GEOLOGIC NOTES

Wilkie Ranch Formation, New Permian Unit in Finlay Mountains, West Texas

JOHN M. CYS
Midland, Texas 79701

The Finlay Mountains (Fig. 1) are in West Texas along the southern edge of the Diablo platform on the north side of the Marfa basin. They contain a Permian sequence that is important to the understanding of the regional Permian stratigraphy and geologic history. Albritton and Smith (1965) described the sequence in detail and designated it "Leonard Series (undivided)." This sequence consists of interbedded marlstone, limestone, and calcirudite (pebble-sized limestone clasts in a lime-mud matrix) with marlstone being the dominant lithology (Fig. 2). Myers (1972) described patch reefs in this sequence. At the top is an angular unconformity with overlying Lower Cretaceous strata. The base is not exposed. Albritton and Smith (1965, p. 8) gave an estimated minimum thickness of 1,650 ft (503 m) for the exposed part of the sequence. Myers (1972) reported a thickness of 1,856 ft (566 m) for the exposed part. (In a recent paper—Cys, 1975—I erroneously stated that Myers' thickness was based on data from a recent well that penetrated the unexposed part of the sequence.) The Gulf 1 J. Burner-State "B" well (Fig. 3) penetrated the unexposed part of the sequence. On the basis of sample and mechanical-log examination I consider the penetrated part to be approximately 230 ft (70 m) thick and to consist dominantly of calcirudite (Fig. 4). Myers (1972) reported reworked Wolfcampian fusulinids in the basal part of the calcirudite. Accordingly, this would suggest that the contact with the underlying Hueco Limestone should be regarded as a minor unconformity.

Fusulinids and other invertebrates date the sequence as Leonardian (Albritton and Smith, 1965). Two critical fusulinids not present in Albritton and Smith's collections, but reported by Myers (1972), are listed in Figure 2. Closest Leonardian exposures are 7 mi (11 km) south in the Malone Mountains and 25 mi (40 km) east in the Sierra Diablo (Fig. 1). The Briggs Formation in the Malone Mountains is 630 ft (192 m) of dominantly gypsum containing interbedded limestone and dolomite. Diagnostic brachiopods that date it as Leonardian are present only in the basal lime-

Albertson and Smith (1965). The upper part is essentially unfossiliferous. Albritton and Smith (1965) considered the Briggs to be partly equivalent to the sequence in the Finlay Mountains solely on the basis of two rather weak assumptions. The first assumption is that the basal limestone of the Briggs is equivalent to the limestone unit below the calcirudite at the top of the Finlay Mountains sequence (see Fig. 2). This assumption is based on the presence of the brachiopod Composita mexicana in both limestones, each of which is the only prominent limestone unit in their respective formations. Both limestones have abun-