

A New Late Ordovician (Richmondian) Eurypterid from the William Lake Lagerstätte, Manitoba

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Upper Ordovician (Richmondian) dolostones and dolomudstones of the central Manitoba William Lake Lagerstätte are yielding exceptionally preserved remains of a wide range of soft-bodied and weakly sclerotized organisms associated with a sparse shelly fauna. These sediments were deposited in lagoonal and marginal marine to shallow subtidal conditions. The apparently autochthonous biota includes cnidarian medusae, xiphosurid horseshoe crabs, large problematic chitinous or chitinophosphatic tubes, dasycladacean algae, and lingulide brachiopods. Rare normal-marine shelly elements may have been transported in.

This fauna also includes a new species of eurypterid. Eurypterids were a diverse and widely distributed group of Palaeozoic aquatic (primarily marine) chelicerates ranging in age from the Early Late Ordovician to the Late Permian. Because their cuticle was not biomineralized, however, eurypterids are generally rare as fossils. Their greatest diversity is now recorded in Silurian and Lower Devonian Lagerstätten of Europe and North America. Occurrences of pre-Silurian eurypterids are extremely limited, with only a few species so far reported from Canada and just five genera described world-wide. Thus, their early evolutionary history is obscure, and any new material from this interval is potentially significant.

We have collected a large number of eurypterid specimens from William Lake. These new finds will hopefully aid in elucidating the initial Ordovician radiation of the eurypterids. Preliminary analysis of the available material reveals a new taxon that does not easily fit into any of the established clades within the Eurypterida. It has a mixture of characteristics typical of a number of different superfamilies as well as unique characters not seen anywhere else in the Order. At William Lake, eurypterids are represented mostly by three-dimensional mouldic sclerites. Rare articulated and near complete appendage-bearing specimens are often preserved in laterally compressed orientations showing strong dorsal arching; these may represent moulted exoskeletons.