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Early Cambrian "soft−shelled" brachiopods as possible stem−group phoronids

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Brachiopods and phoronids are widely recognised as closely related lophophorate phyla, but the lack of morphological intermediates linking the bivalved bodyplan of brachiopods with tubular phoronids has frustrated precise phylogenetic placement. Here we describe *Lingulosacculus nuda* gen. et sp. nov., a new "soft−shelled" brachiopod from the Early Cambrian Mural Formation of western Alberta which provides a plausible candidate for a phoronid stem−group within (paraphyletic) Brachiopoda. In addition to its non−biomineralised shell, *L. nuda* had a ventral valve with an exceptionally long, pocket−like extension (pseudointerarea) that would have allowed the transformation of criss−crossing brachiopod−type musculature to the longitudinal arrangement typical of phoronids. "Soft−shelled" linguliform brachiopods have previously been reported from both the Chengjiang and Burgess Shale Lagerstätten which, together with *L. nuda*, probably represent two independent losses of shell mineralisation in brachiopods.

Key words: Lophophorata, Lophotrochozoa, Brachiopoda, Phoronida, exceptional preservation, problematica.

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