

POST QUARRY

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Lat. 33° 31' 17" N, Long. 101° 18' 54" W, 9 miles SE of Post, Garza County, Texas; ownership private (Fig. 1). The Post quarry lies in the Dockum Formation above the "Trujillo Sandstone," which is not well exposed in this area (see Chatterjee, 1986, and Frelief, 1987 for a discussion of Dockum Formation status). The quarry is stratigraphically lower than the unnamed massive sandstone on the Lott and Macy ranches immediately to the west. Chatterjee (1986) named the section in which lies the Post quarry the Cooper Member. The relationship of the Cooper Member to the of the Dockum is unclear at this time (Fig. 2).

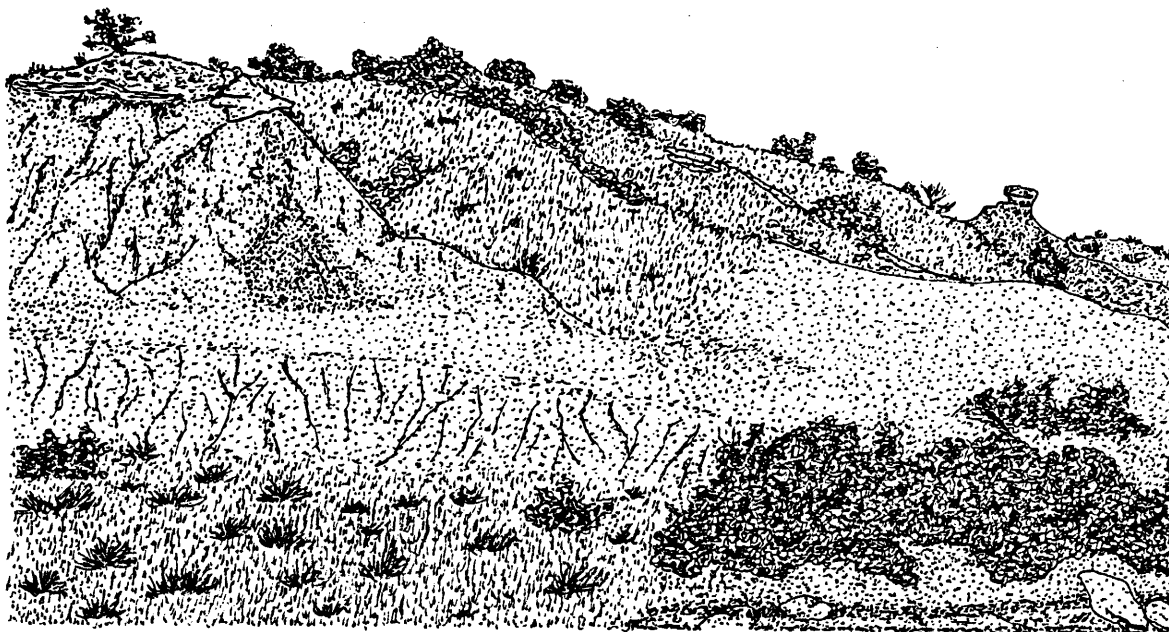


FIGURE 1. The Post quarry (drawing by R. Pence).

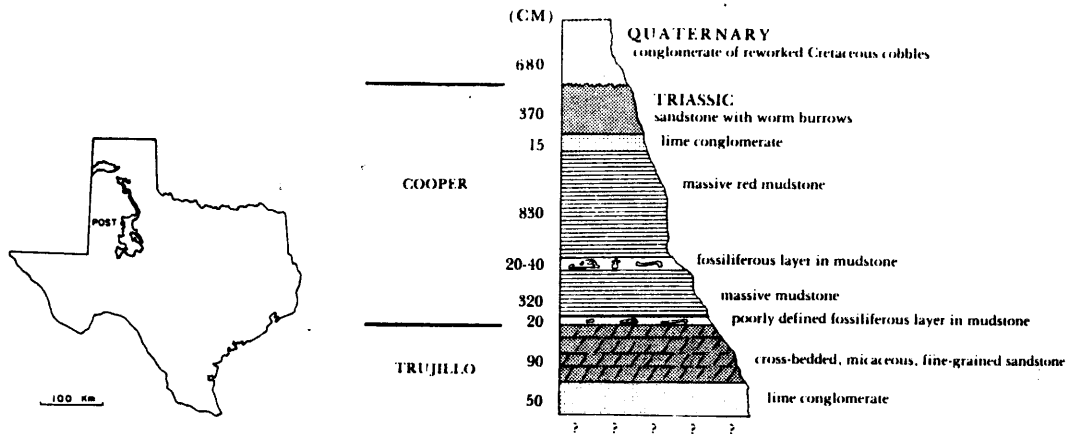


FIGURE 2. A, Outcrops of the Dockum Formation in west Texas. B, Stratigraphic section of the Post quarry (after Chatterjee, 1986).

