

## Memorial of Takeo Watanabe June 23, 1907–December 18, 1986

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Takeo Watanabe, life fellow of the Mineralogical Society of America, Professor Emeritus at the University of Tokyo, passed away on December 18, 1986, of a sudden heart attack at his home, 3-30-4, Higashi-Oizumi, Nerima, Tokyo.

He was born in Tokyo on June 23, 1907, as the first son of Hisashi and Taka Watanabe. After his entrance to the Geological Institute, Imperial University of Tokyo, his lifetime was entirely devoted to research and educational works in the fields of economic geology and mineralogy. He graduated in 1931, submitting a thesis titled "Geology and ore deposits of the Suan Mining District," and was soon appointed the assistant in the Department of Geology and Mineralogy, Hokkaido Imperial University. From 1936, he stayed at the Mineralogical Institute in Berlin under the professorship of Dr. Paul Ramdohr, where he began to study an unknown mineral from Hol Kol, one of the ore deposits in Suan, North Korea. With the aid of Dr. Hugo Strunz, the study was successfully concluded in 1939 by the description of a new mineral, kotoite ( $Mg_3(BO_3)_2$ ). From this discovery he could elucidate the genesis of this mineral as the product of boron metasomatism of partially dissociated dolomite after thermal metamorphism due to granitic intrusion. This was also the framework of his doctor thesis in 1943, leading to the prediction of the occurrence of kotoite in similar dolomite-granite contacts to Hol Kol and, furthermore, of that of another new mineral, the Mn analogue of kotoite, in rhodochrosite-granite contacts. Nature did provide him responses immediately within his fatherland to validate his predictions. In 1955 kotoite was found in a dolomite-granite contact in Iwaté Prefecture, Japan, by him; in 1963, the Mn analogue of kotoite, later named jimboite, was described by this marvelous prophet himself. Still we, including him, believe that these are blessings from Heaven to those who devote themselves to natural sciences with the faith of eternal approach to Nature. And, these works were a threshold before the most glorious time in his scientific career. In 1966, the Prize of the Japan Academy was conferred on him to reward his contributions to mineralogy and economic geology.

The period of his post as professor in Geological Institute, University of Tokyo, was from 1944 to 1968. During this time he had many important side posts in and out of university, including Dean of Faculty of Science, University of Tokyo, Councilor of the International Mineralogical Association, President of the Society of Mining Geologists of Japan, President of the Geological Society



of Japan, and President of the Mineralogical Society of Japan. After retirement from the University of Tokyo, he was appointed professor of the Department of Earth Sciences, Nagoya University, until 1971. His educational career was terminated after his highest post, President of Akita University from 1971 to 1976.

His energetic field, laboratory, and office works were supported by his physical toughness, cultivated as a soccer player and alpinist when he was a high school and university student. At the time of a field trip passing through a part of the Sahara desert during the 19th International Geological Congress, all the participants except him needed medical help from the accompanying nurse, who called him one of the most sound geologists ever seen.

He was also a distinguished photographer. All the photomicrographs attached to his papers he took himself. He used to tell us that this talent was greatly promoted at Berlin.

On his final day, a copy of a journal was placed at his bedside. It was *Fortschritte der Mineralogie*, Band 63, Heft 2 (1985). He must have been following the memorial of Dr. Paul Ramdohr therein just before the tragedy. Perhaps, two great scientists are now meeting together at a certain place far beyond our reach.

#### ACKNOWLEDGMENTS

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<sup>1</sup> A copy of the complete bibliography of Takeo Watanabe may be ordered as Document AM-87-365 from the Business Office, Mineralogical Society of America, 1625 I Street, N.W., Suite 414, Washington, D.C. 20006, U.S.A. Please remit \$5.00 in advance for the microfiche.