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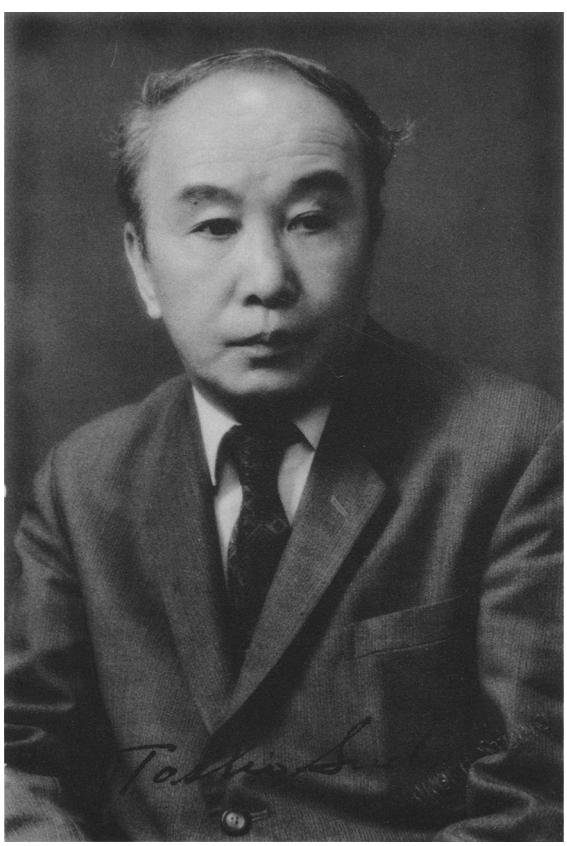
DISTINGUISHED MEMBER AWARD

The Distinguished Member Award of The Clay Minerals Society was made to Professor Toshio Sudo at the 16th Annual Meeting of The Clay Minerals Society in Macon, Georgia, August 21, 1979. The following citation was read on behalf of the recipient by George W. Brindley.

INTRODUCTION OF TOSHIO SUDO

George W. Brindley

Mr. President, members and guests of The Clay Minerals Society, it is a pleasure and a privilege to make this citation in support of the nomination of Professor Toshio Sudo for the Distinguished Member award of our Society. Professor Sudo, by his teaching and research, has played a pre-eminent role in the development of clay mineralogy in Japan. Over a period of almost 45 years, since the publication of his first paper in 1935, he has made major contributions to the advancement of the subject. He took a B.S. degree in mineralogy in the prestigious Tokyo Imperial University in 1936 and was awarded the Doctor of Science degree in 1944. He was lecturer and subsequently assistant professor of mineralogy in the Imperial University until 1953, and from then until his retirement in 1975 he was Professor of Mineralogy in the Tokyo University of Education. His publications, many jointly with colleagues and students, have now gone beyond the 300 mark and involve almost every aspect of clay mineralogy and geology.



Professor Sudo is author, co-author, or editor of many books on mineralogy, crystallography, and especially clay mineralogy, among which the following may be mentioned:

Clay Minerals (in Japanese) published by Iwanami-shoten, Tokyo, 1953, 240 pp.

Illustrated Manual of Minerals and Rocks (in Japanese) by H. Shibata and Toshio Sudo, published by Hokuryukan, Ltd., Tokyo, 1956, reprinted 1964, 342 pp.

Mineralogical Study on Clays of Japan (in English), published by Maruzen Co., Tokyo, 1959, 328 pp.

Principles of Mineralogy (in Japanese) published by Asakura-shoten, Tokyo, 1963, 565 pp.

Crystallography (in Japanese) published by Asakura-shoten, Tokyo, 1969, 274 pp.

Elementary Mineralogy (in Japanese) published by Asakura-shoten, Tokyo, 1972, 255 pp.

Clay Mineralogy (in Japanese) published by Iwanami-shoten, Tokyo, 1974, 498 pp.

Clays and Clay Minerals of Japan (in English) edited by Toshio Sudo and S. Shimoda, published by Kodansha Ltd., Tokyo, and Elsevier Scientific Publishing Co., Amsterdam, Oxford, New York, 1978, 326 pp.

