

1950

(WITH RAFAEL PÉREZ SILICEO) Geología del distrito mercurial de Huahuaxtla, estado de Guerrero. *Mexico Inst. Nac. Inv. Rec. Miner. Bol.*, **27**, 30 p.

1952

Geology of the quicksilver deposits of Canoas, Zacatecas, Mexico. *U. S. Geol. Surv. Bull.*, **975-B**, 47-85.

1963

(AND M. R. KLEPPER, W. C. OVERSTREET, AND R. D. SAMPLE) *Mineral Resources of Korea*. 10 vols., U. S. Operations Mission, Korea, Industry and Mining Division, Mining Branch, in cooperation with Geological Survey, Republic of Korea, Seoul, 1963.

1965

On lantern slides: *Geol. Soc. Amer. Bull.*, **76**, 1081.

THE AMERICAN MINERALOGIST, VOL. 54, MARCH-APRIL, 1969

MEMORIAL OF ALFRED CARY HAWKINS

June 15, 1887-March 30, 1954

GEORGE T. FAUST, *U. S. Geological Survey,*
Washington, D. C. 20242.

Alfred Cary Hawkins was born in the village of Sewaren, Middlesex County, New Jersey on June 15, 1887. He attended Columbia University and graduated with a Bachelor of Science degree in Geology in 1909. While there, he held an undergraduate scholarship for the academic term of 1908 and served as a teaching assistant in the summer session in 1910. Princeton University then awarded him an Assistantship in the Geology Department for the academic sessions of 1910-1912. At Princeton he began his studies on the Triassic sedimentary rocks of New Jersey, a subject he pursued for most of his professional life. For his Master of Arts degree, conferred by Princeton University in 1912, he submitted a thesis entitled: "The Lockatong Formation of New Jersey and Pennsylvania." Judging from his published papers for this period, Hawkins must have spent a considerable time in active fieldwork in the Newark basin.

An appointment as an Instructor in Geology at Brown University took him to Providence, Rhode Island, in the fall of 1912 where, in addition to his teaching duties, he pursued graduate work for the doctorate. He immediately entered into field studies in Rhode Island with his usual enthusiasm, and in 1916 he was granted the Ph.D. degree for a thesis on "The Geology of a Portion of Rhode Island."

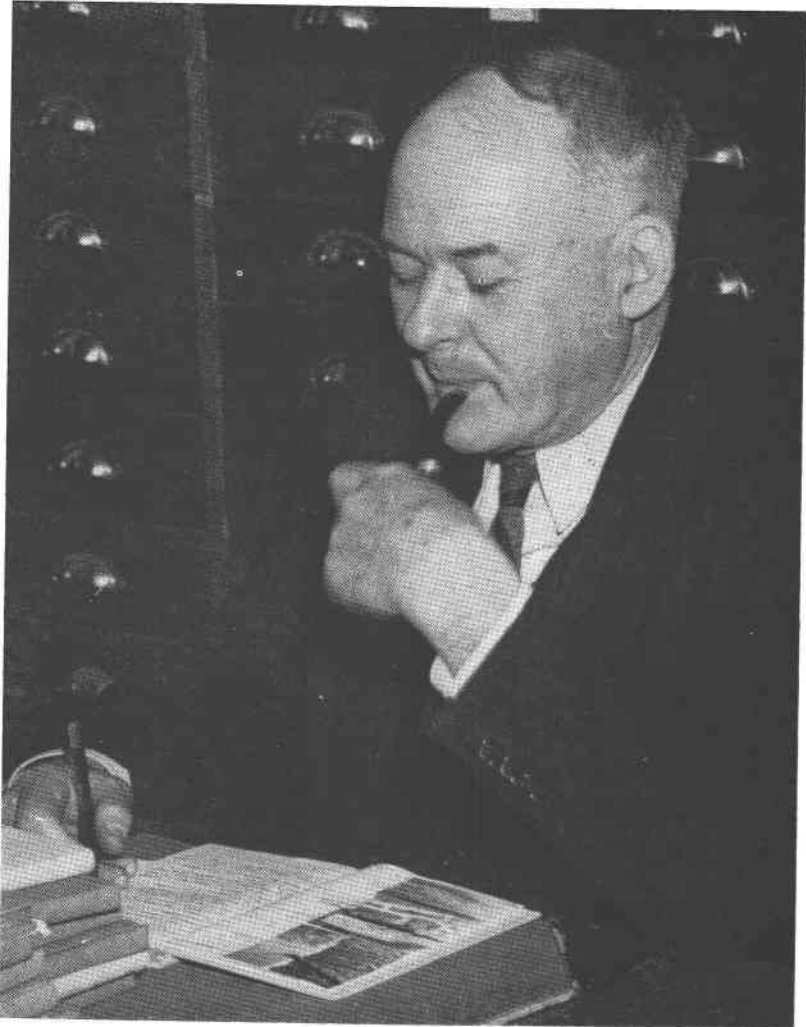
The impact of World War I was beginning to affect life in the U. S.

