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A New Siphonotretid Brachiopod from the Silurian of Central-Western New South Wales, Australia

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ABSTRACT. A new genus and species of Silurian siphonotretid brachiopod, *Orbaspina gelasinus* n.gen. and n.sp., is described from the late Llandovery (*amorphognathoides* Zone) to early Wenlock (*ranuliformis* Zone) Boree Creek Formation of central-western New South Wales, Australia. This represents the first confirmed report of a post-Ordovician siphonotretid from east Gondwana. Other supposed post-Ordovician siphonotretid occurrences are reviewed. Higher-level taxonomic relationships between the Siphonotretida and other linguliformean groups are discussed; based on present knowledge, the siphonotretids appear closest to the lingulellotretids or dysoristids.

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Siphonotretid brachiopods first appeared during the late Middle Cambrian with the oldest species, *Schizambon reticulatus* MacKinnon (in Shergold *et al*., 1976), occurring in the Mayaian stage of the Saian-Altai region in southwest Siberia (Aksarina & Pel'man, 1978). The siphonotretids slowly diversified throughout the Late Cambrian and Early Ordovician, reaching a peak diversity of 13 genera during the late Arenig as part of the great Ordovician diversification event (Bassett *et al*., 1999). Throughout the Middle and Late Ordovician, siphonotretid diversity steadily decreased and they were believed to have disappeared along with most of the Cambrian Evolutionary Fauna during the end-Ordovician extinction event; an event which saw a significant turnover in brachiopod communities worldwide (Harper & Rong, 1995; Rong & Harper, 1999; Bassett *et al*., 1999; Sheehan, 2001).

Until recently, the youngest accepted siphonotretid species was *Multispinula drummuckensis* Harper, from the upper Ashgill (upper Rawtheyan) South Threave Formation of southwest Scotland (Harper, 1984). Mergl (2000, 2001a,b) has recently documented fragmentary material from the Early Silurian to Early Devonian of the Barrandian of central Bohemia that he identified as belonging to four indeterminate siphonotretid species.

This paper describes a new genus of Silurian siphonotretid brachiopod, *Orbaspina* n.gen., with type species *Orbaspina gelasinus* n.gen. and n.sp., from the late Llandovery (*amorphognathoides* Zone) to early Wenlock (*ranuliformis* Zone) carbonate sequence of the Boree Creek Formation in central-western New South Wales, Australia (Valentine *et al*., 2003). *Orbaspina* n.gen. represents the first post-Ordovician siphonotretid brachiopod to be documented from east Gondwana.

Geology and stratigraphy of the Boree Creek Formation

The Boree Creek Formation, a sequence of impure limestones and sandstones, crops out extensively in central-western New South Wales. Sherwin (1971) divided the Boree Creek Formation in the type area at Cheesemans Creek into three lithological members (oldest to youngest):

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