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DISTINGUISHED MEMBER AWARD

The Distinguished Member Award of The Clay Minerals Society was made to Professor Haydn H. Murray at the 17th Annual Meeting of The Clay Minerals Society in Waco, Texas, October 7, 1980. The following citation was read on behalf of the recipient by Ralph E. Grim.

INTRODUCTION OF HAYDN H. MURRAY

Ralph E. Grim

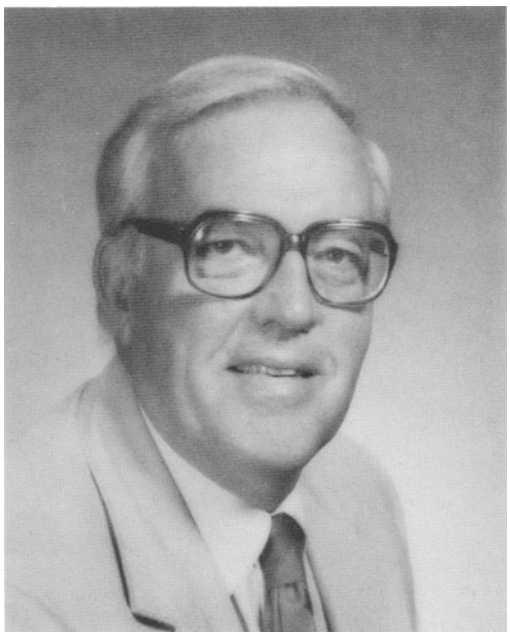
Mr. President, members and guests of The Clay Minerals Society, it is a privilege and a distinct personal pleasure to give this citation in support of the nomination of Professor Haydn H. Murray as a Distinguished Member of our Society. Haydn Murray was one of my first Ph.D. students at the University of Illinois. He is one of my men of whom I am particularly proud—proud because of his continuing outstanding professional accomplishments.

All of Haydn Murray's academic training was at the University of Illinois. Immediately after receiving his Ph.D. in 1951 he was appointed Assistant Professor of Geology at Indiana University. There he gave courses in Clay Mineralogy and organized a Ph.D. program. Several of his trainees at Indiana followed him to the Georgia Kaolin Company when he moved there several years later.

He was also appointed Clay Mineralogist on the Indiana Geological Survey. During his stay in Indiana he published some important findings on the clay mineral composition of the shales of Pennsylvania age in that state and an interesting contribution on the weathering of the clay minerals. Haydn Murray was one of the early investigators of Recent sediments as significant in understanding diagenesis and the character of ancient sediments. His study of the sediments off the coast of North Carolina was a valuable contribution to our knowledge of Recent sediments.

In 1957 Haydn Murray left Indiana to become Director of Research of the Georgia Kaolin Company in Elizabeth, New Jersey. This company, with extensive mines and processing plants in Georgia, is the largest producer of kaolin clay in the United States. Later he became successively, Manager of Operations, Vice President—Operations, and then Executive Vice President. In this last position, which he held for nine years (until 1973), he was responsible for the entire operation of the Georgia Kaolin Company. His eminent success as a manager was shown by the growth and diversification of the Company during this period.

About 75% of all the kaolin produced is used in filling and coating paper. The remainder is used in fine ceramic whiteware and a host of other uses including paint, rubber, and plastics. For each of these uses the kaolin must meet strict specifications. For example, kaolin for coating paper must have a



high brightness and a very low viscosity when suspended in water; it must also produce a coating of a certain opacity and printability. Crude kaolins, as mined, vary in these properties, and elaborate processing is commonly necessary to produce clays meeting specifications. Haydn Murray realized that the fundamental aspects of kaolin, i.e., the crystal structure of the kaolinite, slight variations in composition and morphology of the individual particles, cation-exchange capacity, controlled the properties which in turn determine the use of the kaolin, not only in paper, but in the other miscellaneous uses such as in tooth paste, lead pencils, and so forth. The research projects he organized to this end in the Georgia Kaolin Company Research Laboratory resulted in a series of papers by Murray and his colleagues that have led the way to understanding the fundamental causes of the variation in the properties of kaolin, and of processing possibilities for controlling and varying these properties. Haydn Murray is looked upon worldwide as the outstanding expert on kaolin clays—their properties, processing, and utilization.

A few of the more than 25 publications by Murray and his colleagues resulting from the foregoing researches follow:

Correlation of paper coating quality with degree of crystal perfection of kaolinite: *Clays and Clay Minerals, Proc. 4th Natl. Conf., University Park, Pennsylvania, 1955,* Ada Swineford, ed., Natl. Acad. Sci.—Natl. Res. Counc. Publ. **456,** Washington, D.C., 31–40, (1956).

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Physico-chemical properties of kaolinite in relation to paper coating quality: *Tech. Assoc. Pulp Paper Ind.* **48,** 688–696, (1965).

The effect of aluminum on the surface properties of kaolinite: *Clays & Clay Minerals* **21,** 295–302, (1973).

Applied rheology: *Porcelain Enamel Institute* **37,** 1–9, (1975).

Haydn Murray's contributions in this field have been recognized by the Technical Association of the Pulp and Paper Industry where he has served as Chairman of the Pigments Committee and by his selection to present the A. I. Andrews Memorial Lecture to the Porcelain Enamel Institute, his election as Vice President of the American Ceramic Society, his election as Distinguished Member of A.I.M.E. in 1976, and his receiving the Hardinge Award of A.I.M.E. in 1976. As many of you know, the first National Clay Minerals Conference in the United States was sponsored by a National Research Council Committee on Clay Minerals. About 1963–1964 the annual meetings had grown to a size where many people believed that a more formal organization should be formed. Haydn Murray at that time was a member of the Committee and played an active role in the formation of our Society. He was the President of the Society in 1965–66.

In 1973 Haydn resigned his position with Georgia Kaolin Company in order to return to the academic world. He was appointed Professor of Geology and Chairman of the Department of Geology at Indiana University, and has been there since that time. On returning to Indiana, he continued his interest in the processing of earth materials, and as an example, produced significant information on the use of high intensity magnetic beneficiation of coal, as well as of various industrial minerals. His interest in kaolins has continued as indicated by several papers reviewing kaolin deposits throughout the world.

To me, the primary attainment of Haydn Murray is that he has won for himself an outstanding and universally recognized reputation as an expert in using and applying fundamental mineralogical and geological information to practical problems. In recent years he has been sought as a consultant in such matters—as an example, to turn around a floundering industrial mineral operation in Brazil.

Mr. President, it gives me great pleasure to present to you one who richly deserves the award of Distinguished Member of The Clay Minerals Society—Haydn H. Murray.

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