about this time, and many young men were faced with a major decision. Dr. Hawkins was one of these. He served as a consulting geologist, principally concerned with oil, for a short time after his studies at Brown University were completed, and then having made up his mind, he enlisted in the Signal Corps of the United States Army where he remained on duty until 1919.

At the war's end Dr. Hawkins found employment as a crystallographer with E. I. duPont de Nemours & Company, a post he retained until 1921. His strong interest in the field aspects of mineralogy and geology, however, led him to abandon his laboratory position and to accept an offer from the Wards Natural Science Establishment at Rochester, New York, coupled with a part-time position as Curator of the Geological Museum at the University of Rochester. Here, his expert knowledge of collecting mineralogical and geological specimens was put to real use. His own field background influenced the selection of specimens, as can be seen in the older catalogues of Wards, where minerals, rocks, and soils from New Jersey and contiguous areas were listed. Some of these specimens proved so popular that they are still listed today. Dr. Hawkins knew how to judge specimens from the standpoint of the college professor and the collector. He was also very competent in developing raw specimens into museum-quality specimens.

Satisfying as this employment was, he still yearned to teach and do detailed fieldwork. His opportunity came in 1923 when the University of Rochester offered him a full-time position in the Geology Department where he remained through 1926. The Rutgers University, in his native state of New Jersey, invited him to teach as an Acting Associate Professor in 1927, and he welcomed the possibility of returning to the area of his principal field of study. In 1928, Rutgers University confirmed his appointment. He taught at Rutgers until 1933, when the "Great Depression" necessitated a reduction in the faculty; Professor Hawkins was one of those not reappointed. He became consulting geologist and worked on clays, sands, and other deposits of the Coastal Plain province of New Jersey for ceramic, chemical, and engineering corporations. It was during this period that he became associated with Professor George H. Brown of the Department of Ceramics at Rutgers University in studies of the clay deposits of New Jersey. In 1935, he was appointed an Assistant Soil Scientist with the Soil Conservation Service, U. S. Department of Agriculture, and in 1938 he was reclassified to the position of Assistant Soil Technologist. He remained in the U. S. Department of Agriculture through 1943.

In the period 1938-1943, Dr. Hawkins held an appointment as a part-time Assistant Professor of Geology at the City College of New York and



Alfred Cary Hawkins

taught during the summer sessions. In 1943 he was appointed to the position of Microscopist at the Lucius Pitkin, Inc., Company of New York City. He continued in full-time capacity with Lucius Pitkin, Inc., until 1946 when he changed his association with the company to a part-time consultant in order to engage in a geologic consulting practice. In 1944 he was appointed an adjunct Professor of Geology at the Polytechnic Institute of Brooklyn, New York, where he taught classes at night. In 1946, he taught both day and night sessions.

Doctor Hawkins was an avid collector and many schools and museums benefited from his services and his generosity. He was actively collecting almost up to the time of his death. He also was continuously engaged in the study of the geology of New Jersey, being particularly concerned with the Triassic sedimentary rocks and with the sediments of the Coastal Plain province.

Dr. Hawkins was also interested in gem minerals and gems, and he conducted review classes for the Guilds of the American Gem Society at Newark and New York during the period when Robert N. Shipley was the Director of the Gemological Institute of America.

