Upon completion of his field and petrographic work, he recognized his need for the kind of training and assistance available at the Geophysical Laboratory in order to answer some of the problems raised by the rocks he was studying. The Survey enabled him to spend two years at the Laboratory, working closely with Hatten Yoder, Frank Schairer, and others. His diligence in pursuing experimental studies of feldspars and related systems provided the necessary knowledge and technique which, in balance with his earlier profound field knowledge, has made him an unusually effective scientist.

He became one of a group of Whiz Kids which the Geological Survey formed in the late 1950's in response to our critical need for increased effort in theoretical and experimental geology. In the early 1900's, the Geophysical Laboratory got its start through the transfer of men like E. T. Allen and A. L. Day from the Survey. Over the next five decades, the Survey and the Geophysical Laboratory worked very closely in Washington, with many close contacts and joint meetings, such as those of the Petrologists' Club. In the late 1950's, however, it became more and more apparent to our then Chief Geologist, W. H. Bradley, and Director, T. B. Nolan, that there needed to be developed within the Geological Survey a capacity for both field and theoretical and experimental approaches to the problems of geology. David Stewart and his contemporary colleagues represent the consummation of this policy decision, and it is only natural that the leadership expressed over many years by the Geophysical Laboratory in this field should be reseeded in the Survey.

In giving this award to Dr. Stewart, the Council of the Society was very much impressed with his original work in experimental, theoretical, and practical petrology. By my reference to the award as "Junior," I intend to convey my prediction that Stewart, like other award winners whom I see assembled in this room, will continue his outstanding work in science in the years ahead.

Mr. President, it is my great privilege to present to this Society Dr. David B. Stewart, recipient of the Mineralogical Society of America Award for 1966.

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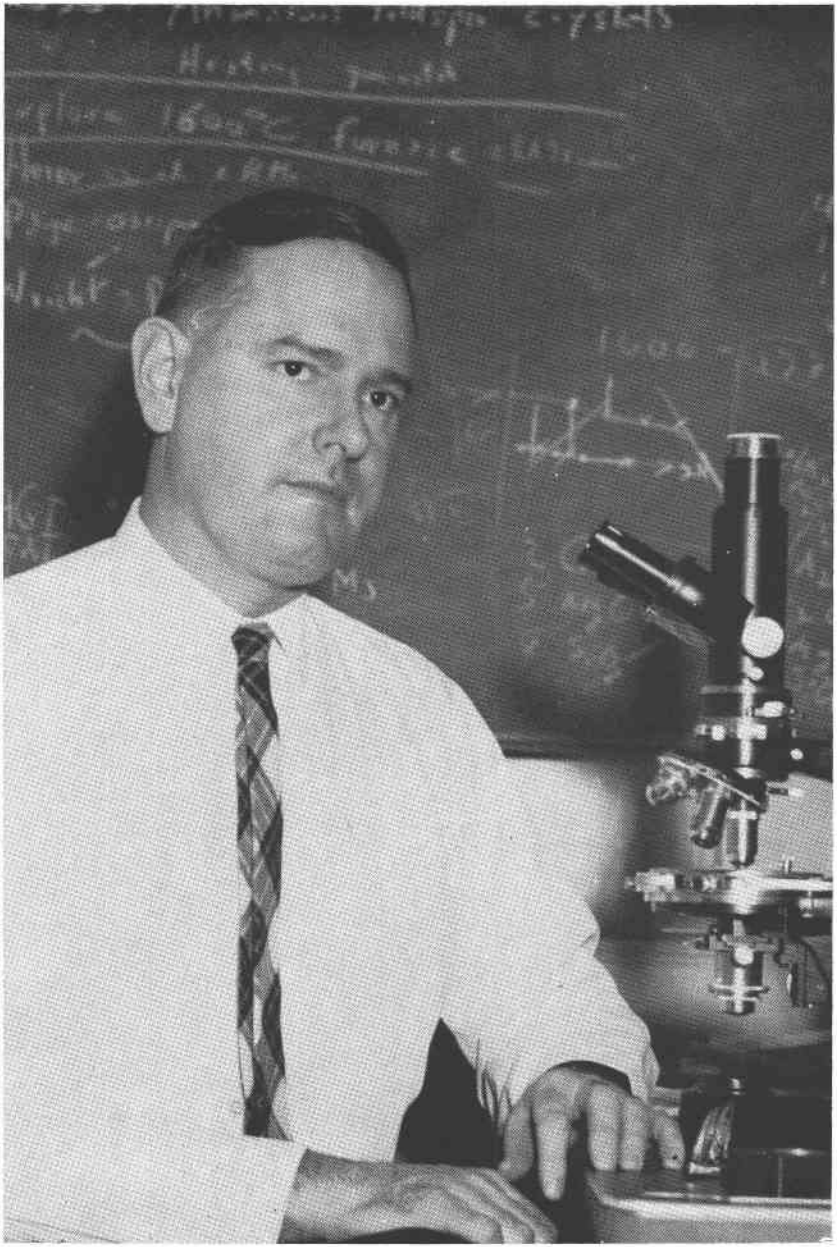
ACCEPTANCE OF THE MINERALOGICAL SOCIETY OF AMERICA AWARD FOR 1966

