THE HAWLEY MEDAL FOR 1985 TO ROBERT F. DYMEK AND L. PETER GROMET

The association is pleased to award the 1985 Hawley Medal to Robert F. Dymek and L. Peter Gromet for their paper entitled "Nature and Origin of Orthopyroxene Megacrysts from the St-Urbain Anorthosite Massif, Quebec".

Bob Dymek was an undergraduate at Princeton University, where he received an A.B. degree in 1971. He received his M.S. degree from Stanford University in 1972, and his Ph.D. from Caltech in 1977. From 1977 to 1984 he was Assistant and Associate Professor at Harvard University, and is currently Associate Professor in the Department of Earth and Planetary Sciences and a Fellow of the McDonnell Center for the Space Sciences at Washington University, St. Louis. Bob is interested in the application of phase petrology and geochemistry to problems of Precambrian history of the Earth. In addition to his studies of anorthosites from Quebec, Bob has worked extensively on the petrology of extraterrestrial materials, and has spent several years studying the Archean gneiss complex of West Greenland, where he is investigating the thermal and chemical evolution of the early crust.

Peter Gromet was an undergraduate at the State University of New York at Stony Brook, graduating with honors in 1972. His graduate work was done at the California Institute of Technology, where he specialized in rare-earth geochemistry and its petrogenetic implications for batholithic rocks in the Peninsular Ranges of California and Mexico. Following this, he moved to Brown University, where he is currently an Associate Professor in the Department of Geological Sciences. Peter is interested in the application of geochemistry and geochronology to a range of petrological and tectonic problems. He is currently working on the petrogenesis of granitic and anorthositic rocks and on the tectonic evolution of some basement terranes in the Appalachian orogen.

In their award-winning paper, Bob and Peter have brought elegant logic and careful observation together, to tackle one of the most fascinating problems in Canadian petrology. Where did anorthosites come from? Some years ago in *The Canadian Mineralogist,* Emslie described the orthopyroxene megacrysts present in many massif-type anorthosites, and suggested that some could have formed at a very early stage in magmatic development; possibly they represented cryptic evidence for a parental basaltic magma. In their work, Bob and Peter have rigorously analyzed both the petrography and the mineralogy of the orthopyroxene, and then used their analysis to comment on the origin of the anorthosites. Their answers are not yet definitive, but raise some concern about the suggestion of a basaltic parent magma. Rather than viewing the St-Urbain anorthosite as an orphan of a basalt, possibly its source may lie in the deep crust, involving an anorthositic magma.

Ladies and gentlemen, I take great pleasure in presenting the 1985 Hawley Medal to Robert Dymek and Peter Gromet.

Citation read by Louis J. Cabri

It is indeed an honor to be acknowledged by the Mineralogical Association of Canada for research on a geological problem that in many ways is almost uniquely Canadian: the petrogenesis of massif anorthosites. As most previous intestigators of anorthosites will readily admit, the simplicity of these rocks is also their most puzzling feature: how does nature form rocks consisting almost entirely of a single mineral, plagioclase feldspar? Based on our study of the pyroxene megacrysts from the St-Urbain, Quebec, anorthosite, Peter and I concluded, perhaps prematurely, that accumulating feldspar from basaltic magma doesn't seem to work. We postulated, as others before us, that anorthositic magma may be required to accommodate our data and observations; but are anorthositic magmas physically plausible and chemically reasonable? Far more detailed work needs to be done on a number of fronts before any definitive conclusions can be reached. Nevertheless, I hope that our contribution will stimulate other investigators to pursue similar and follow-up studies elsewhere.

I am grateful to many individuals for their instruction, assistance and sustenance, without which the present study could not have been carried out, but I wish to single out three persons to whom I feel particularly indebted. First is Rob Hargraves who, during my undergraduate days, introduced me to the fascinating problem of anorthosites, and over the years has offered continued friendship and invaluable encouragement. Second is Tony Morse, who provided a fantastic summer of education in the Nain area, Labrador, where he freely and extensively shared his ideas about anorthosites. Third is Denis Roy, without whose enthusiasm and assistance the study of St-Urbain would never have been possible.

Finally, I wish to thank my friend and colleague Pete Gromet for the pleasure of working with him on this project, and many others.

Robert F. Dymek

I wish to express my deep appreciation to the Association for honoring our work. I thank my coauthor for introducing me to the study of anorthosites, and to St-Urbain in particular. One of the most enjoyable aspects of this study for me has been the free and stimulating interchange of ideas between Bob and myself. We each contributed from the perspective of our field, we sometimes wore each other's shoes, and we usually didn't worry very much about offending each other. In addition to whatever we have learned about anorthosites, I have gained a great deal from close collaboration with a valued friend.

L. Peter Gromet

ROBERT F. DYMEK

L. PETER GROMET