

tact twins on *a*, the common swallow-tail type, are present among them. A few crystals are flattened parallel to pyramid *l*, others parallel to the pinacoid *b*. Aggregates, irregularly intergrown, are numerous.

The crystals of glauberite and of gypsum occurred together and were lying loose in a cavity roughly 1×1 meter in size, which was in the solid basalt, about 2 meters below the top of the quarry wall. There was a quantity of brown dirt with the crystals in the cavity which had evidently been derived from the decomposition of the basalt.

At West Paterson there are, besides the original minerals which were developed at the time of the Triassic lava flow, a number of other minerals which have been formed, redissolved and formed again in new combinations by the circulation of underground water during the long period since the igneous activity occurred. Hence, pseudomorphs and replacements are often observed, as well as abundant negative crystal cavities which occur in a number of different minerals. If all of the mineral combinations of the West Paterson locality were fully known, it would undoubtedly be found that practically every mineral present exists in nearly every possible relation to every other mineral of the locality. Thus glauberite and gypsum crystals have been formed and redissolved a great many times, either to reappear in different mineral combinations, or simply to be formed again.

It is the writer's conviction that the crystals of glauberite and gypsum, which are here described, have been formed at some quite recent time, probably from water standing in the cavity during the glacial period (Pleistocene), when this hill of basalt was completely covered by slowly moving ice, and the level of the underground water was so high that the cavity was, for a considerable period, full of water. Since the melting of the glacial ice the cavity has become dry, but the crystals have remained to the present day.

Acknowledgment is hereby made to Mr. J. G. Manchester for the photograph which accompanies this article.

TWISTED MILLERITE CRYSTALS

A. C. HAWKINS

In the anthracite coal basin at Nanticoke, Pa., the Mills coal vein is cut by narrow stringers of white quartz. In cavities which are present in this quartz, occasional aggregates of millerite crystals

are found. Some of the aggregates of millerite are radiated, while others are irregular, a mass of brilliant acicular, hair-like prisms, the longest of which measures about 2 cm.

Among the most slender of the millerite crystals there are a number which show a helical twist; they appear like ribbons which have been twisted from both ends. The twist is either right or left handed in equal numbers of the crystals.

It does not appear that the twisting can have been the result of mechanical causes, since the small twisted crystals are interspersed with thicker prisms which are not twisted. The phenomenon must have been caused by a natural tendency in the growth of the crystal. Professor Newhouse of Mass. Institute of Technology has informed the writer that millerite crystals have been found in quartz veins in a number of other coal mines, and that quite frequently they are twisted. A similar twisted condition has been noted in stibnite.

Thanks are due to Mr. T. J. Arnott of the Glen Alden Coal Company for submitting the specimens.

¹ W. T. Schaller, The Crystal Cavities of the New Jersey Zeolite Region *U.S.G.S. Bull.* 832, 1932.

Those interested in forming a Society for Research on Meteorites, whose purpose shall be to promote the discovery, collection, investigation and preservation of meteorites, and to advance the science of meteorites and related sciences through the increase and diffusion of knowledge concerning meteorites, are asked to write to the acting secretary of the preliminary organization, Mr. H. H. Nininger, Director, The Nininger Laboratory, 1955 Fairfax St., Denver, Colorado, or to communicate with Professor Frederick C. Leonard, acting president, Dept. of Astronomy, University of California, Los Angeles, California.

Dr. Friedrich Rinne, professor emeritus of mineralogy and petrography at the University of Leipzig and honorary life fellow of the Mineralogical Society of America, died suddenly on March 12, 1933, three days prior to his seventieth birthday.

Dr. Waldemar Lindgren, Rogers professor of economic geology and head of the department of geology at the Massachusetts Institute of Technology, will retire at the end of the present academic year.

Dr. Victor Goldschmidt of Heidelberg, Germany, died on the 8th day of May in Salzburg, Austria.

At the nineteenth meeting of the Mineralogical Society of Southern California, held at the Pasadena Public Library, Dr. Ian Campbell addressed the society on the

subject "Minerals, and their Effect on Men and Nations." The tenth field trip was held at the Jensen Quarry of the Riverside Cement Co.

At the twentieth meeting, Dr. John H. Maxson gave an illustrated lecture on "The Origin and Use of Chrome-bearing Minerals." The eleventh field trip included visits to the mines at Borate, Calico and Barstow, and to the vertebrate fossil beds of the region.

At the twenty-first meeting, held on May 8, Mr. W. B. Phelps spoke on the subject "Gold, its Occurrence, Mining and Recovery."

The Rocks and Minerals Association has announced its first National Outing which will be held on July 9. It is hoped that on this day 20 field trips throughout United States and Canada will be taken under divisional directors who will conduct the outings in their respective districts. A cordial invitation is extended to fellows and members of the Mineralogical Society of America. Further information, if desired, may be obtained from Mr. Fred W. Schmeltz, 2510 Maclay Ave., New York City.

Corrections

In the article by George Tunell, "Determination of the space-lattice of a triclinic mineral by means of the Weissenberg goniometer," *American Mineralogist*, vol. 18, pp. 181-186, 1933, on page 185, sixth line from the bottom of the page, read "that" in place of "as to satisfy the law of Bravais as stated by Friedel, according to which." Also on page 185 delete footnote 8.

In the paper by Joseph Hyde Pratt on "Gems and gem minerals of North Carolina," this statement is made in the last sentence on page 149: "This diamond is in the American Museum." It should read: "A model of this diamond is in the American Museum."