

BOOK REVIEWS

OPTICAL WORKSHOP PRINCIPLES. A translation of "LE TRAVAIL DES VERRES D'OPTIQUE DE PRÉCISION" by COL. CH. DÉVÉ, Hon. Dir. of the Institut d'Optique theorique et appliquée, Paris, transl. by THOS. L. TIPPELL; pp. 306+xiv, figs. 120, 14½×22 cm., cloth. Published by Adam Hilger Ltd., London, 1943, price \$6.00, obtainable in U.S.A. from the Jarrell-Ash Co., 165 Newbury St., Boston, Mass.

This book is the second substantial one devoted to optical workmanship sponsored by Hilger Ltd. in their liberal policy of promoting availability to the public of knowledge in this field. The first was Twyman's "Prism and Lens Making"—reviewed in the *Am. Mineralogist*, **28**, 400 (1943).

The French original of this second book has long been in use as a résumé of the technical instruction given to students in the trade school for working opticians of the Institut d'Optique and to the foremen and opticians who come to improve themselves at the Institut. It is not intended as a manual for beginners.

Among the subjects treated are Lenses, Abrasives, Tools, Surfacing, Mechanical Theory of Optical Working, Optical Testing, Crystal Shaping, Centering, Engraving, Metallization of Mirrors. There is considerable duplication with regard to the aforementioned book by Twyman of the subjects which are treated in the two books, but each subject presents a wide variety of aspects and the emphasis upon these aspects differs. The translation now submitted of the treatise by Col. Dévé thus constitutes a highly welcome further addition to the literature of the field.

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SOIL AND PLANT ANALYSIS by C. S. PIPER, 15×22 cm., pp. xiv and 368, 19 figs.

This represents a monograph from the Waite Agricultural Research Institute, University of Adelaide, South Australia. The original edition appeared in 1942 but the authorized photo reprint in U.S.A. by the Interscience Publishers, Inc., New York, appeared in 1944. Price \$4.50.

This publication from "the land down under" is an excellent laboratory manual for the modern quantitative analysis (physical and chemical) of soils and of the inorganic constituents of vegetable matter.

Its two main parts are sufficiently indicated by the title. The first section of 250 pages has fourteen chapters dealing with (1) the collection and preparation of soil samples (6 p.); (2) determination of hydrogen ion concentration, conductivity and water soluble salts (39 p.); (3) mechanical analysis (32 p.); (4) single value constants, such as water holding capacity, moisture equivalent, heat of wetting, etc. (31 p.); (5) soil color (4 p.); (6) preparation of standard solutions and indicators (10 p.); (7) calcium carbonate determination (8 p.); (8) the analysis of the hydrochloric acid extract (16 p.); (9) exchangeable ions and exchange capacity (42 p.); (10) nitrogen determination (4 p.); (11) nitrates, nitrites and ammonia (10 p.); (12) organic matter (16 p.); (13) free ferric oxide (8 p.); (14) separation and analysis of the clay fraction (11 p.).

The second part of 112 pages has four chapters on the collection and preparation of plant samples (6 p.); methods for the ashing of plant materials (17 p.); determination of the more common inorganic constituents (25 p.), and the determination of the trace-elements (60 p.). Selected references are given at the end of each chapter.

The various procedures are fully described and mostly preceded by a discussion of the rationale for the determination itself, together with the necessary precautions to be taken, if any. The methods are the latest that have been worked out mostly in Australia and the British Empire, so that they represent valuable adjuncts to those described in the "Official and Tentative Methods of Analysis of the (American) Association of Official Agricultural Chemists."

Although the manual is primarily destined for agricultural chemists and pedologists, nevertheless many chapters are considered well worth the attention of sedimentary mineralogists and petrologists.

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