

from Saudi Arabia – establishing an important intermediary between dyad-dominated Cambrian cryptospore populations and the beginnings of tetrad-dominated cryptospore morphologies in the Middle Ordovician.

15: 1:45 PM-2:00 PM

Presenter: Carr, Robert K.

A Big Fish Story: New Links Between the Appalachian Basin and Morocco in the Late Devonian

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Late Devonian basins on the North American craton (Appalachian, Michigan, Illinois, and Iowa Basins) have been considered to represent biologically isolated regions affecting the distribution of vertebrates. However, new fieldwork and systematic analyses has revised our understanding of these interbasinal barriers. This work has extended beyond the North American craton to the eastern Anti-Atlas Mader and Tafilalt basins of Morocco. Assumed barriers between the Appalachian and Tafilalt basins include the intervening Appalachian mountain system and the Rheic Ocean (terrestrial and deep water barriers). Our ability to compare geographically separate faunas is limited by sampling biases. The Cleveland Shale fauna (Famennian), with its 67 vertebrate taxa, is the best known for the Late Devonian. The Moroccan Famennian fauna is second to the Cleveland Shale with only 32 taxa. Other North American basins are less well represented. Numerical differences accentuate the impression of endemism and the lack of sympatric species. From a comparison of the two best-known Famennian faunas (Cleveland and Morocco) it is becoming clear that these faunas are more similar than previously believed. This is best demonstrated by the distribution of *Dunkleosteus* and *Titanichthys*. *Dunkleosteus terrelli* is now recognized across North America from California to the Appalachian Basin. Work in progress, by colleagues, suggests the extension of this species into Morocco. *Titanichthys*, equally, is widely dispersed. A recent discovery suggests that the Moroccan species, *T. termieri*, is present in the Appalachian Basin. Additionally, the presence of mylostomatid arthrodires in the Appalachian Basin and Morocco, *Deirosteus* (a holonematid arthrodire) in Missouri and New York, and *Protitanichthys* (an arthrodire) in Michigan and Appalachian basins all point to limited barriers among these basins. These questions can only be further addressed by renewed fieldwork in each of the basins and the systematic review of the taxa involved.