satisfactory a text-book under present methods of technical school instruction in surveying as can be written.

H. N. OGDEN

CORNELL UNIVERSITY,
ITHACA, N. Y.

SCIENTIFIC JOURNALS AND ARTICLES

Bird-Lore for May-June opens with "A Sketch of the Thrushes of North America," by Jonathan Dwight, illustrated by a colored plate and maps of distribution. B. S. Bowditch furnishes an account of "The Rose-breasted Grosbeak"; and Emma E. Drew tells of "Some Bird Acquaintances," made while confined to an invalid chair on the veranda of an Adirondack cottage. A list of 140 species observed from such a restricted point of observation shows what may be done right at home. The Educational Leaflet, by Mabel Osgood Wright is devoted to "The Baltimore Oriole" and the section devoted to "The Audubon Societies" shows that, thanks to these same societies, laws for the protection of birds are gradually being enacted throughout the United States.

THE Bulletin of the Charleston Museum for May is mainly devoted to a "Synopsis of the Bird Records of the Natural History Society for the year 1906."

THE preparation of an index to the first twenty-five volumes of the *Astrophysical Journal* is now under consideration. If sufficient support is secured, the index will be issued during the autumn of 1907, at a price of \$1.50 or \$2.00.

SOCIETIES AND ACADEMIES

THE AMERICAN CHEMICAL SOCIETY. NEW YORK
SECTION

THE last regular meeting of the session of 1906-07 was held at the Chemists' Club, 108 West 55th Street, on June 7.

The following papers were presented:

F. D. DODGE: "Methyl Salicylate, Natural and Synthetic."

K. GEORGE FALK: "Ignition Temperatures of Mixtures containing Carbon Monoxide" and "Autoxidation of Organic Compounds: Review."

C. M. JOYCE,
Secretary