DAVID B. STEWART, *U. S. Geological Survey, Washington, D. C.*

President Mason, ladies and gentlemen:

The Mineralogical Society of America's Award is very highly prized among the younger mineralogists and geochemists of the world. Though



DAVID B. STEWART

I have known for a year that I was to receive this Award, my astonishment is but little less now than it was then. I had expected that my name would be mentioned in last year's Council meetings only in another context. However, it appears that the good fortune that has been my lot throughout my career has reached a peak today, and I am humbly grateful to all who have made this happen. I could use up my time just thanking the many advisers, teachers, friends, family, colleagues and collaborators who have helped me—they should all be assured that I thought kindly of them while preparing these remarks. I would like to acknowledge my gratitude to Victor T. Johnson, an amateur mineralogist, who first aroused my interest in minerals. Clifford Frondel and Cornelius Hurlbut, Jr., transformed my interest and memory into mineralogical skills. W. T. Pecora taught me field geology. James B. Thompson, Jr. gave me petrologic insights that I still hope someday to utilize effectively, and H. S. Yoder lured me to experimental geochemistry. While a student, I was indeed fortunate to see a previous generation in action in the laboratory, field, and classroom—men such as Bowen, Larsen, Palache, Daly, and Lane—they gave me first-hand knowledge of what scientific scholarship demands of young aspirants.

My long association with the Survey has given me great satisfaction. Its simple tenure requirements have given me a secure base from which to pursue long-term investigations. A large, alert, and challenging group of colleagues, young and old, of a wide range of special capabilities has been most stimulating. I have received wide exposure to well-studied field areas from my colleagues and I happily accept the concept that field evidence takes precedence over experiment. My Survey association has given me valuable training in the difficult skill of writing, and the gentle art of criticism. Most satisfying has been the opportunity to pursue full-time mineralogical research, using a large well-equipped laboratory with much skilled technical support of all types. It is an embarrassment to me, given such massive support by my Survey colleagues, and friends in the Carnegie Institution, universities, and industry, that I have not been able to do more, and to prepare all of it for publication. Stimulated by this Award I have been attempting to remedy this.

I would also like to remark on how much pleasure it has been to be associated with various committees and programs of this Society, and those of its curiously unrelated cousin, the Geochemical Society. The lecture programs of AGI, and AGU have been most enjoyable for me. It is unfortunate, I think, that many younger people have not become concerned with the day-to-day operations of their societies, whose operations affect them in so many ways. I hope that the pressure to produce papers can be reconciled with the realization that there must be an ap-

propriate time and place to present them, policy to guide the choice of papers, journals to print them following appropriate review and revision, and money to pay the bills. This takes manpower that younger people seem reluctant to offer, though it affects them vitally.

