

Abstracts of Papers

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**Petrographically-sited Stable Isotopes of the Sulfide-Bearing
Bonneterre Formation (Cambrian), Southeast Missouri**

In a sedimentologic and diagenetic study of the Bonneterre Formation, Petrographic fields as small as 0.5 mm in diameter were sampled for isotopic analysis. Constituents analyzed include (a) ooids with structured cortices, (b) sparry ooids, (c) intergranular cement, (d) articulate brachiopods, and (e) dolomite. In addition, whole-rock analyses of samples proximal to unconformities were also conducted.

Surprisingly, all constituents cluster in their $\delta^{18}\text{O}$ content within a range of -5.8 to -8.3 ‰ PDB. This similarity in values suggests (1) that diagenetic modification was produced by a common fluid (or by multiple fluids similar in composition), and (2) that isotopic alteration can have occurred in constituents that, on petrographic grounds, appear to be unaltered.