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Early Myriapodous Arthropods from Australia: *Maldybulakia* from the Devonian of New South Wales

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ABSTRACT. The myriapodous arthropod *Maldybulakia* Tesakov & Alekseev, 1998, was first described from the Lower Devonian (Pragian-Emsian) in central Kazakhstan. The geographic and stratigraphic distributions of *Maldybulakia* are broadened by the discovery of Devonian species in Australia. The Lochkovian or Pragian *Maldybulakia angusi* n.sp. occurs in abundance in the Sugarloaf Creek Formation near Taemas, NSW. *Maldybulakia malcolmi* n.sp. occurs in late Givetian or early Frasnian strata of the Boyd Volcanic Complex near Eden, south coastal NSW. Two trunk tagmata are present in *Maldybulakia*. The strong tergal exoskeleton of posteriorly overlapping diplopleurotergites suggests closest affinities with Dignatha and, particularly, Kampecarida. Along with arthropleurids and kampecarids, *Maldybulakia* represents another major myriapod bodyplan in the mid-Palaeozoic. Although occurring in lacustrine and fluvial sediments, the associated flora, likely myriapod affinities, and presence of spiracles in *Maldybulakia* suggest terrestrial habits.

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Myriapods have a sparse fossil record prior to the Carboniferous Period (see Almond [1985] and Shear [1990] for reviews of Silurian-Devonian body fossils). Among extant myriapod groups, millipedes and centipedes are known to have evolved by the Přídolí (Upper Silurian) (Almond, 1985; Shear *et al.*, 1998). Myriapodous fossils range back to the Lower Silurian (Mikulic *et al.*, 1985a,b), but the systematic position of these forms is uncertain. The extinct Class Arthropleuridea, best represented in the Upper Carboniferous (Briggs & Almond, 1994), extends back to the Přídolí, with new Devonian occurrences recently coming to light (Shear & Selden, 1995; Shear *et al.*, 1996). In spite of the patchy fossil record, several factors indicate that the major events in myriapod evolution had occurred by the Devonian. Among these is the cladistically derived position of Middle Devonian centipedes, which nest within some extant groups (Shear & Bonamo, 1988). Further, the Upper Silurian occurrence of Diplopoda predicts that the other extant lineages in the Progoneata and Dignatha, the Symphyla and Pauropoda, had diverged by that time (Kraus & Kraus, 1994).

Except for trace fossil indications (Trewin & McNamara, 1995), all that is known about Silurian-Devonian myriapods has come from the northern hemisphere, and in particular the Old Red Continent. The only citation of mid-Palaeozoic myriapods from Gondwana has been fraught with controversy. Bergström (1979: 9–10) mentioned "undescribed myriapod material from the