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on cooling inverts to β C_2S at 630°C and persists to room temperature. β C_2S inverts to α' at 680°C on heating, and the resulting α' C_2S reverts to β C_2S at 630°C and is stable to room temperature.

A heretofore unreported reversible inversion of NA occurs on heating at 475°C within a small temperature range. On cooling the inversion begins at 355°C, is complete at 210°C and persists to room temperature.

The temperatures are believed to be accurate to within ± 3 percent, and the heating and cooling rates are 2°C per minute.

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Sedimentary Features in the Layered Sulfide Deposits of Fredericktown, Missouri

Detailed methods of sedimentary petrology have been applied to mega- and micro-fabrics in the layered Fe-Pb-Cu-Ni-Co-Zn sulfide facies of the Fredericktown area, Missouri. The sulfides are found in the sandy-shaly transition between the Lamotte sandstone and the Bonnetterre dolomite. The objective of the study was to test the genetic value of the various depositional, diagenetic, and crosscutting features.

The main geometric patterns of the sulfide occurrences are: layers, layered disseminations, concretionary disseminations, dendritic agglomerations, and concentric nodules. The paragenetic sequence in these nodules from interior to exterior is (1) marcasite (with pyrite-bravoite grains); (2) chalcopyrite-siegenite; (3) galena-sphalerite (and wurtzite).

Top-bottom, or geopetal features involving the sulfide grains as well as the grains of the common rock-forming minerals are abundant. There are irregularities in sedimentation, convolute bedding, load casts, and features produced by the breakdown of thixotropic materials. There are transitions of the latter feature to intraformational breccia and to diagenetic disruption of the layered fabric.

The active and congruent participation of the sulfide grains in the sedimentary features suggests free growth in the gravity field during their formation. Criteria suggesting replacement of the host rock were sought, but not found. During diagenetic adjustments, local replacement may have occurred between intergrown sulfides. Diagenetic processes may have acted as collectors and/or recrystallizers of the mineral matter.

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U. S. Geological Survey Training Program for Foreign Geologists

Since 1943 the U. S. Geological Survey has planned and supervised the training of more than 500 geologists from 59 countries as a part of the United States program of technical aid to foreign countries. The program, which began as in-service training, in which carefully selected young foreign geologists worked as field assistants in Geological Survey parties, has, through the years, become increasingly dependent on our universities to provide some academic instruction. Group training, particularly in photogeology, is currently being made available where large numbers of foreign visitors have requested training in