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Memorial of Francis John Turner
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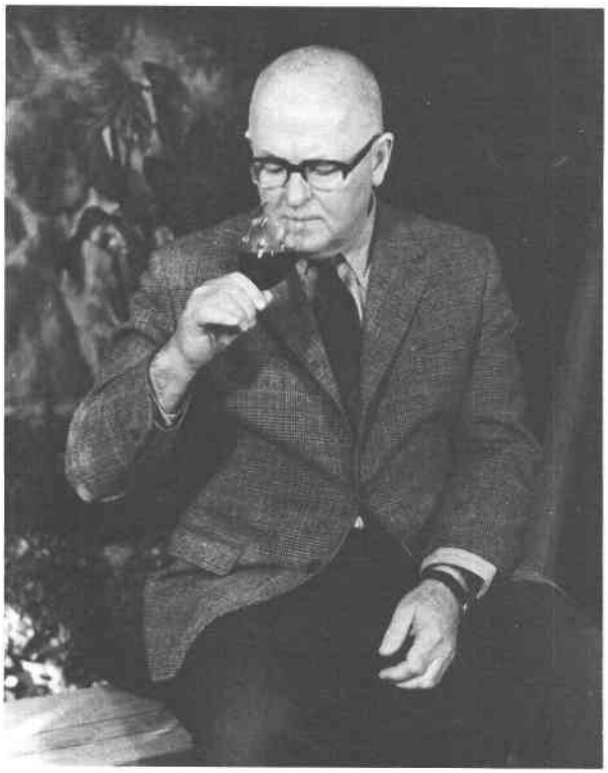
Francis John Turner of New Zealand and Berkeley, California, died on December 21, 1985. Those of us who toil in the world of mineralogy, petrology, and structural geology have lost one of the most influential researchers and writers of the century. Frank was born in New Zealand (1904) and came from a simple family, but one with a mother who believed that, for her children, education was of the greatest importance. Frank studied at Auckland University where, as well as geology, he studied engineering. I well remember his description of his experiments to measure the breaking strength of telephone poles!

My first contact with Frank was in my second year at Otago University, New Zealand, when he introduced us to the world of paleontology. He taught paleo with great clarity! At that time, Otago was a two-man department, Turner and W. N. Benson, F.R.S. It was small, but of exceptional quality. All students knew that, despite the phenomenal teaching loads of Turner and Benson, they were dedicated to research and writing. Their spirit infected us and produced people like D. S. Coombs, now chairman at Otago. I so well remember Frank and his U-stage, and at times, he was just a little short with our foolish undergraduate questions.

Frank, during a period of study in the U.S.A. with Eleanor and Adolf Knopf at Yale, where he was Sterling Fellow (1938–1939), and with Bruno Sander in Innsbruck, had developed a great desire to move to the U.S.A. and to be closer to Europe. In my third year, Frank left for Berkeley, where he was to spend the rest of his productive academic life. At Otago, he was replaced by Colin Hutton, who also was soon to move to Stanford. D. S. Coombs, who was with Tilley in Cambridge, returned to carry on the tradition of excellence in research. I well remember 1951, when Frank and his wife Esme visited Otago and encouraged me to join the great Turner-Verhoogen team.

Perhaps at the center of Frank's success was his absolute mastery of the optical microscope and the universal stage. At the time, I was involved in experimental petrology. I would take an experimental product with a few odd crystals to Frank, and in minutes, he would tell me it was hexagonal anorthite or ilvaite. He could see what others could not identify.

In 1951, Frank and John Verhoogen decided it was time to bring petrology into the 20th century, that it was time to introduce reaction kinetics and thermodynamics to the science of rocks. There is no doubt that their text, *Igneous and Metamorphic Petrology,* influenced a generation of students of petrology worldwide. Frank was a



firm believer that research is not completed until it is available in printed form.

