PRESENTATION OF THE SIXTH ROEBLING MEDAL OF THE MINERALOGICAL SOCIETY OF AMERICA TO CLARENCE SAMUEL ROSS

WALDEMAR T. SCHALLER, *Geological Survey, Washington, D. C.*

We have gathered together once again to honor one of our colleagues and to give tangible evidence of our appreciative evaluation of his outstanding mineralogic and petrologic accomplishments, by bestowing on him the Roebling Medal—the Washington Augustus Roebling gold Medal of the Mineralogical Society of America.

There is no need to tell you about the Medal, what it is and what it stands for. That story has been told to you in the course of previous presentations of the Medal. Rather, I shall tell you a little about the recipient, Dr. Ross, and touch lightly on some of his outstanding accomplishments in the fields of mineralogy and petrology. These have attained so wide a recognition that the bestowal of the honor which the Roebling Medal represents is eminently fitting as a token of appreciation of his meritorious achievements.

Dr. Clarence Samuel Ross is one of Professor W. S. Bayley's boys, receiving his doctorate from the University of Illinois in 1920. He joined the United States Geological Survey nearly thirty years ago and for the last quarter of a century has been Chief of the Section of Petrology in that Bureau.

Reading over his bibliography, his wide range of interests in matters geologic is shown by groups of papers on structural and areal geology, petrography and petrology, techniques developed and used in the microscopic studies of rocks and minerals, geologic processes, ore deposits, and, of course, mineralogy. Through nearly all his papers one senses his innate love of minerals, manifested even in papers not primarily mineralogic, for always geologic or petrologic problems were approached by means of detailed mineralogic studies. His very first paper is titled: "The 'chloritic' material in the ores of southeastern Missouri," which material, then unidentified, led to several investigations and reports on the mineral we call glauconite.

Naturally enough for a petrographer, much of his descriptive work has been on those minerals composing or closely related to rocks—petrologic minerals, if you wish. So we find papers on glauconite, the constituent of greensands; on iddingsite, an alteration of minerals of basalt; on montmorillonite, the constituent of the rock bentonite—the mineralogic descriptions tied in, wherever possible, with discussions of geologic relationships.

From a strictly mineralogic point of view, his greatest contribution probably has been in his exact quantitative determinations of the optical properties of minerals, for his own use in his researches, and to a much greater extent than is generally appreciated, for others, for he was always ready to place his time and abilities at the service of whoever called for help—ready and pleased to do much work and to make many determinations for others.

Along with this large quantity of actual determinations, many of which were never published, many of them serving to verify the determinations of others and hence submerged in a "general average," is his remarkable ability to develop and apply special techniques for handling under the petrographic microscope very fine grained materials and other minerals difficult to orient for the exact determination of their optical properties.

Together with his general geological investigations, his work on the genesis and the paragenesis of the minerals involved—their geochemistry in fact—has resulted in his widely acclaimed Geological Survey publications (Prof. Paper 179) on the origin of the copper deposits of the Ducktown type in the southern Appalachian region, and (Prof. Paper 198) on the occurrence and origin of the titanium deposits of Nelson and Amherst Counties, Virginia. These two reports led inevitably to his chapter on Physical-chemical factors in the development of a deep-seated type of ore deposit, published in the Lindgren volume of the A.I.M.E.

His early work in the middle twenties on volcanic ash and its alteration to bentonite served to show the inadequateness of our knowledge of clay minerals and also served to introduce him to these clay minerals—a group which he then found was remarkable chiefly for the almost complete lack of sufficient and accurate data on their properties and relationships to one another and to other minerals. This state of ignorance was due essentially to the inherent difficulties of examining and handling such friable and fine grained materials and hence passed by on the part of most investigators. But not by him. The results he achieved, shown in part in his Geological Survey Professional Papers 165 "The Kaolin Minerals," 185 "Halloysite and Allophane," 205 "Minerals of the Montmorillonite Group," have established so firmly his reputation as a clay specialist that "clay minerals" and "Dr. Ross" are considered synonymous.

The invitation he received to be the Edward Orton, Jr., Fellow Lecturer of the American Ceramic Society for 1945, an honor that but few have obtained, is but a further indication of the high regard in which he is held, both by his ceramic and by his geologic colleagues. In this address, Dr. Ross emphasized the common ground and the close relation-

ships between ceramics and geology and in particular that the ceramists have made greater use of mineralogic and petrographic techniques than those working in any other applied science.

Member of numerous scientific societies, he has served our Society as Councilor and as President and at home has served as President of the Geological Society of Washington. The two minerals rossite and metarossite have been named after him.

Dr. Clarence Samuel Ross, as the representative of the Mineralogical Society of America, I take great personal pleasure in presenting to you the Roebling Medal, awarded to you by our Society, in recognition of your meritorious achievements resulting from your outstanding investigations in the science of Mineralogy.