

REVIEWS

ELEMENTS OF OPTICAL MINERALOGY—AN INTRODUCTION TO MICROSCOPIC PETROGRAPHY. ALEXANDER N. WINCHELL. Third edition, revised and enlarged. PART 1. PRINCIPLES AND METHODS, IV+238 pages with 260 illustrations. John Wiley & Sons, Inc., *New York*, 1928. Price \$3.50.

The second edition of this popular text on optical mineralogy appeared in 1922. (Reviewed in *Am. Mineral.*, vol. 8, p. 36, 1923). In the third edition an additional chapter of 22 pages has been added on "Special Methods of Study." In this chapter the applications of the universal stage of Fedoroff, and the dispersion methods of immersion liquids for the accurate determination of the optical properties of crystallized material, are described in considerable detail.

In the single dispersion method by varying the temperature of the liquid its index can be made to coincide with that of the mineral. In the double dispersion method the index of the liquid is altered by a change in temperature and in the wave length of the light used. By the dispersion methods, under favorable conditions, it is possible to attain an accuracy of $\pm .001$. A complete discussion of these methods and the liquids used will be found on page 504 of this issue.

W. F. H.

ON THE MINERAL DUMORTIERITE. BULLETIN BY THE MACKAY SCHOOL OF MINES STAFF, UNIVERSITY OF NEVADA. *Bull.* 2, Vol. 22, 1928.

This bulletin of 47 pages contains short articles by four members of the School of Mines staff, each contributing that portion which falls in his special field of interest. The mineralogy of dumortierite including the bibliography (consisting of 53 titles) was compiled by O. R. Grawe; the geology of the deposit in Humboldt Queen Canyon, Pershing Co., Nevada, its origin and petrography were written by J. C. Jones; the mining of dumortierite is described by J. A. Carpenter; while W. S. Palmer recorded the dressing tests.

While dumortierite has been reported from seven States in the Union, the Humboldt Queen deposit is, thus far, the only commercial occurrence of this mineral in the world. Here it occurs in lenticular masses and in quartz veins, the former originating through the replacement of pre-existing lenses of andalusite formed in an earlier stage in the metamorphism of the rocks.

The use of this mineral, together with that of andalusite, in the manufacture of spark plug porcelain and special chemical porcelain ware is briefly described. This bulletin is the first of a series to be issued on "live subjects of interest to the industry."

W. F. H.