Frank loved the U.S.A. He greatly appreciated his good fortune to be associated with people like David Griggs and his team at UCLA, Verhoogen of Berkeley, and others, like Bill Rubey and Jim Gilluly. He appreciated the opportunity provided by the Guggenheim Foundation on two occasions to associate with groups in Oxford, Cambridge, Imperial College, Sweden, Norway, and Switzerland.

To many undergraduates, Frank was a slightly formidable character. You did not go to him with a badly thought-out question. But, once you had gained mutual respect, you discovered a person with great warmth and a fantastic sense of humor. And, once he started to reminisce on his early days in New Zealand, you recognized the side of quite a naughty little schoolboy. Frank had other sides, too: an encyclopedic knowledge and appreciation of art and an equal appreciation of good wine. He liked many of the good things in life and was amazingly

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generous to students. I remember he introduced me to my first great French food, but with the strong message that one day I must pass it on.

He received many appropriate honors during his lifetime: twice a Guggenheim Fellow, the Hector Medal of the Royal Society of New Zealand, the Lyell Award of the Geological Society of London, the Roebling Medal of the Mineralogical Society of America, and election to the National Academy of Sciences. But I am sure that his greatest satisfaction came from the appreciation of his writing, the famous textbooks and two memoirs of the Geological Society of America. I think it is true to say that, internationally, he was the most influential writer in petrology for at least three decades.

Frank was always strongly supported by his talented wife Esme; the pair were full of life. Their house at Hill Court, Berkeley, witnessed a constant flow of the best of World Geology, and many, many evenings of stimulating debate and lethal martinis. I count myself fortunate to be among those who knew, and were influenced by, this great and human scientist.

Selected Bibliography of Francis John Turner[1]

(with J. A. Bartrum) Pillow lavas, peridotites, and associated rocks of northernmost New Zealand. Trans. N. Z. Inst., 59, 98–138 (1928).

The genesis of oligoclase in certain schists. Geol. Mag., 70, 529–541 (1933).

(with C. O. Hutton) Stilpnomelane from western Otago, New Zealand. Geol. Mag., 72, 1–8 (1935).

(with C. O. Hutton) Metamorphic zones in northwest Otago. Trans. Roy. Soc. N. Z., 66, 405–407 (1936).

Structural petrology of schists of eastern Otago, N. Z. Amer. Jour. Sci., 238, 73–106, 153–191 (1940).

Mineralogical and structural evolution of metamorphic rocks. Geol. Soc. America Mem. 30, 342 p. (1948).

(with J. Verhoogen) Igneous and metamorphic petrology, 694 p. McGraw-Hill, New York (1951).

(with D. Griggs, I. Borg, and J. Sosoka) Deformation of Yule marble, Part V. Geol. Soc. America Bull., 64, 1327–1342 (1953).

(with H. Williams and C. M. Gilbert) Petrography, 406 p. W. H. Freeman, San Francisco (1955).

(with D. T. Griggs and H. C. Heard) Experimental deformation of calcite crystals. Geol. Soc. America Bull., 65, 883–934 (1954).

(with W. S. Fyfe and J. Verhoogen) Metamorphic reactions and metamorphic facies. Geol. Soc. America Mem. 73, 259 p. (1958).

(with L. E. Weiss) Structural analysis of metamorphic tectonites, 545 p. McGraw-Hill, New York (1963).

Metamorphic petrology, mineralogical and field aspects, 400 p. McGraw-Hill, New York (1968).

(with J. Verhoogen, L. Weiss, C. Wahrhaftig, W. S. Fyfe) The Earth, 747 p. Holt, Rinehart and Winston, New York (1970).

(with L. E. Weiss) Some observations on translation gliding and kinking in experimentally deformed calcite and dolomite. Amer. Geophys. Union Monograph 16 (Griggs volume), (1972).

[1] To obtain a copy of the complete bibliography of Francis John Turner, order Document AM-87-339 from the Business Office, Mineralogical Society of America, 1625 I Street, N.W., Suite 414, Washington, D.C. 20006, U.S.A. Please remit $5.00 in advance for the microfiche.