tems (figs. 163, 164, and 165). Karst fissures are infilled with a reddened micrite, interpreted as eolian dust and limestone fragments derived from the fissure walls (that is, they were in contact with the Permian land surface). Cave systems are filled with a variety of types of flowstone, indicating a strong vadose imprint.

The Post Oak Conglomerate in the Wichita area mantles all of the exposed older rocks; its composition is closely related to the type of substrate. Chase (1954) was able to recognize four general categories of conglomerate: (1) Ppo–1—limestone conglomerate, (2) Ppo–2—granite-boulder conglomerate, (3) Ppo–3—rhyolite porphyry conglomerate, and (4) Ppo–4—granite–gabbro conglomerate with zeolite–opal cement.

Ppo–2 and Ppo–3 received some attention from Al-Shaieb, Hanson, and others (1980). In essence, these facies have a complex diagenetic history that involves two principal facets: an early phase of localized calcrete (caliche) formation, and a continuing breakdown of labile silicates with subsequent reprecipitation as clay minerals and ferric oxides.

The limestone conglomerate Ppo–1 has been largely ignored but is the sole facies occurring around the Slick Hills. In the area of Blue Creek Canyon, the composition of the conglomerate is closely related to the underlying geology; representative clasts of all the exposed lower Paleozoic formations are found in predictable locations. The basal conglomerate may be a coarse breccia, and shows some evidence of having been deposited adjacent to fault scarps (fig. 154, site q). The conglomerate fines upward and outward (that is, away from the Permian relief) and formed as talus and small alluvial-fan deposits. The Permian Blue Creek Canyon was filled with breccio-conglomerates that were debouched from both sides of the valley (fig. 69); the contribution from the west side was greater, and in places conglomerate composed of limestone fragments oversteps onto the Carlton Rhyolite. For the most parts, the conglomerate is massive and devoid of primary bed forms. However, finer conglomerate facies may show parallel lamination and poorly defined, medium-scale trough cross-bedding (the latter indicating transport away from exhumed Permian relief).

Some calcrete (caliche or "corn-stone") zones are developed. These pedogenic carbonates are seen as rubbly weathering micritic deposits that cement limestone pebbles (figs. 70, 71, 162). The micrite in common with other calcretes is cut by small, irregular veins of sparite (fig. 71). By uniformitarian analogy, the calcretes record periods of fan-surface stability in a semiarid environment (Leeder, 1975; Steel, 1974). The tops of the calcretes are reddened by ferric oxides that probably accumulated as eolian dust during these periods of stability. The lower parts of some calcrete profiles are characterized by green coloration; this change in color presumably records plugging of the calcrete zone and local development of reducing conditions (with consequent reduction of ferric oxide dust).

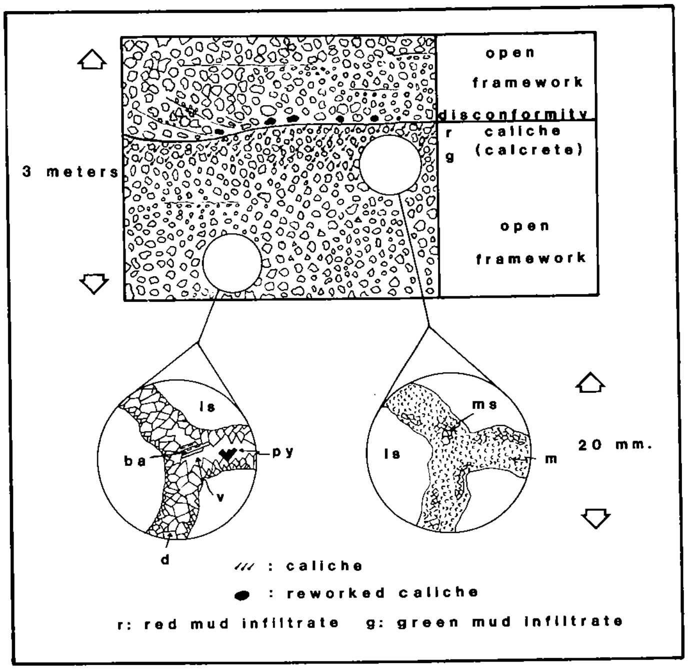


Figure 70. Schematic representation of calcrete profile developed on stable surface in Post Oak Conglomerate. A pedogenic calcrete formed at and beneath this surface. Key to thin-section sketches: *ls*, lower Paleozoic limestone clasts; *d*, drusy sparite cement; *v*, void (porosity); *py*, pyrite; *ba*, barite; *m*, micrite; *ms*, microsparite veins.

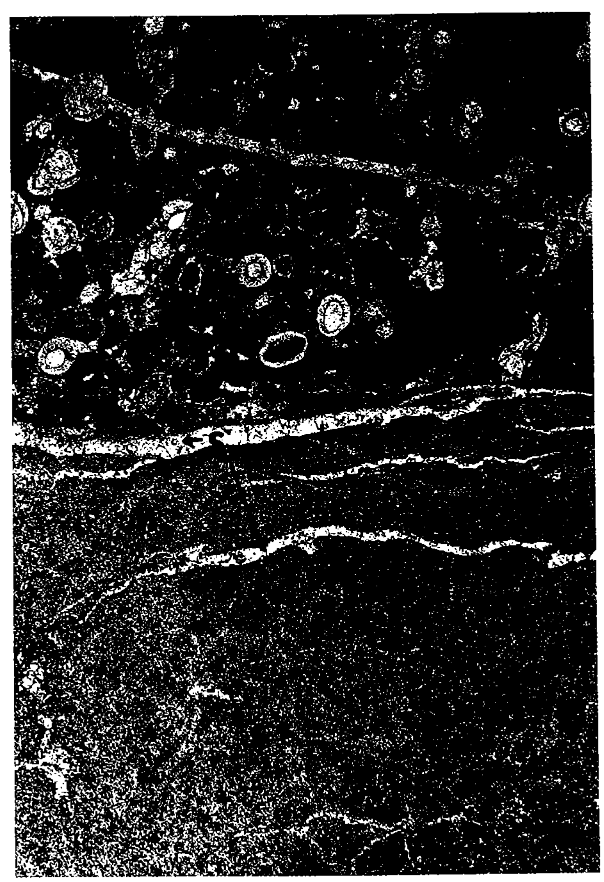

Figure 71. Post Oak Conglomerate calcrete, showing pebble of lower Paleozoic oosparite (*LP*), micrite cement (*M*), and later sparite veinlets (*S*). View approximately 2 × 1.3 cm.