Secondary Silica in Soils of West Texas. (S05-rolong113504-Poster)

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Abstract:

Secondary silica accumulations have been observed in paleosols in the Trans-Pecos and even more commonly on the Southern High Plains areas of West Texas. Secondary silica is relatively less common in land-surface soils within western portions of Texas. At one site in Presidio County (Trans-Pecos), secondary silica occurs in association with carbonate in an indurated horizon of a shallow, land-surface soil developed on an alluvial fan remnant. Silica accumulated as discontinuous coatings of variable thickness surrounding subangular basalt fragments. At another site in Presidio County, silica accumulated as pendants on coarse fragments, partially filling interstitial pores, and as discontinuous or patchy coatings on rock fragments in gravelly fan alluvium of Oligocene age. These accumulations occur in association with carbonate in a paleosol at 5- to 7-meter depth. High Plains occurrences are mostly associated with early to middle Pleistocene calcretes, which occur at variable depths. Micromorphological investigations indicate that the silica occurs as both opal and chalcedony.

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Presentation Information:

Presentation Date: Monday, November 11, 2002
Presentation Time: 9:00-11:00 am
Poster Board Number: 2022

Keywords:

Silica accumulation, Secondary silica, Soils of west Texas