MEMORIAL OF JOHN ELIOT WOLFF

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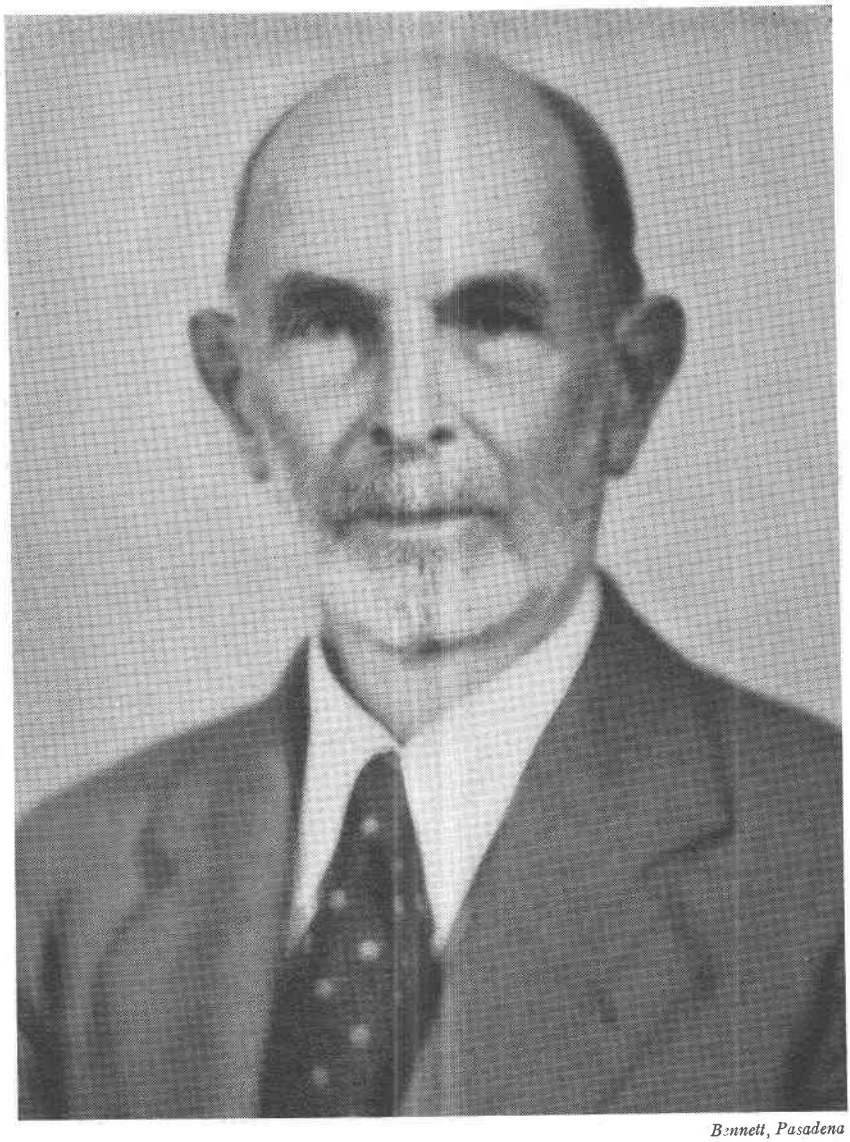
John Eliot Wolff, Professor of Petrography and Mineralogy Emeritus at Harvard University and past president of the Mineralogical Society of America, was born in Montreal, Canada, November 21, 1857. He died of heart failure in the Mojave desert, near Lancaster, California, on August 7, 1940.

Wolff had a life-long association with Harvard University. He graduated there with the class of 1879 and took his A.M. and Ph.D degrees there also, the latter in 1889. He taught there as Instructor, Assistant Professor, and Professor from 1887 to 1923. In a memorial to Wolff to be published in the *Proceedings of the Geological Society of America* with full bibliography I have told of the various activities in the geological field which filled his early life, aside from teaching. Here I will confine myself to an account of his work in the special field of mineralogy.

In 1894 there was inaugurated at Harvard a new Department of Mineralogy and Petrography with Wolff at its head. Up to that time such instruction as was given at Harvard in mineralogy was offered by Professor J. P. Cooke in the Department of Chemistry. Wolff had begun teaching petrography in 1887 as a member of the geological staff. Professor Cooke, shortly before his death in 1894, had secured funds for the erection of a section of the Museum of Natural History and had installed there the mineral collection, in which he had long had a deep interest. Wolff became Curator of this Museum when the new Department was formed, and thenceforth devoted a large part of his time to its care and improvement. He was teaching both petrography and mineralogy when I joined the staff late in the year 1895. The equipment for mineralogical instruction was inadequate. Except for a small teaching collection of minerals, everything that the Museum possessed was in the public exhibition cases, where there was a great deal of duplication. It was the writer's first task to rearrange and concentrate the specimens on exhibition, and the duplicates thus removed formed the beginning of a research collection. After a few years I took over all the mineralogy instruction except that in optical crystallography, which Wolff continued to teach together with petrography. There were but small funds with which to purchase either minerals or equipment, and Professor Wolff gave generously from his private means to increase the collections and to develop the laboratory for research. In 1904 he purchased the entire stock of rocks and minerals of George Frazer of Medford, Massachusetts. I recall the scene when, returning from an absence, I found about ten tons of



Bennett, Pasadena

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material filling the basement floor—piles of rock specimens trimmed and untrimmed and miscellaneous cases made from old boxes filled with mineral specimens. This purchase gave the elementary classes in mineralogy a supply of splendid material for study which even today is not exhausted. The rocks went into the study trays of elementary geology.

