

NOTES AND NEWS

A NEW LOCALITY FOR AUTUNITE

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Autunite has been reported previously from pegmatites at the following places in the State of Maine: Mt. Apatite, Auburn, Androscoggin County; the Nevel Mine, Hall's Ridge, Newry, Mt. Mica, Paris, Black Mountain, Rumford and Harndon Hill, Stoneham, all in Oxford County; and at Topsham in Sagadahoc County. This brief note is to point out a new locality for autunite at the Hooper's Ledge feldspar quarry, now long since abandoned, which is one and a half miles north-east of South Paris village and a mile south of Mt. Mica. On one of the dumps three fragments of very dark smoky quartz, about six by four by two centimeters, were found covered with the typical lemon yellow scales and crusts. Some alteration appears to have taken place. Held before the chamber of a Giger counter the response is lively, indicating the presence of abundant radio-active material. Under the mercury arc it fluoresces in the usual manner. This new occurrence of autunite with dark smoky quartz recalls similar association of these minerals at Gilsun, New Hampshire and elsewhere, and suggests interesting possibilities for further investigation.

NEW OCCURRENCE OF MILLERITE

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Millerite has been found recently at the Sullivan Trail Coal Co. anthracite mine at West Pittston, Pennsylvania. The mineral occurs as radiating tufted groups of very slender fibers in small spaces between crystals of ankerite or quartz. Although fairly abundant, the individual groups are small, varying from $1/16$ to $\frac{1}{2}$ inch in length, depending on the free space available. The amount of nickel sulfide carried into such spaces seems to have varied greatly as the fibers in a single group range in number from five or six widely separated ones to closely packed bunches of numerous individuals. Rarely a tuft of short fibers is seen branching out of the tip of a longer single one. The color is pale brass yellow, darkening slightly on exposure, and occasionally in unexposed specimens, developing a greenish gray tarnish.

The quartz and ankerite crystals upon which the millerite occurs are found partially filling vugs in the black shales of the coal measures. Specimens found on the dumps seldom show mineralized surfaces more than 6 or 8 inches square. Generally the vug is almost normal to the

schistosity of the rock and is coated on both faces with a layer of ankerite rhombs, often slightly curved. The wider vugs have more or less crystallized quartz in the openings. Where the quartz extends across the hollow, it often shows a series of roughly parallel fractures in one direction which appear to have been produced by pressure due to rock movements subsequent to its deposition, and do not seem related to any crystallographic direction.

Millerite occurs in spaces between the ankerite or quartz crystals, or is found on quartz adjacent to ankerite. As no instances of millerite penetrating either of the two minerals have been observed, the order of deposition is:—ankerite, quartz and millerite. Occasionally a few small crystals of sphalerite also occur on the ankerite.

So far as the author knows, no occurrence of millerite in the Wyoming Valley coal field has been recorded. Gordon¹ mentions a questionable occurrence of the mineral with quartz in siderite, presumably at a coal mine in Scranton, Pa., some nine miles east of the new locality. Since his book represents a survey of the literature on Pennsylvania minerals prior to 1922, it seems reasonable to suppose that its occurrence at West Pittston would have been included by him, had the mineral been discovered. Moreover, until four or five years ago the mine in question had not been worked for a long time. As the author visited it repeatedly in 1936 without finding any millerite, there seems little doubt but that the occurrence here noted is a new one.

¹ Gordon, S. G., *The Mineralogy of Pennsylvania*, Special Publication No. 1 of The Philadelphia Academy of Natural Sciences.

BOOK REVIEW

DAS MAGMA UND SEINE PRODUKTE, I TEIL:PHYSIKALISCH-CHEMISCHE GRUNDLAGEN. PAUL NIGGLI, Akademische Verlagsgesellschaft m.b.H., Leipzig, 1937. 379 pp., 276 figures. Price, RM 32.

This book is the first volume of what is essentially a second edition of Niggli's earlier book, "Die leichtflüchtigen Bestandteile im Magma." The other volume will bear the subtitle, "Magmatische Gesteine und Minerallagerstätten."

The first volume is concerned entirely with physico-chemical principles and a review of the experimental work that has been done. It is of wider scope than the corresponding part of the first edition, which dealt entirely with systems containing both non-volatile and volatile components. The new edition has a considerable section (110 pages) dealing with the construction and interpretation of diagrams of anhydrous systems, using the published diagrams of such systems as examples. At the end of the text the data for the fundamental ternary systems are given in tabular form.

The outline of the section dealing with systems with components of different volatility has been taken bodily from the first edition, but the text has been revised slightly and