

Figure 51. Honey Creek Formation; basal breccia. Rock composed of angular rhyolite fragments, shell fragments, and quartz and glauconite grains that have been cemented by sparite. Carbonate is stained. View 3 × 2 cm.

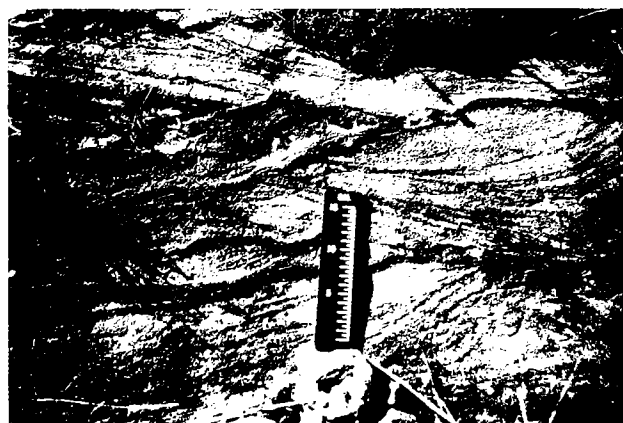


Figure 52. Honey Creek Formation; medium-scale trough cross-bedding. Rock consists of interlayered shell fragments (mostly pelmatozoans and brachiopods) and quartz-glauconite silt (interlayering visually defines cross-bedding, owing to differential weathering). Cement is sparite.

This is particularly the case toward the northern end of the exposure, where the formation is sandwiched between two important branches of the Blue Creek Canyon Fault (fig. 160). Intraformational conglomerates apparently are more common toward the top of the formation (Brookby, 1969), hinting that a small thickness of Ordovician rocks may be present. The depositional environment is somewhat enigmatic; mudstones, and the absence of stromatolites, may indicate a little deeper water than had occurred previously.

Arbuckle Group: Area B (West of Blue Creek Canyon Fault)

The two Ordovician elements of the Arbuckle Group encountered are the McKenzie Hill and (overlying) Cool Creek Formations. In mapping the former, Brookby (1969) was able to recognize a lower noncherty member and an upper cherty member. The



Figure 53. Honey Creek Formation; biosparite. Pelmatozoan fragments are cemented by sparite; minor quartz silt and glauconite are present. Considerable diagenetic loss of carbonate is indicated by sutured grain contacts. Carbonate is stained. View 4 × 2.5 cm.

first appearance of chert is apparently a chronostratigraphic marker. Only the upper member is present in the area under consideration here.

The cherts of the upper member represent the oldest conspicuous cherts in the Arbuckle Group, and occur mostly as ovoid nodules elongated along bedding. Siliceous sponges are a probable source of the silica. The carbonates of the member are a monotonous sequence of well-bedded, medium- to light-gray mudstones, punctuated by intraformational conglomerates and calcareous skeletal sandstones. Small amounts of patchy dolomite are present. Fossils are not common, although stromatolites are present.

The Cool Creek Formation, which is more than 1,000 ft thick (Brookby, 1969), is the most varied of the Arbuckle Formations. The base of the formation is clearly marked by the sudden appearance of quartz sand, which persists throughout the lowest 150 ft of section. Quartz constitutes as much as 30 percent of some sections, and is mixed with oolites, intraclasts of micrite pellets, and minor shell fragments. Gastropods are the most commonly seen macrofossils. Sedimentary structures include small-scale cross-bedding (fig. 157), symmetrical ripple marks, in-