

## The earliest known *Kinnella*, an orthide brachiopod from the Late Ordovician of Manitoulin Island, Ontario, Canada

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A new species of the orthide brachiopod genus *Kinnella* is described from the Upper Member of the Georgian Bay Formation (Upper Ordovician) of Manitoulin Island, Ontario, Canada. This species, herein designated as *Kinnella laurentiana* sp. nov., occurs in strata of Richmondian (mid-Ashgill; Katian) age, most likely correlative with the eastern North American *Dicellograptus complanatus* Zone. This occurrence extends the known stratigraphic range of *Kinnella* downward considerably from its previously inferred basal Hirnantian inception. The new species is characterized by a moderately convex dorsal valve and an apsacline ventral interarea rarely approaching catacline. This is the third reported occurrence of *Kinnella* in North America, and is the only species known to have inhabited the epicontinental seas of Laurentia. The associated benthic shelly fauna indicates a depositional environment within fair weather wave base (BA 2). The ancestry of *Kinnella* and this species appears most likely to lie among older, morphologically similar members of the Draboviidae which were seemingly confined to higher latitude faunal provinces prior to the Hirnantian glacial event. Thus, the mid-Ashgill occurrence of *Kinnella laurentiana* in the palaeotropically located Manitoulin Island region suggests the mixing of a probable cooler water taxon with the warmer water epicontinental shelly fauna of Laurentia, as well as a possible earlier episode of low-latitude oceanic cooling. Cluster analysis of *Kinnella*-bearing brachiopod faunas reveals a sharp differentiation between the *K. laurentiana*-associated brachiopod fauna and all other known (Hirnantian-lower Rhuddanian) occurrences mainly represented by the type species *K. kielanae*.

**Key words:** Brachiopoda, Orthida, Enteletoidea, *Kinnella*, Ordovician, Ashgill, Canada.

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