



CLARENCE S. ROSS

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Clarence S. Ross is one of the eminent triumvirate of Ross, Schaller, and Larsen, of the U. S. Geological Survey, that has contributed so much to the basic data of mineralogy and petrology during the past 35 years.

Ross entered the University of Illinois to study engineering and had the good fortune to take a course in Engineering Geology under Professor William S. Bayley. Before the course was over the student was lost to engineering but gained by geology. Dr. Bayley exerted a profound influence on Ross, not only in inspiring him to study geology, but also in acting as a second father to him. At Illinois, Ross received thorough training in the basic cognate disciplines; and, as a consequence, he has always stressed the value of a broad background for work in the geological sciences. His doctoral dissertation was on the Snowbank granite of the Lake Superior region.

Dr. Ross joined the Survey in 1917 and for two years was engaged in oil studies in Oklahoma and Texas. The gateway to his life interests opened when he joined Cross and Larsen in the studies of volcanic rocks of the San Juan region of Colorado. Since that day, his association with Larsen and Schaller has been exceedingly close.

His major fields of study have been the physical chemistry of the formation of certain types of ore deposits, the clay minerals, and volcanology. The contribution that Dr. Ross has made to the mineralogy of the clay minerals is truly significant. When he started work on these minerals, the literature on the subject was in a state of utter confusion. An attitude of hopelessness concerning the study of such fine-grained minerals prevailed in many laboratories. It was Ross who unequivocally demonstrated that what was considered to be kaolinite consisted of three different minerals, which he named kaolinite, dickite, and nacrite. He extended his studies to the kaolin-group minerals—halloysite and allophane—and he published many papers on the clay minerals. His work on the montmorillonite group culminated in the Professional Paper published in 1945 with Dr. Sterling B. Hendricks. In addition to the descrip-

* Publication authorized by the Director, U. S. Geological Survey.

tive work on the clays, Ross has been greatly interested in relating the clay minerals to the paragenesis and origin of rocks and ore deposits. As a result of his work in clearly defining the clay minerals and in establishing their paragenesis, a new field was opened for advances in the study of ore deposits, the alteration of rocks, and the development of soils.

Some of Dr. Ross' friends have wondered why, in the past ten years, he has transferred his major efforts from clays to volcanoes. Ross explains that no great jump is involved. He first became interested in clay materials by way of bentonites and their origin as volcanic materials. Thus, in going back to the study of volcanic rocks, he is only completing a circle.

Dr. Ross was for about 20 years head of the Section of Petrology of the U. S. Geological Survey. It has been one of his proudest boasts that he has never proposed a new rock name.

To those of us who have had the privilege of working closely with Clarence Ross, it is not a simple thing to set down in words our indebtedness to him. Ever willing to help us interpret what we see under the microscope, to repair or make a piece of unusual laboratory equipment, to give good counsel when sought, he inspires us by his example and arouses a healthy enthusiasm for research. Clarence Ross has lived up to the standards set by his illustrious predecessors. In dedicating this volume to Ross and Schaller, we pay tribute to two eminent scholars whose modesty makes it doubly a pleasure thus to acclaim them.