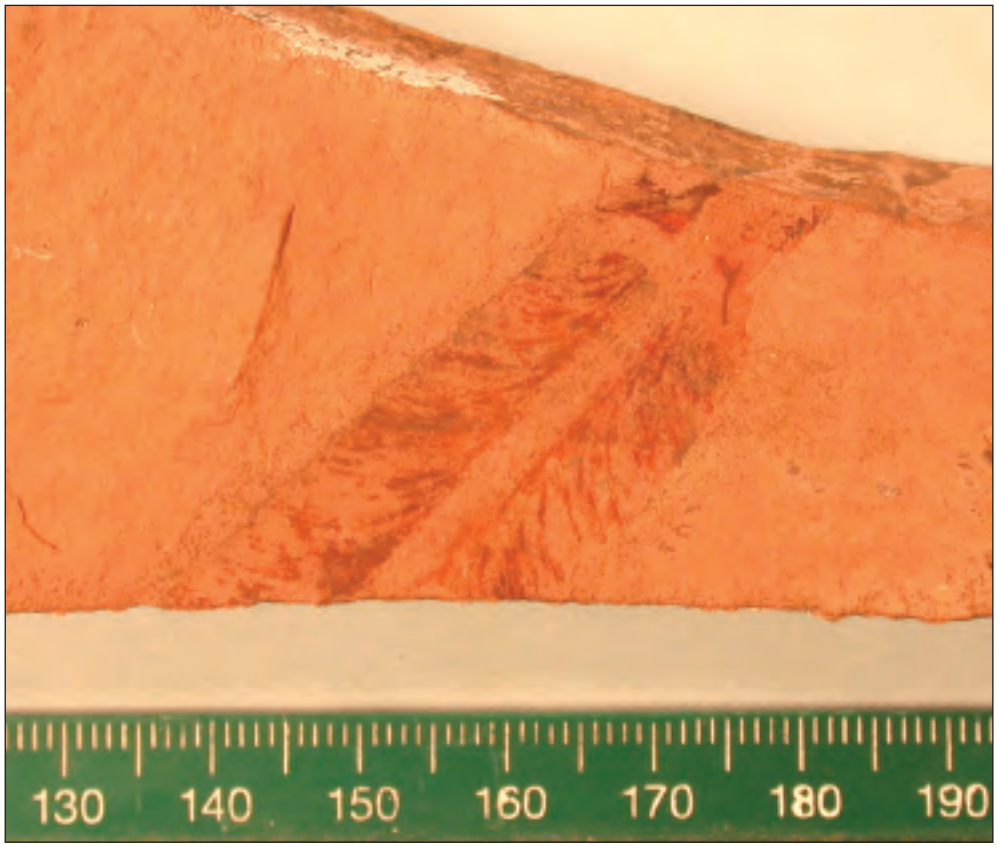
Gallery of Geology
Early Mississippian fossil plant from New Mexico



The oldest well-known fossil plants from New Mexico are from the Middle Pennsylvanian (Atokan) Sandia Formation in the northern part of the state, but a few isolated records have been reported from Upper Devonian and Upper Mississippian strata in southern New Mexico (e.g., Read and Mamay 1964; B. S. Kues written comm. 2004). Most of the Paleozoic strata in New Mexico older than the Sandia Formation are of marine origin, so they should not normally yield land-plant fossils. An unusual record, recently discovered by us, is a single land-plant fossil from the basal part of the Early Mississippian (Kinderhookian) Caballero Formation in Deadman Canyon of the Sacramento Mountains near Alamogordo, Otero County (Pray 1961).

This fossil is an incomplete pinnule of a seed fern (pteridosperm). It has a wide midvein and lateral veins that arise acutely from the midvein and strike the margin at an angle. It thus resembles the seed fern genus *Neuropteris* (cf. Tidwell 1998, pp. 87–88) but is too incomplete to assign to a genus, so it is best identified as an indeterminate neuropteroid (D. Chaney and W. DiMichele written comm. 2004).

The bed that contains the plant fossil is a well-indurated, sandy lime mudstone of dark-gray color that weathers to grayish orange. It is part of a succession of similar limestone beds intercalated with shale and nodular limestone. These strata of the lower part of the Caballero Formation yield a variety of brachiopods (Laudon and Bowsher 1941, 1949). They clearly were deposited in a shallow marine setting, so the seed fern pinnule must have been washed in or blown from land to its site of fossilization. This transport of the seed fern pinnule from a terrestrial to a marine environment also explains why further search at the site yielded no additional plant fossils.

Seed ferns were abundant during the Carboniferous, but Mississippian fossil plants are relatively rare in the western United States (Tidwell et al. 1992). The single seed fern fossil from the Caballero Formation qualifies as both the oldest Mississippian fossil plant now known from New Mexico as well as an unusual record of a pre-Pennsylvanian fossil plant from the state.

References

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