Dr. Hawkin's love of mineralogy and geology was infectious, and his students and many of his associates found him very stimulating. He was an early advocate of the use of index of refraction liquids for the identification of mineral fragments, and his colleagues prevailed upon him to prepare and distribute sets of immersion liquids known popularly as the "Hawkins Set." The ready availability of these sets of liquids did much to promote the use of this technique. Determinative mineralogy was his forte; this included not only physical properties but also chemical properties. In 1931, the well-known textbook *A Manual of Determinative Mineralogy* by J. Volney Lewis was revised by Dr. Hawkins. In 1934 he published, privately, a supplement to this work. When the eighth reprinting of this book was made in 1949, the supplement (23 pages) was included with the text. *The Book of Minerals*, an introduction to mineralogy by Hawkins, appeared in 1935. Samuel G. Gordon, formerly Curator of Minerals in the Academy of Natural Sciences of Philadelphia, was impressed by Hawkins' approach to the teaching of mineralogy, and he personally selected the specimens to be photographed for use in this book.

Dr. Hawkins was greatly attached to his family and his wife who predeceased him by several years. He died on March 30, 1954, and was buried in Plainfield, New Jersey. Their daughter, Barbara, now Mrs. Dustin, survives them. As an individual, Hawkins was warm-hearted, cheerful, and sympathetic to those less fortunate than himself. Always cordial in his dealings with others, he maintained the simple dignity of a cultured gentleman.

My own association with Hawkins began in 1935 when I went to

Rutgers University as an Assistant Professor to teach crystallography, crystal chemistry, and silicate melt equilibria. Hawkins' background in chemistry was strongly slanted toward analytical techniques, and he accepted my courses with the tolerance born of resignation to changing ideas. At the University of Michigan, I became interested in the Watchung Lava Flows of New Jersey, for they were one of the battlegrounds of the petrologic debate between Clarence N. Fenner and Norman L. Bowen of the Geophysical Laboratory. At Rutgers University, I continued this interest and made preliminary calculations of the rate of cooling of the flows. When I told Dr. Hawkins of my desire to study these Watchung Lava Flows, he was delighted to show me localities in the Watchung Mountains where I could test my ideas. After I left Rutgers University, he corresponded with me about his own field experiences in the eastern United States.

For much of the information contained in this memorial I am indebted directly or indirectly to many friends of Dr. Hawkins and to some of my colleagues, including Professor James H. C. Martens of Rutgers University; Dr. W. G. Valentine and Miss E. Lynn Savage of Brooklyn College, New York City; Dr. Robert H. Bell of Lucius Pitkin, Inc., New York City; Professor Kurt E. Lowe of the City College of New York; and to Miss Jean Cowen, Librarian of the "Home News" of New Brunswick, New Jersey. Dr. Kemble E. Widmer, State Geologist of New Jersey and Mr. Robert M. Shipley, formerly Director of the Gemological Society of America verified some points. The photograph was taken by Professor D. T. O'Connell of the City College of New York, who kindly supplied the negative for reproduction in this memorial. To all these colleagues I express my thanks.

Dr. Hawkins was a member of the following societies: Fellow Mineralogical Society of America, Fellow American Association of Science, Member Geological Society of America, Member of the Society of Sigma Xi, Honorary Member of Alpha Chi Rho Fraternity, Member of the American Geophysical Union, Member of the American Meteorological Society, Member of the New York Academy of Sciences, Member of the New York Mineralogical Club, Life Member of the National Speleological Society, Honorary Life Member of New Jersey Mineralogical Society. (He was also a founding member.)

BIBLIOGRAPHY OF ALFRED C. HAWKINS

1910

Diverse effects of glaciation on the Cretaceous clays. *Amer. J. Sci.*, ser. 4, **30**, 350-353.

1913

Some interesting mineral occurrences at Princeton, New Jersey. *Amer. J. Sci.*, ser. 4, **35**, 446-450.

1914

Locketong formation of the Triassic of New Jersey and Pennsylvania. *N. Y. Acad. Sci., Ann.*, **23**, 145-176.

1915

Datolite from North Plainfield, Somerset County, New Jersey. *Amer. J. Sci., ser. 4*, **39**, 473-474.

(AND CHARLES W. BROWN) Basic rocks of Rhode Island; their correlation and relationships. [abstr.] *Geol. Soc. Amer. Bull.*, **26**, 92-93.

1916

The occurrence of lamellar calcite in Rhode Island. *Amer. Mineral.*, **1**, 3-4.

1917

Developing crystallized mineral specimens. *Amer. Mineral.*, **2**, 101-102.

1918

Notes on the geology of Rhode Island. *Amer. J. Sci., ser. 4*, **46**, 437-472.

Quartz crystals from Centerdale, Rhode Island. *Amer. Mineral.*, **3**, 1-2.

