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Presentation of the Mineralogical Society of America Award for 1985 to John M. Ferry

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Professor Eugster, Distinguished Guests, Ladies, and Gentlemen:

The Mineralogical Society of America once again has assembled to honor members for their outstanding achievements in research. Two members have been selected for special awards today. Considered more generally, however, this meeting is an opportunity for all of us to celebrate the personal triumphs known only to ourselves and to share with colleagues our scientific victories.

It is a great pleasure to introduce John Mott Ferry, recipient of the Mineralogical Society of America Award for 1985.

John Ferry is one of the most outstanding metamorphic petrologists actively involved in current research. Thanks to his perseverance and originality, there has been a revolution in the way we think about metamorphism. John is at the forefront of the effort to go forward beyond the old, static model of frozen-in, quenched equilibrium in order to address problems raised by dynamic processes such as fluid flow and heat transfer. The long-term consequences of this revolution cannot be foreseen clearly, but it is certain that a more profound understanding of metamorphism will result.

John Ferry began his career working on the basis of the static model of quenched equilibrium. His first publications (1976) are classic examples of the use of petrology and thermochemistry to infer pressure-temperature conditions and to estimate fluid compositions. These papers clearly illustrate how to obtain thermodynamic data from experimentally determined equilibrium curves and how to use the equilibrium-constant approach to calculate pressures, temperatures, and fluid compositions. His most-cited contribution, on the experimental calibration of the garnet-biotite geothermometer (co-authored with F. S. Spear), has been called "the thermometer of choice for medium grade, regional metamorphic rocks" (E. J. Essene, 1982, *Reviews in Mineralogy,* 10, 165).

At about the time the garnet-biotite calibration was nearing completion, John noticed a curious anomaly: the appearance of an hydration reaction in an otherwise normal prograde sequence of dehydration reactions. The hydration reaction was found to occur in the wall rocks of granite plutons. The plutons themselves showed mineralogical evidence of alteration by CO_2- and CH_4-bearing fluids. It was then that John first related the idea of using mineralogical evidence to map fluid flow through rocks. In the case of the plutons and their wall rocks, he deduced that H_2O moved from the plutons into the wall rocks to drive the hydration reaction and, reciprocating, metamorphic fluids infiltrated the plutons. His development of a dynamic model of metamorphism can be dated from this discovery.

There followed in rapid succession papers on (1) methods of measuring fluid flow, (2) pilot studies wherein petrographic fluid-rock ratios were confirmed by stable-isotope analyses, (3) measurement of element migration caused by fluid flow, and (4) mapping of fluid-rock ratios in relation to geologic structures on a scale of 15′ quadrangles. These works and others research now in progress are leading toward a new and deeper level of understanding of metamorphism.

In addition to his scientific accomplishments, John Ferry has served this society selflessly. Those who were fortunate enough to attend remember with pleasure the Mineralogical Society of America short course he organized for the New Orleans meeting in 1982.

Finally, I would like to cite John for his patient efforts to educate me over the years and for his steadfast friendship.

Professor Eugster, Distinguished Guests, Ladies, and Gentlemen, may I present John Mott Ferry, recipient of the Mineralogical Society of America Award.

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