
The Occurrence of Sepiolite and Attapulgite on the Southern High Plains*

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Abstract: Sepiolite and attapulgite have been found to be common, sometimes the major, clay minerals in calcareous lacustrine deposits on the southern High Plains in West Texas and eastern New Mexico. Deflation debris derived from the basins and calcareous soils developed in the debris and in the lacustrine deposits also often contain either or both minerals. Dolomite is the carbonate commonly associated with sepiolite and calcite has a similar relationship to attapulgite in the lacustrine deposits. Pedogenic formation of sepiolite and attapulgite appears unlikely in the area studied since an association with lacustrine materials was made in a very high percentage of the occurrences.

Sepiolite was found to be highly concentrated in the $< 0.2\mu$ fraction. A similar, but less pronounced, distribution was noted for attapulgite. The studies suggest that the minerals have developed authigenically in alkaline lacustrine environments during periods of desiccation. Such an environment, interrupted by more humid periods, would have obtained during dry Pleistocene intervals. Volcanic ash is suggested as the source of the essential silica. The Mg concentration would appear to determine whether sepiolite-dolomite or attapulgite-calcite were formed.

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