(AND EDGAR T. WHERRY). Famous mineral localities; 4. The Joplin district. *Amer. Mineral.*, **3**, 36-37.

Fibrous quartz from Rhode Island. *Amer. Mineral.*, **3**, 149-151.

Minerals of the saline domes of the Texas-Louisiana Coastal Plain. *Amer. Mineral.*, **3**, 189-192.

1921

Two new forms on quartz from Pikes Peak. *Amer. Mineral.*, **6** (no. 12), 169.

1922

Crystallography of three minerals from Rhode Island. *Amer. Mineral.*, **7** (no. 2), 27-29.

1924

(AND EARL V. SHANNON), Canbyite, a new mineral. *Amer. Mineral.*, **9** (no. 1), 1-5.

Alternative interpretations of some crystalline schists in southeastern Pennsylvania. *Amer. J. Sci., ser. 5*, **7**, 355-364.

1925

Fluorite from Rochester, New York. *Amer. Mineral.*, **10** (no. 2), 34-36.

1926

Directional factors in radio crystal detectors. *Amer. Mineral.*, **11** (no. 6), 164-165.

Notes on pyrite and celestite from Rochester, New York. *Amer. Mineral.*, **11** (no. 6), 165.

(AND JOHN S. FRANKENFIELD), Pyrite from Cornwall, Pennsylvania. *Amer. Mineral.*, **11** (no. 9), 252-253.

1928

Halite and glauberite cavities and included minerals from central New Jersey. *Amer. Mineral.*, **13** (no. 6), 238-239.

Casts and pseudomorphs of halite and glauberite from the Triassic of New Jersey. (abstr.). *Geol. Soc. Amer. Bull.*, **39**, 167. [Also in *Pan-Amer. Geol.*, **49**, 75.]

Halite and glauberite cavities in the Triassic rocks of central New Jersey. *Amer. J. Sci.*, ser. 5, 16, 361-362.

Structure favors oil and gas production in New Jersey. *Oil Weekly*, 50 (no. 9), 54, 56.

1929

New and interesting minerals from central New Jersey. *Amer. Mineral.*, 14 (no. 8), 309-311.

1930

Intrusive dikes in basalt from New Jersey. (abstr.). *Geol. Soc. Amer. Bull.*, 41 (no. 1), 120. [Also in *Pan-Amer. Geol.*, 53, 148.]

1931

AND J. VOLNEY LEWIS *A Manual of Determinative Mineralogy*. 4th Ed. John Wiley & Sons, Inc., New York.

1933

(AND A. STOLLMAN AND L. A. BUCK), Microscopic minerals of Middlesex County, New Jersey. *Amer. Mineral.*, 18 (no. 4), 160-166.

Glauberite crystals from West Paterson, New Jersey. *Amer. Mineral.*, 18 (no. 6), 273-274.

Twisted millerite crystals. *Amer. Mineral.*, 18 (no. 6), 274-275.

(AND HERBERT P. WHITLOCK), Minerals of the trap-rock quarries of Paterson, New Jersey. *16th Int. Geol. Cong. U.S., 1933, Guidebk*, 9, 128-139.

1935

Distribution of the heavy minerals in the clays of Middlesex County, N. J., *Amer. Mineral.*, 20, (no. 5), 334-353.

(AND EDWARD W. BERRY), Flora of the Pensauken formation in New Jersey. *Geol. Soc. Amer. Bull.*, 46, (no. 2), 245-252.

The Book of Minerals. John Wiley & Sons, Inc., New York.

1936

Calcite twins from North Plainfield, N. J., *Amer. Mineral.*, 21, 809-811.

1938

Twinning in glauberite: *Amer. Mineral.*, 23, 170.

1940

Major faulting in the Triassic of New Jersey. (abstr.). *Geol. Soc. Amer. Bull.*, 51 (no. 12, pt. 2), 1994-1995.

1942

Fold structure in the Pre-Cambrian complex of the Blue Ridge in Carroll and Grayson Counties, Virginia. (abstr.). *Va. J. Sci.*, 3 (no. 6), 247.

1949

Distribution of pebbles in a glacial outwash plain: *New York Acad. Sci. Trans.*, ser. 2, 12, no. 1, p. 2-3.

In addition to the above list of publications, Doctor Hawkins was a frequent contributor of mineralogical notes to the collectors' magazines *Rocks and Minerals* during the period 1936 through 1948 and *The Mineralogist* from 1941 through 1948.