Wolff also experimented with lighting the Museum and laboratories more adequately. At his own expense he installed Nernst lamps, then the best form of incandescent light, which served their purpose admirably for many years. He equipped a chemical laboratory for quantitative analysis, and there made many rock and mineral analyses.

In 1900 Wolff spent a year of sabbatical leave in Germany, working chiefly in the chemical laboratory of Professor Groth in Munich. He returned with a huge supply of the latest chemical apparatus and with cases of fine minerals for the Museum. All of these gifts and many others were made without display, his annual reports to the President of the University simply reporting them as from an anonymous donor or from a friend of the Museum.

Professor Wolff introduced me to the study of the Franklin Furnace minerals while he was at work on the Folio of that region for the U. S. Geological Survey. He found there and described the new mineral species hardystonite, which proved to be an important constituent of the ore. He also analyzed and described zinc-schefferite from the same locality. He analyzed the purple apatite of Auburn, Maine, in 1902 and a new chlorite from Wyoming in 1912. A considerable part of his chemical and optical research was devoted to the minerals of the Crazy Mt. rocks. This work continued after his retirement, so far as regards optical investigation, in the private laboratory which he set up in his Pasadena home. His final summary of this life work was presented informally as his Presidential address to the Mineralogical Society of America in 1934. It was published in 1938 in the *Bulletin of the Geological Society of America*, his last published paper.

The rock type *theralite* was named by Rosenbusch from specimens Wolff took to Heidelberg in 1880.

Professor Wolff's most important contribution to the development of the Department of Mineralogy and Petrography at Harvard was in securing the Holden endowment. Albert F. Holden, who graduated in 1888, was a very successful mining engineer. Early in his professional career he began to collect the minerals found in his mines and ultimately accumulated an important collection. Holden intended his minerals to go to Harvard and therefore kept in close touch with Wolff in order that his collection might supplement rather than duplicate the Harvard cabinet. When in 1913 Holden realized that his career was destined to come to an

untimely end through an incurable disease, he conferred with Wolff as to the form and wording of the munificent bequest with which he had determined to endow the Harvard Mineralogical Museum. He died before the end of the year, and his minerals came at once to the university. Professor Wolff, during the next few years, spent all his free time incorporating into the exhibition cases the more striking specimens from Holden's collection.

It was not until nine years after Holden's death that the trustees of his estate were able to turn over to the university the endowment fund. When it had been received in 1922, Wolff decided that the event marked a proper termination of his active service to the Museum and the Department of Mineralogy and Petrography. He, therefore, retired at commencement, 1923, and left to the writer the acceptable task of carrying out the intent of Mr. Holden, to raise the Harvard Mineralogical Museum to an equality with the best, a task made possible by the generous funds provided. Wolff also gave his own considerable estate, subject to a life annuity, to the University in the form of the John E. and Philip Wolff Fund, the income of which, after his death, was to be devoted to the growth and use of the collection to which he had devoted so large a part of his life.

Upon his retirement in 1923 Professor Wolff disposed of his property in the east and removed to Pasadena, California. Here, in a charming home, he spent the remainder of his years. At first he had the companionship of an older brother and his wife, but they died after a few years and thenceforward he lived alone. He continued his studies of the Crazy Mt. rocks and minerals, but during the cooler winter months spent much time on trips to Death Valley and other parts of the desert regions of southeastern California. His car was equipped for camping and he often went alone for short periods of life in the open. He continued these trips even after advancing age, failing eyesight and weakened heart made it, in the eyes of his friends, seem most unwise. And so it proved to be. On August 7 he went alone to spend the night at a granite knob known as Hivista, 25 miles east of Lancaster in the Mojave desert. He did not return the next day and was not found until five days later. Hoyt S. Gale, an old student under Wolff and a devoted friend, when he learned the place for which Wolff had started, remembered having been there with him two years before. He led the Sheriff's car to the spot where they found Wolff dead in his car. The car was trapped in a sandy spot near the road, and it was evident that the effort Wolff had made to clear the wheels had overtaxed his heart. He had managed to get back into the car before the end came. But it does not appear that Wolff suffered or that he lingered long. After all, he died doing what he liked best to do.

We may feel that Wolff made no very notable contribution to the subjects which occupied his long life. But his many students remember his sound teaching, his kind counsel, his gentleness; and his influence will live long by reason of the broad and firm foundation which he constructed for the Harvard Department of Mineralogy and Petrography which he established. He lived long enough to know that his work would long survive him.