

analysed with X rays. His paper on the structure of the rhombic pyroxenes followed. I wondered if his results would not be applicable to interpret the relationships among the pyroxenes in general. The conception of twinned lattices happened to occur to me in a very natural way. Further development need not be gone over again here. I would like to mention how deeply I was indebted to Warren at this stage of my study.

The problem of science varies from day to day, as data upon data accumulate. What yesterday was very important looks like a trifle today. The problem of polymorphism (of minerals) is no exception. What we have achieved (as we dare say) will soon become obsolete. However, limiting our consideration within the small domain of polymorphism, too much is still to be done. The problem of science is, so to say, everlasting. My regret is that I have done so little in the vast field of minerals and always at so slow a pace. However, Schopenhauer once asserted, as if he were pleading for me: *Das Echtes geht stets langsam seinen Gang.*

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PRESENTATION OF THE MINERALOGICAL SOCIETY OF  
AMERICA AWARD FOR 1968 TO BARCLAY KAMB

DONALD L. GRAF, *Department of Geology and Geophysics, University of  
Minnesota, Minneapolis, Minnesota 55455.*

*Mr. President, Fellows and Members of the Mineralogical Society, and  
Guests:*

The present is a time of trial for a venerable institution. The distant frontiers of the Mineralogical Empire are being raided by vigorous young tribes of barbarians—the Goths, the Visigoths, and the Ostrogoths; the Physicists, the Geophysicists, and the Chemical Physicists. The alarmed inhabitants of the realm are building castles. At the center, converts to a new religion called geochemistry have gained the confidence of the Emperor himself. I am here today to tell you about one who escaped from the Physicists at an early age to join the forces of the Empire, one who went to the frontiers and outperformed the invaders.

Barclay Kamb has carried out extensive studies of the crystallography and physical properties of a petrologist's mineral, a rock-forming mineral that has received surprisingly little attention from others—ice. He has determined the crystal structure of a crystallographer's mineral, zunyite. He is one of the few in recent years to contribute to theoretical crystal optics. He has published a major paper on the thermodynamics

of nonhydrostatically stressed solids. It was free of errors. His credentials for liaison with the larger earth science community are excellent; he has mapped the Pleistocene alluvial sequence of the Navajo country and run a summer field camp for some years.

Barclay's undergraduate and graduate training and his professional career have all taken place at an institute of technology located in Pasadena, California. He is one of those triumphs of American technology that our European friends have taken to worrying about of late. It became unmistakably clear that Barclay had made it, when he was promoted to full professor six years ago, at the age of 31. The MSA Award is supposed to alert the world to young men of promise, but this one has outrun us, and we shall have to be content with ratifying the judgment of his colleagues in Pasadena.

Many of you have heard of the professor on the East Coast who also made it recently, and then proceeded to write a book explaining just how he'd made it. The book has been quite successful, and perhaps would have been even more so if done as a comic strip. Imagine, in the first picture, Snoopy saying to Peanuts, "What's Linus writing about this morning?" Now there is both a superficial similarity and a fundamental difference in the careers of these two young men. Barclay has also been concerned about the Pauling family, but his interest was a simple and classical one—in the idiom of the recent past, his intentions were honorable.

But Barclay has not written a book about his scientific strategy, which is just as well, because the book would not have sold. The combination of intelligence with a willingness to acquire the skills and perform the experiments to test one's ideas—none of this is very sensational. What is worse, Barclay usually publishes single-author papers and thereby cheats readers of a delicious element of ambiguity that they have come to expect. Fortunately, his manner of conducting his professional affairs, however boring it might be to the popular press, is one that the members of this Society can applaud wholeheartedly.

Mr. President, it gives me particular pleasure to present to you Professor Barclay Kamb, the 18th recipient of the Mineralogical Society of America Award.