Association News

Ninth William Christian Krumbein Medallist: Felix Chayes

During the 1984 symposium entitled "Use and abuse of statistical methods in the earth sciences," jointly sponsored by the International Association for Mathematical Geology and held as part of the annual national meeting of the Geological Society of America in Reno, Nevada, Felix Chayes was presented his Krumbein Medal. This is the Association's premiere award; presenting the medal to Felix was an honor and, in a way, for me it was also something of a nostalgic trip.

Back in about 1953, I had written from England to Dr. Chayes with a request that he review what to me then was a major paper on the granites of northwest Donegal; the manuscript comprised a significant part of my recently completed Ph.D. thesis. Among numerous useful comments that I no longer remember, Felix offered the sound advice that the main body of a paper must deal only with facts, whereas the small amount of "moonshine" to which most papers are entitled must be left to the end. Over the years, I have oft recited this advice with profit to myself and to students.

Remembering this anecdote made me reflect that, Dr. Chayes internationally was considered an expert in mathematical applications in the earth sciences over 30 years ago; throughout the intervening years, he has been prolific in research, almost all of which truly has broken new ground and has caused geologists around the world to sit up and take notice—to go back to first principles and reexamine cherished ideas about modal analysis, the composition of granitoid, basaltic, and other igneous rocks, the significance of the ubiquitous percentage data of the earth sciences, and so forth.

To summarize the broad spectrum of his work, it could be said that it primarily deals with small-sample statistics and bases of petrographic inference. Much of his energy over the past decade or so has been devoted to refining a monumental file of data on volcanic rocks, although his paper at the 1984 Reno meeting was on "Efficacy of two-group discriminant functions and stability of their coefficients." By 1972, it was written that Chayes was developing an electronic equivalent of Henry S. Washington's famous tables (the 7,500 analyses listed in U.S.G.S. Professional Paper 99), a computerized Rock Infor-
The data explosion in descriptive petrography that began after World War II continues at an accelerating rate. Petrologists worldwide are collecting more and more information, including information of more and more different kinds, such that the accumulation defies effective organization by traditional scholarly procedures. Yet, little systematic advantage has been taken of the remarkable developments in electronic data storage and retrieval. In recent years, much of the work of Felix Chayes ... has been in developing means whereby petrographers can systematically use modern computational techniques, not only for storage and retrieval but also for extracting and using pertinent chemical, petrographic, and mineralogical information.

The International Geological Correlation Project [163 (International Data Base for Igneous Petrology)], chaired by Chayes, is pioneering in the design and development of a world data base for igneous petrology. This year, the group made its first major deposit of information for public use at the world data center in Boulder, Colorado. Chayes, in order to strengthen the public's ability to exploit this large and heterogeneous data base, has been refining a method for improving the efficiency of matching operations used in data extraction.