PHOTOMICROGRAPHY IN THEORY AND PRACTICE, by CHARLES PATTEN SHILLABER. New York, John Wiley and Sons (1944). Pp. vii+773; figs. 291. Price $10.00.

The subject matter of this book is divided into eight chapters, with each chapter subdivided into sections for ready cross reference.

Chapter 1 discusses the mechanics of the microscope in a complete and understandable manner. All types of modern research and petrographic microscopes are described and illustrated.

Chapter 2 covers the large range of methods of lighting used with the microscope, together with photometric and other lamp data.

Chapter 3, extending over 137 pages, is devoted to a discussion of light waves and optical paths through various media and through a simple lens. This is followed by a detailed description and evaluation of microscope objectives together with their care and cleaning.

Chapter 4 deals with oculars and condensers. Dark-field methods are briefly explained for use with biological specimens and for photographing crystals. Also described are the correct condensers used in ultraviolet work and for demonstrating fluorescence.

Chapter 5 takes up the subject of optical filters with a discussion of their selection, use and care. The control of glare from the microscope and outside sources is extensively dealt with.

Chapter 6 is devoted to the camera and also to photosensitive materials and formulae. Simple vertical cameras as well as the larger and more expensive horizontal types are illustrated and briefly described. Comparison illustrations are used to show the effect of formulae on graininess in the film.

Chapter 7 deals with use and application in photography of various mounting media, stains, reagents and solvents. A 14 page table is provided giving the composition and use of some important etching agents used in metallography.

Chapter 8 presents in 47 pages, an analysis of practical photomicrographical problems. Many illustrations are used to show what may be accomplished in photographing difficult materials.

A glossary of optical terms used in Microscopy is appended. The index is very well organized.

The author states that the material is basic and that the book is largely a book of reference. The mineralogists who employ photography will find this book a valuable aid, written in a concise but complete style. Research workers and students who desire to improve their methods of making photomicrographs will find here a very stimulating book to add to their library.

A. E. WOODHEAD,
Dept. of Zoology,
University of Michigan

NEW MINERAL NAMES

Eckermannite

OLGE J. ADAMSON, Eckermannite, a new alkali amphibole: *Geol. För. Förh.*, **64**, 329–334 (1942); through *Chem. Zentr.* **1943**, I, 2078.

CHEMICAL PROPERTIES: Analysis gave SiO_2 56.45, TiO_2 0.39, Al_2O_3 5.47, Fe_2O_3 9.49, FeO 1.90, MnO 0.52, ZnO 0.67, MgO 9.43, CaO 0.35, Na_2O 11.30, K_2O 2.41, H_2O 0.33, F 2.69; sum $101.30-(O=F_2)$ $1.09=100.21\%$. This corresponds to $Na_4Mg_2AlFe(Si_4O_{11})_2(O, OH, F)_2$.

PHYSICAL AND OPTICAL PROPERTIES: The mineral is optically negative, n_{Na} (all $\pm .003$), $\alpha = 1.636$ (bluish-green), $\beta = 1.644$ (bright bluish-green), $\gamma = 1.649$ (pale yellowish-green), 2V about 74°. Extinction $X \wedge c = 25°$. G. = 3.16.

OCCURRENCE: The mineral occurs in alkalic rocks of the Norra Kärr region, southern Sweden, associated with feldspar, pectolite, aegirine, apatite, sphene and altered nepheline.

MICHAEL FLEISCHER.

Formanite

HARRY BERMAN AND CLIFFORD FRONDEL, *Dana's System of Mineralogy*, 7th Ed., Vol. **1**, pp. 757–763.

NAME: For Francis Gloster Forman, government geologist of Western Australia.

This name is given to the $YTaO_4$ end member of the fergusonite series. Material from Cooglegong, W. Australia, close to the end member in composition was analyzed by Simpson, *Proc. Australasian Assoc. Adv. Sci.*, **2**, 310 (1909). Other analyses show gradations to fergusonite, $YCbO_4$. Y is replaced in part by U, Th, Ce, Ca; Ta and Cb in part by Ti.

M.F.

Neodigenite

PAUL RAMDOHR, The minerals in the system Cu_2S–CuS: *Zeit. prakt. Geol.* **51**, 1–9 (1934); through *Chem. Zentr.*, 1943, I, 2387-2388; through *Chem. Abstracts*, **38**, 4500–4501 (1944).

This name is given to cubic Cu_9S_5. The original paper is not available and the abstract gives no reasons why the new name is to be preferred to the name digenite.

M.F.

DISCREDITED MINERALS

Katangite (= Chrysocolla)

V. BILLIET, The relations of chrysocolla, katangite, plancheite, bisbeeite, shattuckite and dioptase: *Verh. Kon. Vlaamsche Acad. Wetensch., Letteren schoone Kunsten België, Klasse Wetensch.*, **4**, No. 1, 58 pp. (1942); through *Chem. Zentr.*, **1943**, II, 13.

X-ray powder diffraction data indicate that dioptase ($CuSiO_3 \cdot H_2O$), shattuckite ($2CuSiO_3 \cdot H_2O$), plancheite ($3CuSiO_3 \cdot H_2O$) and chrysocolla ($CuSiO_3 \cdot 2H_2O$) are independent species. Katangite (see *Am. Mineral.*, **8**, 39) is a variety of chrysocolla. The status of bisbeeite is uncertain.

M. F.

Treanorite (= Allanite)

A. O. WOODFORD, Crestmore minerals: *Cal. Jour. Mines and Geology*, **39**, No. 3, 333–365 (1943). (Published in 1944.)

New data are given for treanorite, first described in *Am. Mineral.*, **26**, 351 (1941). Analysis by R. B. Ellestad gave SiO_2 34.30, Al_2O_3 22.18, Fe_2O_3 5.83, FeO 5.98, MgO 0.48, CaO 16.81, H_2O+ 1.46, H_2O- 0.04, TiO_2 0.19, Ce_2O_3 5.81, $(La, etc.)_2O_3$ 7.05; sum 100.13%. Other samples contained more, but most contained less rare earths. The molecular ratios do not lead easily to a simple and satisfactory formula. The optical properties are variable; the analyzed material had α about 1.749, $\beta = 1.7525$, $\gamma = 1.766+$. It is concluded by Woodford that treanorite must be considered a synonym of allanite, although further work may show it to be a new mineral.

DISCUSSION: Recalculation of the analysis leads to the ratios (Ca, Ce, La):Al, Fe^{III}, Fe^{II}, Mg):Si = 1.95:3.12:2.95, in fairly good agreement with the allanite formula.

M.F.