The second of these books is a beautiful publication with colored plates of all the minerals and rocks described; unfortunately for many potential users it is in an unreadable language. The last book is No. 26 in the Elsevier Series on "Developments in Sedimentology." Professor Sudo contributes a major chapter, almost one-third of the book, on "Clays and Clay Minerals." Although the text is oriented towards the clays of Japan, the subject matter is linked closely with clay mineral studies in other parts of the world so that a refreshingly new outlook is given to topics commonly treated from the standpoint of American and European studies.

Professor Sudo's work has touched almost every aspect of clay mineralogy, but especially the common ground involving mineralogy and geology and the alteration processes by which clays are formed. He

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has studied the development of clays from volcanic glass, tuffs, and basalts; clays formed in Recent sediments; and the distribution of clays in deep-sea cores from the North Pacific and Indian oceans. The study or iron-rich di- and trioctahedral smectites has been a long-standing interest of Dr. Sudo. The variable oxidation of these minerals and their often poorly developed structural features make their precise characterization difficult. In an early paper (*Bull. Chem. Soc. Japan* **18,** 281–329, 1943) he recognized iron-rich saponites as corresponding with alteration products described much earlier by Lemberg in 1877. Thirty years later with N. Kohyama (*Clays & Clay Minerals* **23,** 215–218, 1975) he showed that dioctahedral hisingerite, a poorly crystalline form of nontronite, develops from trioctahedral iron-saponite by oxidation of the iron and leaching of Mg ions.

Dr. Sudo has been a pioneer in studying the sequence of clay minerals in the vicinity of ore deposits and the development of interstratified minerals, with both random and ordered layer sequences. In 1954, with H. Takahashi and H. Matsui, he reported new types of clay minerals with basal spacings near 30 Å. Subsequently with H. Kodama (*Z. Kristallogr.* **109,** 379–389, 1957) he recognized that these minerals contained regular interstratifications of dioctahedral chlorite and montmorillonite layers. Similar minerals have been found by other investigators, and in 1963 Frank-Kamenetsky *et al.* (*Proc. Int. Clay Conf. Stockholm* **2,** 181–186) proposed the name tosudite for these regularly interstratified minerals. Dioctahedral chlorites as single minerals have since been reported from various localities (see H. Shirozu, Ch. 7 in *Clays and Clay Minerals of Japan*), and Müller in 1963 (*Proc. Int. Clay Conf. Stockholm* **1,** 121–130) proposed the name sudoite. However, following Eggleton and Bailey (*Amer. Mineral.* **52,** 673–689, 1967) the name is now used for chlorites with dioctahedral 2:1 layers and Mg, Al trioctahedral interlayers. It is indeed a fitting tribute to the work of Professor Sudo and his collaborators that these two minerals are named after him. Sudo also was the first to recognize randomly interstratified kaolinite-montmorillonite in acid clay deposits in Japan (*Nature* **178,** 1115–1116, 1956). He has also studied a variety of regularly interstratified structures developed from micas (see K. Tomita and T. Sudo, *Clays & Clay Minerals* **19,** 263–270, 1971). In the zeolite world, he is recognized as one of the first to discover these minerals as major constituents of sedimentary rocks and to comprehend their significance as authigenic products formed from volcanic ash (J. Geol. Soc. Japan **56,** 13–16, 1950).

The high esteem in which Professor Sudo is held in his own country is shown by the book *Contributions to Clay Mineralogy,* "dedicated to Professor Toshio Sudo on the occasion of his retirement," Kitinosuke Henmi, editor-in-chief (1975). This volume of 261 pages contains 46 articles, some in English, and others in Japanese, by many colleagues and associates of Professor Sudo. It lists the details of his career and his many publications. He was a leading spirit in the development of the Clay Research Group of Japan in 1958, which became the Clay Science Society of Japan in 1964. Professor Sudo was president of the Group (1958–1964) and of the Society (1964–1966). He served on the Council of AIPEA (1966–1972) and was president of the Geological Society of Japan (1970–1971). He has been a member of The Clay Minerals Society since 1965.

Mr. President, it is singularly appropriate that one who has contributed so greatly to the development of clay mineralogy by his teaching, his research, his publications, and the offices he has held should be counted as a Distinguished Member of our Society. I have much pleasure in presenting him to you for this award.

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