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Dimerelloid brachiopod *Dzieduszyckia* from Famennian hydrocarbon seep deposits of Slaven Chert, Nevada, USA, with insights into systematics and paleoecology of the Dimerelloidea

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This study describes an assemblage of *Dzieduszyckia* brachiopods preserved in sedimentary barite deposits from the Famennian, Upper Devonian of Nevada, USA. The brachiopods lived in a methane-seep environment like those described from Sonora, Mexico, and the Western Meseta, Morocco. Although the original carbonate fabrics are not preserved, pockets of limestone within the brachiopod barite are depleted in with δ13C values ranging from -31.1 to -27.3‰ VPDB. The fossils are preserved as internal and external molds only but record enough detail to demonstrate key internal features of *Dzieduszyckia* such as a pronounced dorsal septum, septalium, and vertical dental plates. The lack of common bifurcation or trifurcation of the costae as well as larger size of the shells recommends against inclusion within *D. sonora* as previously published. Based on the number of costae per width of shell, it is possible that there are two distinct species in Nevada, like other localities in Morocco, the Urals, and South China. These new data expand the body of knowledge of these earliest dimerelloids and it is hypothesized that this seep-dwelling macrofauna arose from depauperate-successful lineages between the Famennian biotic crises. As nearly all global *Dzieduszyckia* deposits are associated with active tectonic margins, it is also suggested that tectonically-driven methane expulsion in low nutrient waters spurred the evolution of dimerelloids.

Key words: Brachiopoda, Dimerelloidea, hydrocarbon seeps, chemosynthesis-based communities, Devonian, Nevada.

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