# The Trackway Record of a Tetrapod Community in a Walchian Conifer Forest from the Permo-Carboniferous of Nova Scotia[1]

*H. E. K. van Allen[2], J. H. Calder[3] and A. P. Hunt[4]*

A recently discovered fossil site at Brule, northern Nova Scotia, provides an hitherto unavailable window on the terrestrial paleoecology of paleoequatorial Pangaea at the onset of the Permian Period. Preserved within the only known fossil forest of walchian conifers is a rich record of tetrapod footprints. The fossiliferous strata occur as a flat-lying coarsening-upward silty mudrock-sandstone sequence less than one metre in thickness, within redbeds of the Stephanian-Autunian Cape John Formation of the Pictou Group. The most prolific fossil record at the site lies within a unit of thinly bedded, mud-draped silty sandstone beds that are pervasively dessication-cracked. These mm to cm scale beds yield a profusion of tetrapod footprints that co-occur with a monotypic foliar litter of detached *Walchia* branchlets, less commonly invertebrate traces and on specific horizons the ostracod *Carbonita scalpellus* and brachiopod *Leaia sp*. The sequence records repetitive ephemeral flooding and subsequent exposure consistent with a dryland riverbed 'waterhole' and a semiarid monsoonal climate. Preserved within this forested dryland waterhole deposit are footprints inferred to be those of temnospondyl amphibians, reptiliomorph cotylosaurs and pelycosaur reptiles. A conservative ichnotaxonomy includes: *Amphisauropus latus, Limnopus vagus (cf. Batrachichnus (Anthichnium) salamandroides), Dimetropus nicolasi, Varanopus sp., Dromopus agilis* and an extramorphological ichnotaxon between *Varanopus* and *Gilmoreichnus cf. brachydactylus*. This ichnofacies is a cosmopolitan Euramerican fauna, but one that displays a European affinity consistent with Nova Scotia's mid-Euramerican paleogeographic setting.

[1]*In* Lucas, S. J. and Zeigler, K. E. (Editors); 2005, The Nonmarine Permian, New Mexico Museum of Natural History and Science, Bulletin 30, p. 322-332.
[2]13 Dahlia St, Dartmouth, NS, Canada B3A 2R8
[3]Nova Scotia Department of Natural Resources, PO Box 698, Halifax, NS, Canada B3J 2T9
[4]New Mexico Museum of Natural History & Science, 1801 Mountain Road NW, Albuquerque, New Mexico 87104-1375, USA