As a descriptive mineralogist as well as an experimentalist, I recognize how vitally the study of the phase equilibria of minerals depends on careful mineralogical characterization of the phases produced. I am all too aware that large differences of many kinds exist between synthetic phases and natural phases given the same name. In the rock-forming silicates, many natural and synthetic phases have not yet been adequately characterized. Proper study of synthetic systems requires that the phases be subjected to careful mineralogical examination. Nonetheless, many studies have been reported where the presence or absence of one or two peaks on the X-ray powder diffraction pattern has been said to be definitive for some phase that may show an astonishing range of composition and polymorphism, with correspondingly large affects on stability relations. Geologic applications of such studies are an exercise in futility, but unfortunately are common.

In research concerning the feldspars in which I have participated I had hoped to learn enough about these ubiquitous minerals to understand what their complexities meant in terms of the conditions of mineral formation and the subsequent history. Despite the Biblical instruction against building a house on shifting sands, almost all of my experimental work has been tied to these minerals. I expected that simple generalizations, once found, could be coupled with simple mineralogical measurements, thus making the bulk of many rocks amenable to geologic interpretation. There are many people in this room, and many more outside it, who have shared this hope, and have spent years at the task of simplifying the feldspars. Yet we have not been successful. At least as many problems remain as have been partially resolved. The significant progress we have made is most useful to define especially pressing problems, such as methods for the relative ranking of structural states in alkali feldspars, the structure of intermediate albite, determination of the location of the non-quenchable transformations in plagioclase, the nature of the microcline-orthoclase and high-low sanidine inversions, the correlation of physical properties and polymorphism, and the effect of small crystal size and arrangement on X-ray diffraction properties. Another vital problem is why all feldspars show similar variations in unit-cell parameters with changing temperature, composition, and structural state. The closer we look, the more detail we observe that is inconsistent with, or not accounted for by our present understanding. No doubt the geologist seeking to describe and interpret his feldspars finds

the flood of data in the literature confusing, and he is right! Last year's AGI "Short Course" convinced me that no one person has a complete current knowledge of feldspars, and this may not be possible. I understand that the chain gang from the recent AGI "course" feel the same. It is clear that modern mineralogists must from necessity work cooperatively with a wide range of specialists to untangle their mutual problems. Joint research makes significant progress more probable, and I hope that my bibliography properly reflects this fact. What I have accomplished has been due largely to the fortunate availability of Pecora, Thompson, Yoder, Roseboom, Skinner, Appleman, and Wright, and I can predict that this will be the pattern for me in the future. I hope that Dave Wones is successful in bringing me up-to-date with experimental mineralogy involving controlled partial pressures of volatiles in our current joint work on feldspars, micas, amphiboles and pyroxenes. In the future awards of all types, including this one, might very well be made to a group of researchers. I presume that my award was meant to honor my associates as well as me. I thank them, and we thank you.

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MEMORIAL OF JEWELL JEANNETTE GLASS

ANNA JESPERSEN, *U. S. Geological Survey (Ret.)*

Jewell Jeannette Glass was born at Daleville, Lauderdale County, Mississippi, on December 24, 1888, the daughter of Levi Lafayette Glass and Julia Ann Vance Glass; she died in Washington, D. C., on January 28, 1966. Interment was at Laurel, Mississippi.

Jewell came to Washington, D. C., in 1918 to accept a War Department Civil Service position. After spending some years in that department and in the Department of Agriculture, in 1930 she joined the professional staff of the U. S. Geological Survey. In the meantime she had earned an A.B. degree (1926) and an M.A. degree (1929) from George Washington University. Her education was continued in a teaching fellowship at the University of North Carolina (1929–30), a teaching fellowship at the University of Minnesota (summer 1930), graduate studies at Johns Hopkins University (1932–33), and special courses at George Washington and the U. S. Geological Survey.

Jewell began her career with the U. S. Geological Survey as an Aid In Mineralogy. From there she progressed through Junior, Assistant, Associate, and full Mineralogist and ended her career as a Geologist, with specialties in Petrology and Mineralogy. She pursued her various scien-