

AN OCCURRENCE OF WITHERITE IN THE ALTYN LIMESTONE AT MANY GLACIER, MONTANA

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During the field season of 1923 considerable witherite was observed filling cavities in the Altyn limestone of the Belt series in Glacier National Park. The chief exposures appear in the lower beds of the Altyn limestone immediately above the plane of the Lewis overthrust fault, along the gorge below Swiftcurrent Falls at Many Glacier. There are eighty to one hundred feet of the jointed platy limestone full of cavities containing the witherite.

The Altyn limestone in this locality is a highly siliceous calcium-magnesium-carbonate rock containing rounded to angular quartz and feldspar grains. The fresh surfaces are bluish-gray and very dense. The weathered surfaces are light buff to brown and dotted with etched grains of sand.

The witherite appears: (1) in flat masses one to six inches in thickness parallel to the bedding; (2) in thin lenses one to three inches thick and six to eighteen inches across; and (3) in very irregular lumps up to two feet in diameter. The mineral fills the cavities in pure translucent masses which are not associated with other minerals. The analysis shows 98.1% BaCO_3 , 0.14% of SiO_2 , and about one and a half percent of calcium and magnesium carbonates. The masses are colorless to pale buff and interlock in brush and fan shaped growths which extend from the walls of the openings towards the centers so as to nearly fill them. The contact with the limestone wall rock is very distinct. In many cases where the cavity fillings have been entirely removed the surface at the limestone contact is pitted with the impressions of the sand grains which lined the openings before the witherite was deposited. In no case were the sand grains observed included within the witherite. Evidently the openings were completed before the witherite began to fill them; replacement was not simultaneous with the solution of the wall rock.

BOOK REVIEWS

LEHRBUCH DER MINERALOGIE. B. GOSSNER, First Edition. Octavo, XII+404 pages, with 5 plates, including one of Agricola, and 465 text-figures. Fredrich Brandstetter, *Leipzig*, 1924.

In one sense this text is the successor of F. von Kobell's *Mineralogie*, which passed through seven editions, for it supersedes that well known work. In another

sense there is no relationship between it and the von Kobell textbook, except that the same firm published both books, for the present volume is entirely new.

The author has adopted an arrangement of the subject matter which is a marked departure from that ordinarily used during the past two decades, for geometrical crystallography and descriptive mineralogy receive but minor attention, speaking relatively. Furthermore, throughout the text an attempt is made to stress principles and processes and in this respect the treatment is somewhat similar to that used by Niggli in his recently published text (see review, *Am. Min.*, 1922, 7, 125-126).

The book consists essentially of two parts:—I, General Mineralogy and II, System, formation, and occurrence of natural substances.

Part I is divided into three large subdivisions, (a) Physical Mineralogy, (b) Chemical Mineralogy, and (c) what may be designated as Geological Mineralogy. A new classification of minerals has been adopted in Part II, as follows: (a) Silicates, (b) Oxides and Hydroxides, (c) Sulphides, (d) Elements, and (e) Salt-like compounds of the common acids.

There is ample evidence that the text has been written by one eminently competent to make a broad minded and up-to-date survey of the subject. The text figures are well drawn and the plates excellent. However, it is to be sincerely regretted that better paper could not have been used.

E. H. KRAUS.

MINÉRALOGIE DE MADAGASCAR. A. LACROIX. *Paris*. A. Challamel. Vol. III, vii+450 pages, 8 plates, 1 geological map in colors, and 28 figures. 1923.

The first two volumes of this work, published in 1922, were reviewed in the May, 1923 number of this journal. This, the last volume, continues part 4, devoted to LITHOLOGY, (pp. 1-90) and contains a discussion of the post-Lias volcanics and the sedimentary rocks. The alteration of the rocks to laterite and red earth is described in part 5 (pp. 91-149). Part 6 (pp. 150-294) treats of the mutual relationships of the rocks, and cites comparisons with similar rocks in other parts of the world. Appendices to all three volumes (pp. 295-334), a bibliography (pp. 335-350), and geographic and subject indices (pp. 351-431) conclude this volume.

E. F. H.

NEW MINERALS: DOUBTFUL SPECIES

CLASS: PHOSPHATES, ARSENATES, ETC.

"Kurskite"

VLADIMIR N. CHIRVINSKY: Materials for the knowledge of the natural productive forces of Russia. *Russian Academy Sciences*, 1919. Also *Mineral. Abst.*, 2, 53 (1923). Previously described but not named in *Neues Jahrb. Min.*, 61 (1911).

NAME: From the government of *Kursk*, Ukraine.

CHEMICAL PROPERTIES: A fluo- and carbonato-phosphate of calcium: $2\text{Ca}_3(\text{PO}_4)_2 \cdot \text{CaCO}_3 \cdot \text{CaF}_2$. Several partial analyses are given, one from Putiwl, *Kursk*, giving CaO 53.08, P_2O_5 32.49, CO_2 4.41, F 4.89.

PHYSICAL AND OPTICAL PROPERTIES: Structure, radial fibrous. Birefringence 0.008. Optically negative. Sp. Gr. 2.9.

OCCURRENCE: Widespread in the phosphorites of Russia and the Ukraine, as a cement, as a replacement of organic remains or as dark, almost black nodules.