ABSTRACT VOLUME

GeoTirol 2016
Annual Meeting DGGV | 25–28 September 2016
Innsbruck | Austria

Photo: Martin Reiser
Recommended Citation


Disclaimer and Copyright
Each author is responsible for the content of his or her abstract.

Imprint

Publisher
Institute of Geology
University of Innsbruck
Innrain 52f
6020 Innsbruck

Editor
Hugo Ortner
During the Miocene epoch, a huge wetland covered western Amazonia, which holds a well-recognised aquatic fauna (especially endemic molluscs and ostracods). One of the most controversially discussed issues concerns the existence of marine incursions and their effect on this ecosystem ("Pebas system"). Sedimentological (e.g., tidal rhythmites), ichnological (e.g., *Thalassinoides* burrows) and palaeontological (e.g., mangrove-related pollen, dinoflagellate cysts, foraminifers) indications were used to infer episodic marine influences. However, these evidences permit differing interpretations. The current study focusses on sediment layers where foraminifers co-occur with typical, *Cyprideis*-dominated Pebasian ostracod faunas. We investigated samples from Brazil (core 1AS-10-AM; ~62 km SW Benjamin Constant) and Peru (outcrops around Porvenir; ~55 km S Iquitos). The ostracod assemblages of these samples comprise in total 26 species (*Cyprideis*: 13 species; *Perissocytheridea*: 5 species; *Rhadinocytherura*: 3 species, *Alicenula olivencae*, *Cypria* sp., *Pellucistoma curupira*, *Skopaeocythere tetrakanthos*, ?*Macrocypris* sp.). Foraminifers are represented only by two species of the genera *Ammonia* and *Elphidium*. While *Cypria* and *Alicenula* are freshwater dwellers, the other ostracod taxa as well as *Ammonia* and *Elphidium* are typical for marginal marine settings. We performed stable isotope analyses ($\delta^{18}O$, $\delta^{13}C$) on valves of *Cyprideis* (*C. machadoi*, *C. multiradiata*, *C. sulcosigmoidalis*), *Perissocytheridea acuminata*, *A. olivencae*, *P. curupira* and on tests of *Ammonia* and *Elphidium*. All measurements furnished well depleted $\delta^{18}O$ and $\delta^{13}C$ ratios, which clearly point to a freshwater environment. We conclude that: i) there is no geochemical evidence for a marine influx; ii) marine-derived ostracods and foraminifers successfully adapted to freshwater conditions in the Pebas system; and, iii) palaeoenvironmental reconstructions based on such highly endemic biota are problematic.