

Preliminary report on early Miocene freshwater ostracods (Crustacea) with soft part preservation from the Riversleigh site, NW Queensland, Australia

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The Riversleigh Station in Queensland, Australia, a World Heritage Site since 1994, consists of over 300 fossil sites, which are famous for their exceptional Oligo-Miocene vertebrate fauna. The only Riversleigh records of soft tissue preservation deal with plant and invertebrate fossils from the Dunsinane Site and with insects from the Upper Site of the Godthelp Hill sites (DUNCAN & BRIGGS 1996; DUNCAN et al. 1998; ARENA 1997, 2008).

In the Bitesantennary Site, a Riversleigh system B deposit (ARCHER et al. 1994) of early Miocene, an abundant and highly diverse bat fauna is preserved. The palaeoenvironment has been interpreted as a collapsed cave covering an area of 5 m², with surface freshwater forming rock pools.

A limestone and guano deposit of 0.7 m thickness yielded ostracods, which were first reported from the site (but not studied in detail) in 1989 (ARCHER et al. 1989), together with snails, algae and fish remains. The fossils are highly diverse and most likely accumulated over a long period, rather than representing a mass mortality event (BASSAROVA 2004).

Further picking has yielded more than eight hundred ostracod carapaces and valves from the Bitesantennary Site, revealing a wide spectrum of different preservation modes. While research of the entire ostracod fauna is ongoing, we here preliminary report on 26 specimens with preserved soft parts. The quality of the phosphatic preservation of inner lamellae and various appendages, however, is highly variable in the different specimens, ranging from dislocated small particles in an inorganic matrix, to clean appendages with preserved setae and surface microstructures. The reported specimens herein are undescribed species of the subfamilies Cyprinotinae, Herpetocypriinae and Notodromadinae.

A unique mode of soft part preservation with regard to the outer cuticle surface will be described and tentatively interpreted.

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