fast refusal to be coauthor with his students on their thesis materials. Jim makes large contributions on the contents of each thesis, but when the work is done he steps back quietly, allowing the student the sole credit.

Years ago, I was applying for graduate admission at Harvard. Professors like Billings, Birch, Frondel, Hurlbut, and McKinstry were well known. But Esper Larsen had retired; who was in his place? I asked a professor from the area. He said, "Oh, there's a young man who just finished his degree at MIT, I think named Thompson. Said to be doing new things but we don't really know. Guess you'll be finding out." Well, some of us did find out! To become Thompson's student was a bit of serendipity for his early students, and remains today a source of intellectual challenge and dedication. We may have worried whether Jim would finish reading our thesis drafts on time to beat the deadline, but we are proud to count him as a teacher and friend, and look forward to fresh stimulations from him in the years to come.

Mr. President, it is my honor and great pleasure to present to the Society the 1978 Roebling Medalist, James Burleigh Thompson, Junior.

American Mineralogist, Volume 64, pages 664–665, 1979

Acceptance of the Roebling Medal of the Mineralogical Society of America for 1978

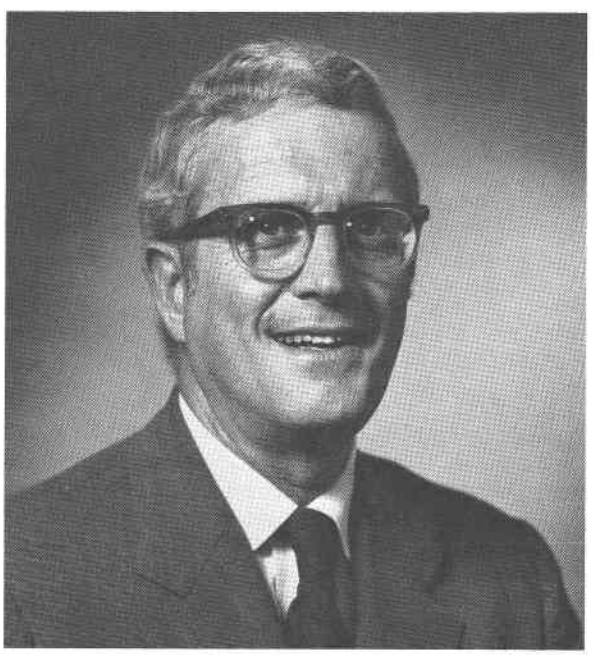
JAMES B. THOMPSON, JR.

Department of Geological Sciences, Harvard University
Cambridge, Massachusetts 02138

Thank you E-an; *Mr. President, friends and colleagues:*

Few things could please me as much as to know, with this award, that the results of my scientific efforts have been found useful by the audience to whom most of these contributions were directed.

My interest in rocks and minerals was kindled at Dartmouth College by Harold Bannerman and Dick Stoiber, and secured later at M.I.T. by Harold Fairbairn and Martin Buerger. Much of my own life, following their lead, has been devoted to teaching others about rocks and minerals. As a teacher I have been kept on course by colleagues of like interest, in my case Connie Hurlbut, Cliff Frondel, Charlie Burnham, and others over shorter periods. Many of you know, however, that there is no better stimulus to the sharpening and honing of an idea than that provided by an able student who wishes to share it. In this I have been blessed. Thank you again, E-an, for being one of them—and I am happy to see so many of you here today. Thank you all for the freshness of mind you brought to a sometimes jaded professor.



One lesson I learned occurred when teaching an undergraduate course at M.I.T. in the late forties. I remember placing a big red X on an examination paper beside a drawing that was, in the dogma of the day, a "wrong" answer. Whose paper it was I do not know but that student's sketch somehow stuck in my mind. Two or three years later Gabrielle Donnay, then working on the structure of tourmaline, was explaining to me her results. It dawned on me as Gai spoke that her discovery of the significance of tetrahedral rotations in the adjustment of tetrahedral to octahedral complexes in silicates had been anticipated on that nearly forgotten quiz paper. I have

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since been much less free with the red X's, and would be greatly pleased if the victim of that early one would come forth, be identified, and accept my apologies.

There are others to whom special thanks are due. I wish especially to mention three: to John Rosenfeld, whose interest in rocks and minerals began at the same time and place that mine did, for the long hours, through the years, of productive give and take. To David Waldbaum for more than a decade of happy symbiosis. We were fascinated by the same problems, and found that what one enjoyed most was what the other enjoyed least in our efforts toward their solution. To my wife, Eleanora, for those many things in our lives that, though part of the whole, are *not* of direct concern to the proceedings of this Society!

I have heard it said, or implied, that the work of mineralogy and petrology, studying the substance of the earth beneath, is largely done, and that bright young scientists would be well-advised to apply their talents to the "purer" aspects of physics and chemistry. There have even been, as some of you may know, a few formal pronouncements to this effect. To me this is a profound and shocking error. God's laboratory, Nature, is not run by the same rules as those in chemistry and physics departments, and would never, I am sure, gain the approval of an inspection team from OSHA. The records, furthermore, are in dreadful shape—but this is what makes it so fascinating. Mineral crystals are among the most varied and complex known. They are related to many of the substances studied by our purer colleagues in much the way that the strokes of an artist are related to straight lines and circles. Our sister sciences have provided us with superb tools and methods of thought, but I suspect that we will be able to provide them with problems as long as the pursuit of knowledge is considered worthwhile.

Let us hope that this will be so for many generations to come.

Thank you.

American Mineralogist, Volume 64, pages 665–666, 1979

Presentation of the Mineralogical Society of America Award for 1978 to J. Stephen Huebner

DAVID B. STEWART

U. S. Geological Survey
Reston, Virginia 22092

President Wyllie, members of the Mineralogical Society of America, and guests:

J. Stephen Huebner has made outstanding contributions to the control of the oxidation state of transition metals in experimental systems of fundamental importance to geochemistry, petrology, and mineralogy. His work is marked by a steady progression in the complexity and importance of the problems he has investigated. His thesis at Johns Hopkins involved determinations of the stabilities of manganese oxides, carbonates, and silicates. Realizing that better thermochemical data were needed, he calibrated the Ni–NiO and MnO–Mn_3O_4 buffers. Publication of a widely-used standard reference on buffer techniques at high pressures followed shortly later. Knowing the importance of careful control of FeO activity for experimental work in silicate melts, he devised original methods of controlling this vital parameter and studied the effects of temperature and pressure gradients and reaction rates in gas-mixing furnaces at one atmosphere. All of these investigations combined to make possible isochemical studies of minerals or magmas containing Fe, Mn, Ti, or Cr.

Of most mineralogical interest are studies of the phase equilibria of pyroxenes, which Steve has pursued with great vigor with Malcolm Ross, Jim Papike, Al Turnock, and Donald Lindsley. These studies concern the partitioning of cations in the pyroxenes below solidus temperatures, where the distributions constitute geothermometers of great promise. Steve and his colleagues have interpreted the cooling histories of lunar ejecta sheets and of terrestrial extrusive and intrusive rocks by use of the results of these studies.

Petrologists know that pyroxenes play important roles in the crystallization of all mafic magmas. Steve has shown that partial melting of pyroxenes in the lunar crust may control the variation of SiO_2 and can

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