FAUNA AND TAXONOMIC NOTES

The vertebrate fauna of Post quarry includes: Dictyocephalus Laticopus, Postosuchus kirkpatricki, Desmatosuchus haplocerus, Paratyphorax, Typothorax, Nicrosaurus, Technosaurus smalli, Pachygenelus milleri and a bird ("Protoavis").

Among the fossils uncovered at the quarry are many specimens which have not yet been studied. Among the tentatively identified specimens are: a small coelurosaur, pterosaurs and numerous unassociated material of a possible squamate. There is still much material that has not been prepared or is not diagnostic at this time.

The genus Dictyocephalus has been assigned to the small metoposauroid by Davidow-Henry (1987, 1989). The well preserved skull of Laticopus matches well with the holotype (Wilson, 1948). The skull, along with some postcranial material collected from the quarry, is under study by Dr. John Bolt at the Field Museum of Natural History, and has been assigned tentatively to the family Brachyopidae (S. Chatterjee, oral commun. 1989). For a detailed description of the other taxa from the Post quarry, see Chatterjee (1983, 1984, 1985, 1987) and Small (1985, 1989).

Nicrosaurus is known from two skulls from the Post quarry (Chatterjee, 1986). One is at the Dallas Museum of Natural History, and the other is at Texas Tech University. The discovery of Typothorax (sensu Long and Ballew, 1985) from the quarry is the first from the Dockum.

No plant material has been recovered from the quarry, or from the immediate area. The only invertebrates collected from the quarry are some well preserved unionids.

ASSOCIATED FAUNA AND AGE

There has been very little collecting of fossil vertebrates in Garza County. There has been some fragmentary Typothorax armor collected from the adjacent Rocker A oil field in 1986 (Small, 1989). Just north of the Post quarry, on the Lott Ranch, there are well exposed upper Trujillo sediments. An "advanced" Rutiodon was collected from this ranch by Sankar Chatterjee in 1980. Adjacent to the Lott ranch is the Macy Ranch, also containing upper Trujillo sediments. Paratypothorax has been identified from here, but not collected.

The fossiliferous mudstone of the Post quarry lies above the the Trujillo Sandstone. In this area of Garza County and in part of Crosby County, there is an upward and downward thickening of the Trujillo (T. Lehman, oral commun., 1989).

There has been some confusion as to the age of the Dockum. Dunay and Fisher (1979) state that the Dockum is Carnian in age, based on palynological studies. Unfortunately, no samples have been studied from the higher Dockum sequences in Garza County. Long and Ballew (1985) state that Typothorax occurs in the upper Petrified Forest Member of the Chinle, and is absent in the Dockum. However, good Typothorax material has now been recovered from the quarry.

The vertebrate assemblage of the Post quarry suggests that the upper limit of the Dockum Formation may extend to the early Norian. Nicrosaurus, Postosuchus and the aetosaurs from the Post quarry have similar forms in the Late Triassic (Carnian-Norian) assemblages of Germany. Technosaurus and Pachygenelus have similar forms in the Late Triassic-Early Jurassic age sediments of Africa. The presence of Typothorax and Nicrosaurus in this quarry affords a straightforward correlation with the Chinle Formation of Arizona and New Mexico. However, the upper limit of the Dockum probably does not extend to the uppermost Norian, as the typical Germanic Knollenmergel fossils such as tritylodonts and plateosaurs are absent here.

SEDIMENTOLOGY AND TAPHONOMY

The Post quarry consists of a thick red mudstone unit, probably laid down in a floodplain deposit. The bones occur in a distinct, 30-cm-thick layer. The bones of the larger specimens such as Postosuchus and Desmotosuchus are disarticulated but associated. There are many disassociated bones of smaller animals scattered throughout the quarry. A catastrophic event, such as a flash flood, may have caused their death, followed by another flood, which disarticulated the bones, orienting them with the current, and burying them (Chatterjee, 1985).

HISTORY AND COLLECTION

The early history of the Post quarry is unclear. A few years prior to 1980 some preliminary collecting was done. This collection is housed in the Dallas Museum of Natural History. Extensive, systematic collecting at the quarry began in 1980 by

Texas Tech. These collections are housed at the Museum of Texas Tech University. Research at this quarry by Texas Tech still continues.

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