

THE HAWLEY MEDAL FOR 1998 TO FRANK C. HAWTHORNE

Ladies and Gentlemen,

I am honored to present the Hawley Medal to this year's recipient, Frank C. Hawthorne. The Mineralogical Association of Canada presents the Hawley Medal for the best paper to appear in *The Canadian Mineralogist* in the past year. The title of Professor Hawthorne's paper is "Short-range order in amphiboles: a bond-valence approach." The award is named in honor of Dr. J.E. Hawley (1897–1965), who was distinguished professor of mineralogy at Queen's University. The papers this year were judged by a committee chaired by the past-president of the Association, Fred Wicks.

Short-range order in minerals plays an important role in the physics and chemistry of mineral growth and stability. However, we know comparatively little about short-range order in minerals compared to long-range order. Most of the tools we use to study minerals (*e.g.*, X-ray diffraction) provide data for averages over a large number of unit cells. The paper by Professor Hawthorne describes a theoretical approach to describing short-range order.

I was especially impressed by the introductory sections of the paper. They should become a model for scientific writing. Professor Hawthorne describes clearly and concisely short-range order, its importance to understanding minerals and mineral growth, the difficulty in quantifying short-range order, and a method for estimating its frequency in crystals. The rest of the paper applies the theory to estimating short-range order in amphiboles. These results will be important to developers of thermodynamic models for amphiboles.

Ladies and Gentlemen, I present to you this year's Hawley Medalist, Frank Hawthorne.

James Nicholls
President, MAC

Mr. President, Ladies and Gentlemen,

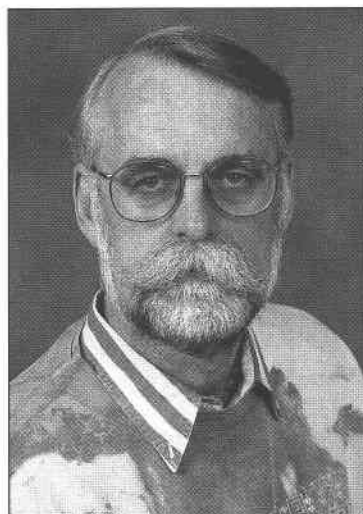
I thank MAC for this award. What is particularly satisfying to me is that the paper in question is on my favorite mineral group: amphiboles.

I should perhaps relate how I began to work on amphiboles, as they have been of great importance to me over the last 30 years, and yet my introduction to them was pure serendipity. When I arrived at McMaster University as a new graduate student, my supervisor, Doug

Grundy, asked me what I wanted to work on for my Ph.D. thesis. When I answered "feldspars", he gave me the most important advice I have ever received. "Never work on feldspars." I took this stricture to heart and have religiously avoided these minerals until this year (now I will find out whether or not the sky will fall). He went on to say "Jim Crocket has an unusual blue amphibole from the Frood mine in Sudbury; why don't you have a look at it." I "had a look at it" and rapidly contracted pernicious amphibolosis, from which I've never managed to recover. Initially, I was interested in thermodynamics and energetics, and proposed to try and calculate structural arrangements *via* molecular mechanics. I was foiled by an absence of physical data and adequate potentials, and became a crystallographer to try and measure what I was then not able to calculate.

Well, I've been doing experiments on amphiboles for some 28 years, and the calculations I had originally hoped to do have receded into the distance as I've learned more about amphibole crystal-chemistry. However, this particular paper on short-range-order in amphiboles is of a theoretical nature (*i.e.*, it contains no actual data), and hence, after 28 years, is my first paper on the topic of my Ph.D. proposal. So given this history of my involvement with amphiboles, this award is of major significance to me. Thank you, Hawley Award Committee, and thank you, MAC, for this honor.

Frank C. Hawthorne
University of Manitoba



FRANK C. HAWTHORNE