

A NEW OCCURRENCE OF THE PROBLEMATICAL  
FOSSIL *KIRKLANDIA TEXANA* FROM THE CRETACEOUS  
OF TRANS-PECOS TEXAS

RICHARD H. FLUEGEMAN, JR.  
DEPARTMENT OF GEOLOGY  
BALL STATE UNIVERSITY  
MUNCIE, INDIANA

A fragmentary specimen of the problematical fossil *Kirklandia texana* Caster was collected along U. S. Highway 67 at the town of Shafter, Presidio County, Texas (Text-figure 1). *Kirklandia texana* was originally described by Caster (1945) from the Paw Paw Formation of Denton County, Texas and to date this is the only reported occurrence of this problematical fossil. *Kirklandia texana* has been interpreted as a fossil jellyfish (Caster, 1945) and as a trace fossil (Fursich and Kennedy, 1975). The identification of the Shafter specimen as *Kirklandia texana* Caster was made by comparison to illustrations in Caster (1945) and in Fursich and Kennedy (1975) and by comparisons to the type material at the University of Cincinnati Geological Museum. The occurrence of this specimen of *Kirklandia texana* is interesting in that it is preserved as a cast. Additionally, this is the first reported occurrence of *Kirklandia texana* from the Cretaceous of West Texas and is the only report of *Kirklandia* from the Western Cordillera region.

The specimen was collected from the Lower Cretaceous Shafter Formation of Presidio County, Texas. The section from which it was collected is located on the west side of U. S. Highway 67, 0.5 km south of the intersection with the Shafter town road. This is the type of area of the Shafter Formation. The specific bed from which the specimen was collected is 1.7 m above the base of the outcrop and consists of fine-grained limestone with scattered, small fossil fragments.

No planktonic foraminifera were obtained from the Shafter Formation at this locality and no diagnostic ammonites were collected. Fossils of the benthic foraminiferan *Orbitolina texana* were collected from the Shafter Formation and, based on this, the Shafter is placed within the *Orbitolina texana* benthic foraminifera biozone. This would make the Shafter Formation Early Albian in age and equi-

valent to the Glen Rose Formation of the Big Bend region to the east (Scott and Kidson, 1977) and to the Bluff Mesa Formation of the Quitman and Eagle Mountains.

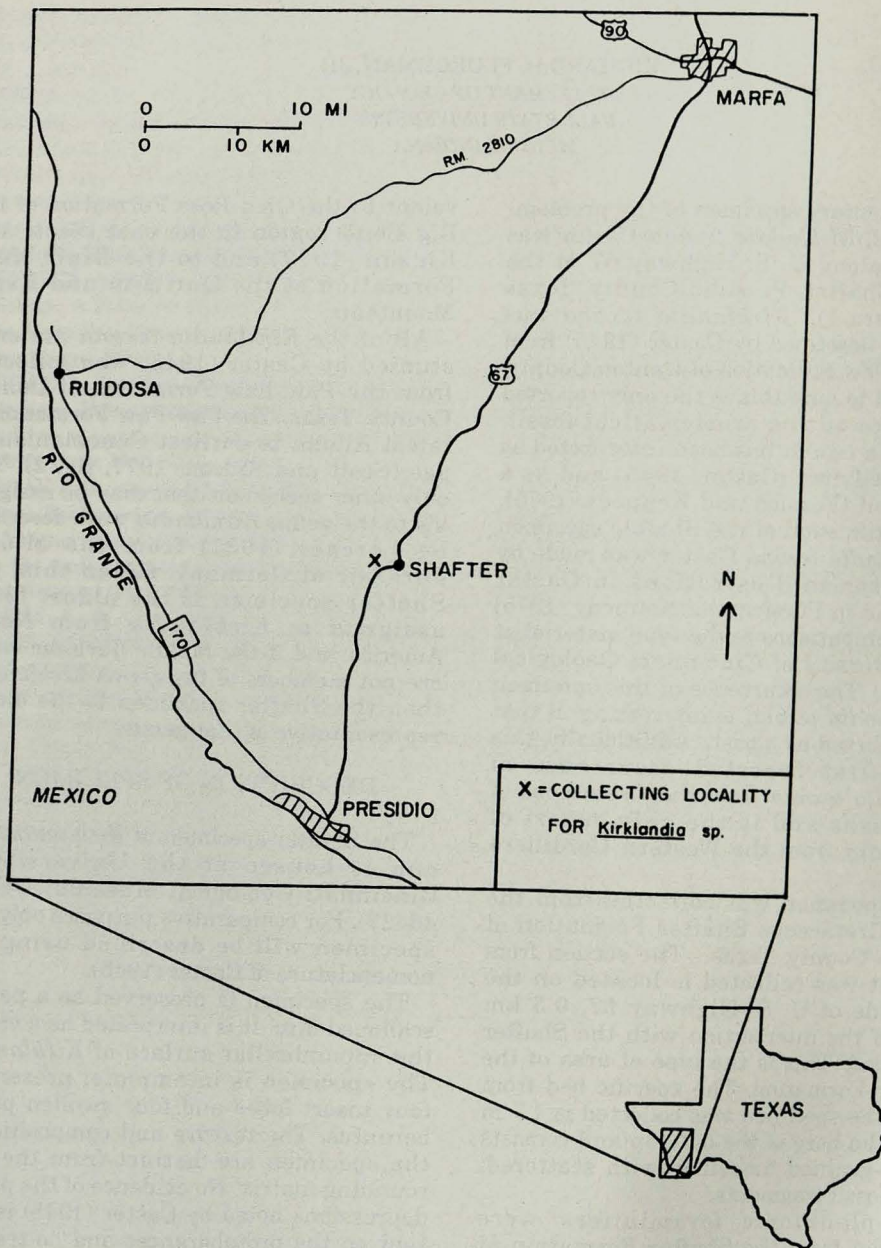
All of the *Kirklandia texana* material studied by Caster (1945) was collected from the Paw Paw Formation of Denton County, Texas. The Paw Paw Formation is latest Albian to earliest Cenomanian in age (Scott and Kidson, 1977, fig. 2). The only other specimens that may be assignable to the genus *Kirklandia* were described by Lorcher (1931) from the Middle Jurassic of Germany. Given this, the Shafter specimen is the oldest fossil assigned to *Kirklandia* from North America and if the Middle Jurassic forms are not members of the genus *Kirklandia*, then the Shafter specimen is the oldest representative of that genus.

