

PALEOBIOGEOGRAPHIC SIGNIFICANCE OF FAMENNIAN ECHINODERM FAUNAS FROM NORTHWESTERN CHINA

MAPLES*, C.G., Kansas Geological Survey, 1930 Constant Ave., Lawrence, KS 66047; WATERS, J.A., Department of Geology, West Georgia College, Carrollton, GA 30118; LANE, N.G., Department of Geological Sciences, Indiana University, Bloomington, IN 47405; HOU Hong-fei, Institute of Geology, Chinese Academy of Geological Sciences, Beijing, Peoples Republic of China

A diverse (>200 specimens representing more than 20 taxa) Famennian echinoderm fauna has been collected from the Hongguleleng Formation, Junggar Basin, Xinjiang, Uygur Autonomous Region, Peoples Republic of China. Famennian faunas are relatively poorly known on a global basis, Famennian echinoderm faunas in general are very poorly known, and echinoderm faunas of any age from China are virtually unstudied. Echinoderms are highly endemic, which makes them relatively poor for global biostratigraphy, but excellent for use in biogeographic studies. Because Frasnian and Famennian faunas are noted for their general lack of endemism, echinoderms may be critical, sensitive indicators of Famennian biogeographic provinces. Preliminary analysis indicates that this Chinese Famennian echinoderm fauna is dominated by blastoids and inadunate, small-calyx camerate, and flexible crinoids, many of which show morphological characters that are intermediate in nature at higher classificatory levels between older Devonian and younger Carboniferous taxa. The taxonomic composition of this fauna clearly indicates that diversification and re-radiation in the aftermath of the Frasnian–Famennian extinction event was well underway before the close of the Famennian. The most similar faunas are from Famennian rocks of England and, possibly, Germany. Brachiopods, corals, and trilobites of this age also show similarities between northwestern China and western Europe. These two areas were high latitudinal and tropical, respectively, during deposition, therefore their similar composition may represent latitudinal contraction associated with global cooling or a nearshore migratory pathway between the two areas via Kazakhstan and Poland.