explain the regional distribution of the Post Oak facies. The facies is not at the present surface in the western Wichitas, because the ground surface is above the stratigraphic level of the facies. There the shaly facies occurs, dominated by illitic clays, which appears to have a Ouachita source (Stith, 1968). As erosion proceeds, the Post Oak outcrop pattern migrates to the west.

Gilbert (1979) pointed out that the Post Oak and "granite wash" of the subsurface may not be facies equivalents, as implied by many workers. Table 11 summarizes their appropriate characteristics. It appears that the Post Oak is the result of a special weathering cycle. The "granite wash" could have started with a similar cycle, but need not have, and most workers have interpreted it as a tectonic fanglomerate. This may signify two different tectonic styles in the uplift stage, with the Post Oak representing the final style. Late movement on the Meers Fault could be related to this last uplift. The Meers does appear to cut Permian units, including the Post Oak Conglomerate.

SURFACE STRUCTURE

Decker (1939) named the highest structural part of the uplifted area of the eastern Wichitas the "Fort Sill Anticline." This reflects the Pennsylvanian deformation, as primarily determined by southerly dips in the Arbuckle Group south of the igneous outcrops on Fort Sill, and northerly dips in the Slick (Limestone) Hills. Because layering in the granites, and the granite–gabbro contact, can also be used for structural control, more detailed analysis of the structure is possible, as shown in figure 20. Two anticlinal arches can be traced westward from Fort Sill, and these are designated the "North Anticline" and "South Anticline." The axial regions correspond generally to the area of most exposure of gabbro. Although the height of the gabbro is one measure of uplift, local relief on the gabbro unconformity precludes its use as the sole measure. Elevations for the granite–gabbro contact are given in slanted (italic) numerals in a few prominent locations. Elevations of the presently exposed gabbro, above which the granite–gabbro contact must lie, are given in upright numerals as additional reference points. A gentle syncline to undulating plane exists between the anticlinal axes; these axes are perhaps more akin to monoclinal flexures. Within the Carlton Rhyolite of the Fort Sill area, Schoonover (1948) identified a syncline. This feature may be Cambrian in age, rather than Pennsylvanian. There are dips in the Meers Quartzite that are discordant with those in the Carlton Rhyolite and, in both, to the granite intrusive contact.

The Wichita Mountains form a strikingly lineated terrain as seen in the field, and in topographic maps and aerial photographs. Figure 21 is a high-altitude NASA photograph taken in May 1973 across the central part of the eastern Wichitas. Quanah Parker Lake (Stop 5), in the Wichita Mountains Wildlife Refuge, is in the lower center. A section of State Highway 115 between Cache (out of view to the south) and Meers (in the far upper right), and a section of State Highway 49 running generally east-west, can be used as orientation in the photo. French Lake (Stop 6) is in the center far west. Gilbert (1982) has discussed the lineaments and their relation to the fracture system. Most of the obvious lineaments are in granite. The granite shown in the upper half of the figure is the Mount Scott sill, overlying the Raggedy Mountain Gabbro Group cropping out both on the north, and on the south in the Central Lowland

TABLE 11.—COMPARISON OF POST OAK CONGLOMERATE AND GRANITE WASH CHARACTERISTICS

	Post Oak	Granite Wash
a.	surface and near surface	subsurface
b.	Permian	dominantly Pennsylvanian and some Permian
c.	reflects local source; no significant transport	reflects more regional source, noticeable transport
d.	not directly related to faults	related to uplifted blocks and faults; higher relief sources
e.	clast size 10-100 cm; rounded and spherical igneous clasts	variable clast size with angular igneous clasts
f.	non-marine	much non-marine but with marine interruptions