high-angle reverse faulting along north-trending structures (for example, the Blue Creek Canyon Fault as mapped here) and initiated left-lateral movements on major faults parallel to the aulacogen axis in the region.

This late compression received some support from an analysis of joints conducted by Miller (1981) in an area some 10 miles west of Blue Creek Canyon; major modes can be interpreted as left- and right-lateral shears, respectively (fig. 68). The model is also in accord with the interpretation and timing of movement advanced by Brewer (this guidebook). It is possible that the north-trending segment of the Blue Creek Canyon Fault is an outlying representative of the Broxton Fault complex, which crops out to the east near Elgin and Apache (Harlton, 1972). The overall trend of faults in this complex is N. 20° W.

The analysis offered above differentiates two stress components. It must be noted, however, that some of the structural complexities could be the result of an oblique (and perhaps shifting) stress field.

A further "wild card" may be some unknown influence that rejuvenated early Paleozoic faults (associated with the initial development of the Southern Oklahoma Aulacogen) may have had on local structures.

SUB-PERMIAN UNCONFORMITY AND THE POST OAK CONGLOMERATE

The Permian Post Oak Conglomerate, facies-equivalent of the Hennessey Shale (Havens, 1977) and Wellington Formation (Chase, 1954), oversteps all the lower Paleozoic rocks exposed in the canyon. The unconformity is extremely irregular, and it is clear that the present topography of the Slick Hills is a slightly modified Permian inheritance. Because conglomerate is present on the floor of the northern part of the canyon, the valley is inferred to be a partially exhumed Permian feature (fig. 69).

Beneath the unconformity, lower Paleozoic limestones may show karst fissures and small cave sys-

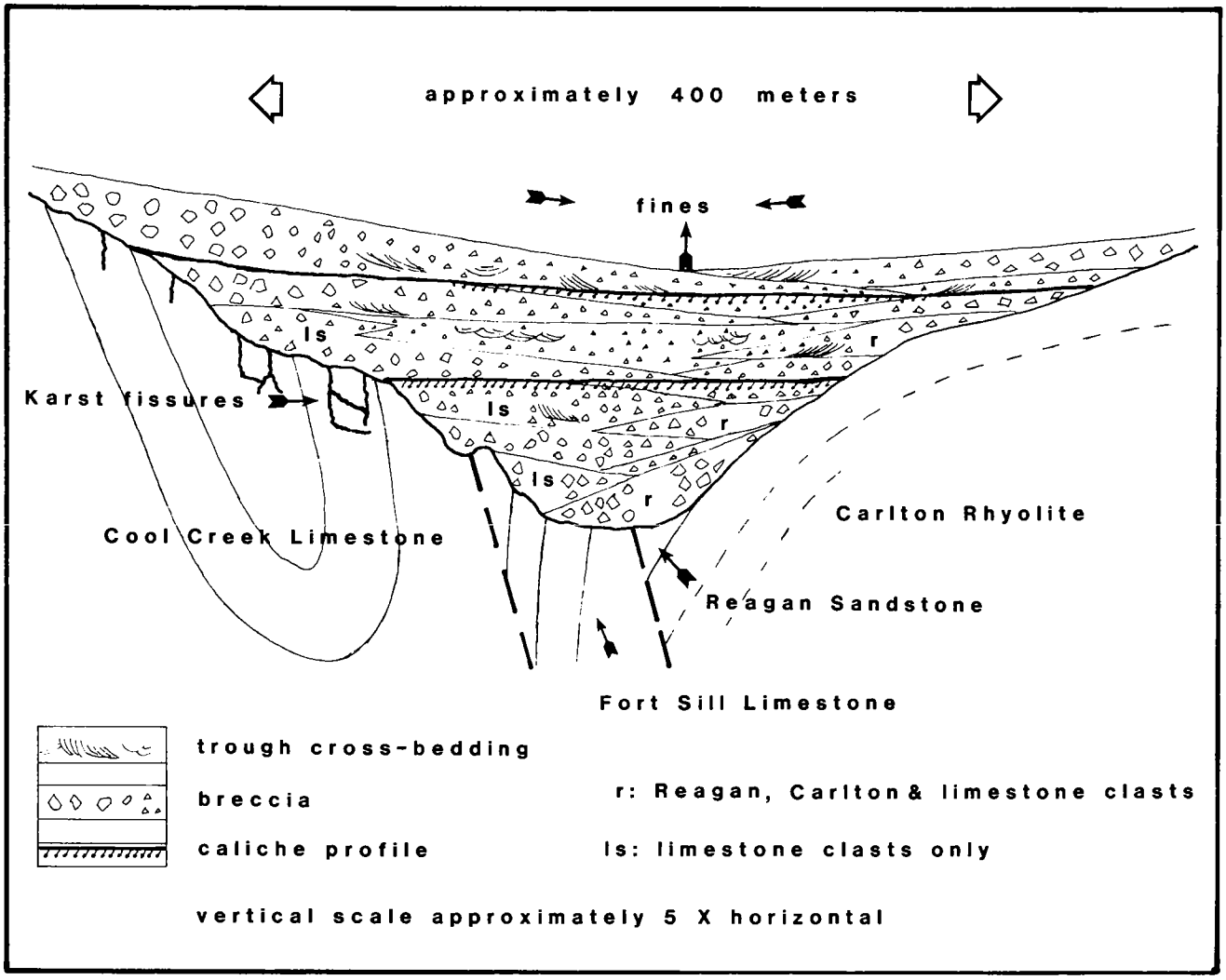

Figure 69. Schematic diagram showing nature of sub-Permian unconformity and fanglomerate infilling of northern part of Blue Creek Canyon.