geologists, is attested by the fact that it has now reached its sixteenth edition. In doing so it has had several revisers, including as the latest Prof. Hurlbut of the Department of Mineralogy and Petrography of Harvard University.

The book is intended to appeal to a wider public than the relatively few who have access to laboratories equipped with elaborate optical and X-ray instruments upon which to rely for mineral identification. Thus the traditional methods of the mineralogist are fully treated; crystal morphology, the use of the blowpipe, the wet reagents and the dry reagents are all described. The present edition does, however, keep pace with modern developments by the inclusion of a brief discussion of X-ray technique in the excellent new introduction added by Prof. Hurlbut; and by the incorporation of a section on crystal chemistry. The silicates are classified on the structural basis developed by Bragg and Bragg, following in its details the arrangement of Berman. Among techniques, the emphasis is nevertheless laid upon the traditional rather than the contemporary, and one may perhaps ask whether the next edition might not be further enhanced by the addition of optical and X-ray data.

In the section on crystallography, the abandonment of the Dana crystallographic nomenclature is to be welcomed. Miller's indices are now given, certain forms being lettered. A table shows the 32 crystal classes and here Hermann–Mauguin symbols are stated in addition to the older symbols. Chapters on physical mineralogy and chemical mineralogy follow that on crystallography, and there is a section on descriptive mineralogy which deals with some 200 species, including all the common minerals. A few of the best-known localities are quoted in each case, including some non-American sources. The succeeding chapter on the uses of minerals is, perhaps naturally, mainly devoted to production in and for the United States. Determinative mineralogy is summed up in a series of tables in which the orders of classification are: (1) Lustre; (2) Hardness; (3) Streak; (4) Colour; (5) Specific gravity. There is a useful mineral index giving, in addition to page references, the composition, crystal system, specific gravity, and hardness of each mineral.

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Chemische Analyse der Gesteine und silikatischen Mineralien. By J. JAKOB. Pp. 180, with 10 figs. Basel: Birkhäuser. 1952. Price bound 18·70 Swiss francs.

The technical development in modern society has resulted in the disappearance of fine craftsmanship in many trades. A similar phenomenon can be observed in science, where new instruments and techniques can make routine business of measurements which once required the hands of a skilled and experienced scientist. The 'art' of crystal measurement with the single-circle goniometer passed in this fashion, changing into a comparatively simple job after the introduction of the two-circle instrument. Another example is the subject covered in Jakob's book, a publication in which an old master of chemical analysis makes available his decades of experience in this field.

This volume is the seventh of the chemical series in the excellent collection 'Lehrbücher und Monographien aus dem Gebiete der exakten Wissenschaften', published by Verlag Birkhäuser. It is definitely a 'Lehrbuch', and illustrates what a textbook on analytical methods should offer to beginning students. Though the author does not claim to describe more than the analysis of rocks and minerals, he furnishes his readers with a wealth of information on the general practice of analytical determinations, giving not only the 'know-how', but also the 'know-why' of every manipulation.

The methods are carefully selected to give untrained students a fair chance at dependable results. These techniques are explained in the main portion of the book, comprising 150 pages. A special section of 25 pages deals with the difficulties arising in the analysis of silicate minerals, which deviate considerably from the 'mean' composition of rocks; and a short appendix gives information on the preparation of colorimetric solutions and on the accuracy of rock analyses.

Chemists concerned with analyses of mineral- and rock-like substances can profit from the reading and use of Jakob's book. Even trained analysts might take advantage, for example, from the author's emphasis on the removal of adsorbed matter from colloidal precipitates by repeated dissolving and precipitation instead of by inadequate washing on the filter. Advanced workers will be disappointed if they look for modern determinations using complex-forming organic compounds, spectroscopes, polarographs or electronics; but they will be delighted to find classical methods, which once formed the sole source of quantitative data in chemistry, developed to a high degree of reliability and described with painstaking care.

The author, well-known in his country also as a writer on popular science, uses a clear and oftentimes kind-hearted language, thus giving foreign students a good opportunity to exercise their German. The make-up of the book matches the high standard of the other Birkhäuser volumes, although the volume unfortunately does lack an alphabetical subject index.

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Cristaloquimica. By JOSÉ LUIS AMORÓS. Pp. 147. Barcelona: Instituto Lucas Mallada. 1951.

This little book (150 pages) is intended by the author to serve as a manual for students of crystal chemistry and for workers in the field of crystal-structure determination. It contains chapters dealing adequately with the types of atomic bonding, the energy of ionic and other crystals, atomic radii, the principles of crystal structure, structural types, isomorphism, polymorphism, and the chemistry of solids. Each subject is treated accurately and succinctly, and numerous figures and tables add clarity and usefulness to the text. A bibliography is appended of works in which more thorough treatments of the various subjects can be found. This book should be very helpful to students of modern crystallography whose native tongue is Spanish.

Señor Amoros is to be congratulated upon his authorship of this little volume.

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