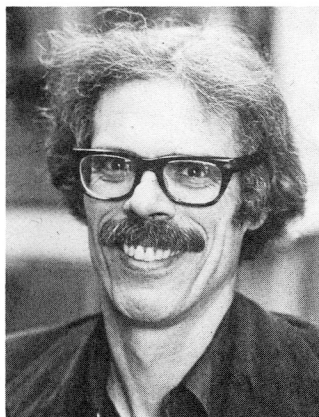


Memorial to Philip Moore Orville

1930-1980

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The death of Yale University professor Philip M. Orville on April 2, 1980, has deprived us all of a brilliant scientist and a delightful, inspiring man. Phil died suddenly of a heart attack, in spite of his remarkable fitness derived from regular training and long-distance running. His many achievements as a scientist are easier to convey than the acute sense of personal loss felt by each one of his enormous circle of friends.

He was born on February 24, 1930, in Ottawa, Illinois, to Lorene Moore Orville and the late Harold Orville. He attended Santa Monica High School in California and graduated from California Institute of Technology with the B.S. degree in 1952. In 1952 and 1953 he pursued advanced studies at the University of Copenhagen, after which he entered Yale Graduate School, earning the master's degree in 1954 and the Ph.D. in 1958. His doctoral research was based on a study of the pegmatites of the Black Hills of South Dakota, and it was from this field-oriented vantage point that he saw the need for experimental work on the alkali feldspars. He was a postdoctoral fellow of the Carnegie Institution of Washington at the Geophysical Laboratory from 1957 to 1960, where he executed his brilliant study of the alkali feldspar solvus by ion-exchange methods. It was at this time that the world of petrology realized that there was a new leader in the science. It was also during this period that Phil was married to his charming wife Lise, forming a combination of the greatest wit and hospitality. Phil was named Assistant Professor of Geology at Cornell University in 1960 and then returned to Yale in 1962 as associate professor of geology, becoming the first Adolph Knopf Professor of Geology in 1972. He was co-chairman and chief organizer of the 1971 Gordon Conference in Geochemistry, organizer and director of the NATO Advanced Study Institute, "Volatiles in Metamorphism," and was an associate editor of the *American Journal of Science* from 1968 to 1971 and editor from 1971 until his death. He won a Fulbright Scholarship to work in Denmark in 1952, the Shell Graduate Fellowship at Yale in 1953, a National Science Foundation Fellowship for 1955-1957, a Guggenheim Fellowship in 1957 for the field study of metamorphic rocks, and was a councillor of the Mineralogical Society of America. He became a Fellow of the Geological Society of America in 1976.

As a scientist, Phil Orville made prodigious contributions. He was one of those rare people who combined experimental brilliance in petrology with a passionate belief that petrologic field observations were fully as important as the results of experiments. He loved field work and always took great pains to relate theory and experiment to the "real world" of metamorphic petrology. As a result, every piece of research he undertook became a contribution of major significance. Perhaps the greatest of these was his

work on the feldspars because of the work itself and the scores of applications that have followed. He was a leading student of fluids in metamorphic processes and contributed greatly to our understanding of them.

As an editor and devoted servant of the science, Phil was without peer, exercising his great talent for critical appraisal of scientific work in concert with a knack for being firm, yet leaving authors happy over his fair treatment. The science has lost a great contributor and a great critic.

However much Phil Orville will be missed as a scientist, editor, organizer, and teacher, he is even more keenly missed as a person. He had flair. All who knew him recall special things about him; how he was a great catalyst in bringing people together and stimulating them to talk, and more importantly, to think; how he sometimes would dress flamboyantly while still somehow being scientifically conservative; how he was more interested in the correctness of conclusions than in his image; how talented an artist he was and what exciting discussions of art would stem from evenings with Phil and Lise; and altogether how great a capacity he had for the enjoyment of life, living, people, and science.

We who knew him will always be inspired by Phil Orville's example of how to live as a scientist and human being.

SELECTED BIBLIOGRAPHY OF P. M. ORVILLE

- 1960 Alkali feldspar-alkali chloride hydrothermal ion exchange: *Carnegie Institution of Washington Yearbook* 59, p. 104-108.
- The petrology of several pegmatites in the Keystone district, Black Hills, South Dakota: *Geological Society of America Bulletin*, v. 71, p. 1467-1490.
- 1962 Alkali metasomatism and feldspars: *Norsk Geologiske Tidsskrift*, v. 42, 2, Halvbind (Feldspar Volume), p. 283-316.
- Comments on the two-feldspar geothermometer: *Norsk Geologiske Tidsskrift*, v. 42, 2 Halvbind (Feldspar Volume), p. 340-348.
- 1963 Alkali ion exchange between vapor and feldspar phases: *American Journal of Science*, v. 261, p. 201-237.
- 1965 (and Greenwood, H. J.) Determination of ΔH of reaction from experimental pressure-temperature curves: *American Journal of Science*, v. 263, p. 678-684.
- 1967 Unit cell parameters of the microcline-low albite and the sanidine-high albite solid solution series: *American Mineralogist*, v. 52, p. 55-86.
- 1969 A model for metamorphic differentiation origin of thin-layered amphibolites: *American Journal of Science*, v. 267, p. 64-86.
- (with Grover, J.) The partitioning of cations between coexisting single- and multi-site phases with application to the assemblages orthopyroxene-clinopyroxene and orthopyroxene-olivine: *Geochimica et Cosmochimica Acta*, v. 33, p. 205-226.
- 1972 Plagioclase cation exchange equilibria with aqueous chloride solution at 700°C and 2000 bars in the presence of quartz: *American Journal of Science*, v. 272, p. 234-272.
- 1974 The "peristerite gap" as an equilibrium between ordered albite and disordered plagioclase solution: *Société Française de Mineralogie et de Cristallographie Bulletin*, v. 97, p. 386-392.
- (with Frey, Martin) Plagioclase in margarite-bearing rocks: *American Journal of Science*, v. 274, p. 31-47.
- 1975 Stability of scapolite in the system Ab-An-NaCl-CaCO₃ at 4 kb and 759°C: *Geochimica et Cosmochimica Acta*, v. 39, p. 1091-1105.