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**Not the oldest evidence for complex life on land: the Juniata Formation (Upper Ordovician, Pennsylvania)**

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NEIL S. DAVIES<sup>1</sup>, MICHAEL C. RYGEL<sup>2</sup>,  
AND MARTIN R. GIBLING<sup>1</sup>

*1. Department of Earth Sciences, Dalhousie University, Halifax, Nova Scotia B3H 4J1, Canada ¶ 2. Department of Geology, State University of New York, College at Potsdam, New York 13676, USA.*

The Juniata Formation comprises Upper Ordovician sandstone and mudrock that crops out in the Appalachian region of the eastern United States from Pennsylvania to Tennessee. An outcrop at Potters Mills, central Pennsylvania, has previously been attributed to a terrestrial environment. Because this outcrop contains numerous sub-vertical burrows and evidence for pedogenesis, it has regularly been cited as the oldest evidence for several aspects of continental ecosystem development, including the first evidence for terrestrial infauna and animal-plant interactions. We present evidence from both original fieldwork and published literature that collectively sheds considerable doubt on previous interpretations. The evidence suggests that the Juniata Formation at Potters Mills was deposited in a marginal marine setting and, as such, no evidence for early life on land can be inferred from its strata. This has significant implications for the numerous studies that have cited the Juniata Formation as a crucible of terrestrial evolution. Removing it from the dataset of studies that deal with the history of life on land, we conclude that currently the majority of fossil evidence from localities worldwide supports the appearance of terrestrial infauna and animal-plant interaction in the Silurian-Devonian.