#### DESCRIPTION OF SPECIMEN

The Shafter specimen of *Kirklandia texana* is housed at the University of Cincinnati Geological Museum (UCGM 46427). For comparative purposes only, the specimen will be described using the nomenclature of Caster (1945).

The specimen is preserved as a partial scalloped disc. It is interpreted as a cast of the subumbrellar surface of *Kirklandia*. The specimen is incomplete, preserving four insert lobes and four swollen protuberances. The texture and composition of the specimen are distinct from the surrounding matrix. No evidence of the paired depressions noted by Caster (1945) is present on the protuberances and no trace of the sulcar star is present. One protuberance does show evidence of a tubular structure, designated a radial canal by Caster (1945). There is also some suggestion of a central elevated structure on the specimen.

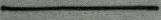
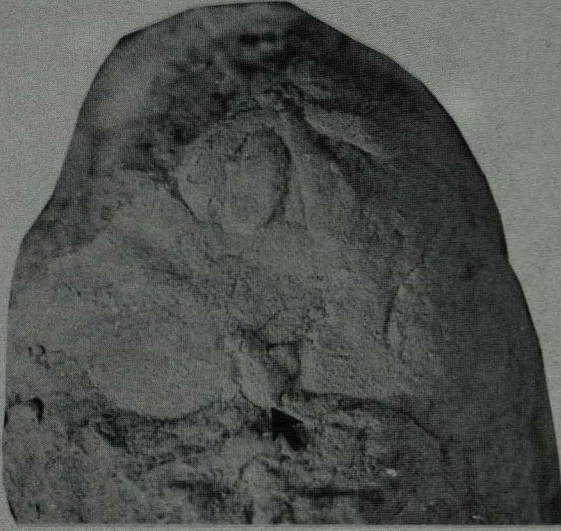
One unusual feature of the Shafter specimen that has not been reported from



Text-figure 1. Index map of a part of Trans-Pecos Texas showing the collecting locality for *Kirklandia texana*.

Text-figure 2. *Kirklandia texana* Caster (UCGM 46427). 1. Photo of UCGM 46427 showing scalloped outline of subumbrellar surface and position of swollen protuberances. Arrow points to detached swollen protuberances. Detail of oral area showing swollen protuberances. Scale bar = .25 cm.

1



2



other *Kirklandia* specimens is the presence of a detached swollen protuberance. This structure is lying upon one of the insert lobes and is about the same size as the other four swollen protuberances preserved on this specimen.

Because the specimen of *Kirklandia texana* from the Shafter Formation is incomplete, a precise measurement of the fossil is not possible. Since the central area is preserved, however, it seems likely that the distance from the edge of an insert lobe to the central area represents a radius of the subumbrellar disc. Therefore, it is possible to estimate the diameter of the original specimen. The measured radius on the Shafter specimen is 20 mm giving an approximate diameter of 40 mm. This value is near the minimum diameter reported by Caster (1945) for the Paw Paw specimens of *Kirklandia texana*.

The specimen of *Kirklandia texana* from the Shafter Formation of West Texas is illustrated in Text-figure 2.

The morphologic nomenclature and the size of the specimens of *Kirklandia texana* from the Paw Paw formation correspond well with the specimen of *Kirklandia* from the Shafter Formation. Given these simi-

larities, the specimen of *Kirklandia* from the Shafter Formation of West Texas is assigned to *Kirklandia texana* Caster.

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