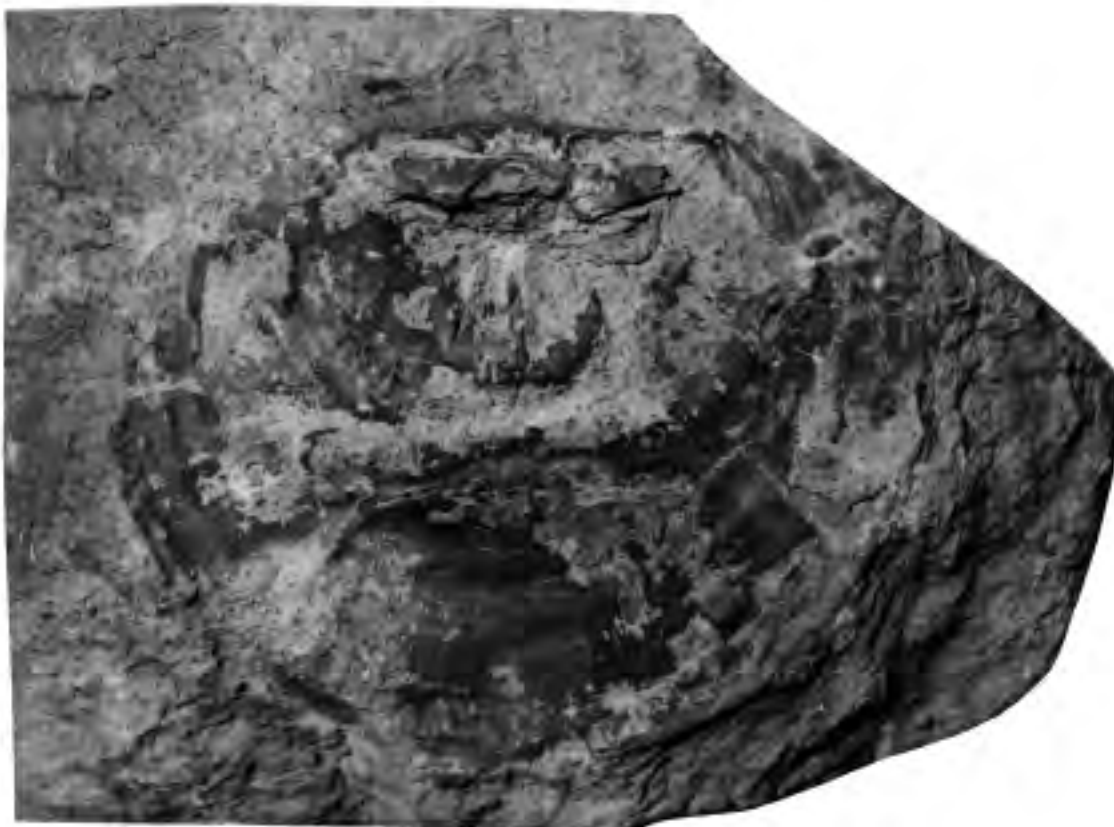


Gallery of Geology

Giant Pennsylvanian brachiopod



Brachiopods are abundant and conspicuous fossils in Pennsylvanian marine strata of New Mexico; about 120 species are known from rocks of this age in the state. Most are relatively small, less than 30 mm (~1 inch) wide, but a few productoids and spiriferids attain widths of 70–80 mm (~2.75–3 inches). The largest known New Mexico Pennsylvanian brachiopod, however, is the specimen illustrated above (natural size), a pedicle valve of the strophomenid genus *Derbyia*. This specimen is from Missourian (Late Pennsylvanian) strata near highway NM-4, a few miles north of the town of Jemez Springs.

Several species of *Derbyia* occur in the Pennsylvanian of New Mexico. The genus is distinguished by a moderately convex brachial (upper) valve and a flat to gently convex pedicle (lower) valve bearing an oblique shelf (cardinal area) along the hingeline. Both valves are ornamented with many fine radial riblets. Pennsylvanian species of *Derbyia* in New Mexico attain moderate sizes (valves 40–50 mm (~1.50–2 inches) wide are occasionally found), and are common constituents of shallow marine faunas. The specimen illustrated here, embedded in a block of gray limestone, displays the interior surface of the pedicle valve. The cardinal area and triangular pedicle opening are visible along the top (posterior end) of the specimen, and the pair of shallow, spoon-shaped structures situated centrally below them are platforms for the attachment of muscles used for opening and closing the two valves. The

maximum width of this specimen is approximately 120 mm (~4.75 inches), and it is approximately 90 mm (~3.50 inches) long.

The unusually large size of this valve, as well as its subcircular shape, wide hingeline, and low cardinal area, indicates assignment to *Derbyia jacksboroensis*, a species first described by Dunbar and Condra (1932) from Missourian strata in north-central Texas. The holotype of this species is “only” 89 mm (~3.50 inches) wide, making this New Mexico specimen an unusually large representative of what is probably the largest North American Pennsylvanian brachiopod species.

This New Mexico specimen was discovered by David R. Swenson in 1976 while he was working on his M.S. thesis, “Stratigraphy, petrology, and environments of deposition of the upper part of the Pennsylvanian Madera Formation near Jemez Springs, New Mexico.” The specimen is catalogued as no. 3735 in the paleontology collections of the University of New Mexico.

Reference

Dunbar, C. O., and Condra, G. E., 1932, Brachiopoda of the Pennsylvanian System in Nebraska: Nebraska Geological Survey, Bulletin 5, 2nd series, 377 pp.

— Barry S. Kues