

Ostracods (Crustacea) and palaeoenvironments of Western Amazonia's Neogene (Late Miocene; Solimões Formation; Brazil)

MARTIN GROSS¹, WERNER E. PILLER² & MARCO CAPORALETTI²

¹Department for Geology and Palaeontology, Universalmuseum Joanneum, Weinzöttlstrasse 16, 8045 Graz, Austria; E-mail: martin.gross@museum-joanneum.at

²Institute for Earth Sciences, Karl-Franzens-University, Heinrichstrasse 26, 8010 Graz, Austria; E-mail: werner.piller@uni-graz.at, marco.caporaletti@uni-graz.at

Western Amazonia's landscape and biota were shaped by an enormous wetland during the Miocene epoch – the “Pebas” mega-wetland. Among the most disputed topics of this ecosystem is the inferred occurrence of transitory marine incursions. Aside from sedimentological, ichnological and palaeontological hints (e.g., pollen, foraminifers, molluscs, barnacles), the occurrence of endemic, “brackish water” ostracods is repeatedly consulted to infer elevated salinities or marine incursions. Micropalaeontological investigations of ostracod faunas derived from the upper part of the Solimões Formation (Eirunepé; W-Brazil) document moderately diverse assemblages (19 species; Fig. 1). About 2/3 of the total fauna belong to freshwater taxa (particularly *Cytheridella* and *Penthesilenula*), accompanied by eight species of the usually “brackish water” genus *Cyprideis*. Stable isotope analyses ($\delta^{18}\text{O}$, $\delta^{13}\text{C}$), performed on both groups, furnished for all taxa very negative values throughout and refer to exclusively freshwater conditions. This is in concert with our sedimentological observations, which point to a fluvial, possibly anastomosing river system as depositional environment. Obviously, *Cyprideis* has been successfully adapted to fully freshwater settings, which is also known from Lake Tanganyika today. Consequently, the occurrence of *Cyprideis* and probably of some other “brackish/marine” taxa (*Perissocytheridea*, *Rhadinocytherura*) is per se no general indicator for the presence of brackish waters or even a marine influx in this region as mentioned previously.

This work is financially supported by the Austrian Science Fund (P21748-N21).

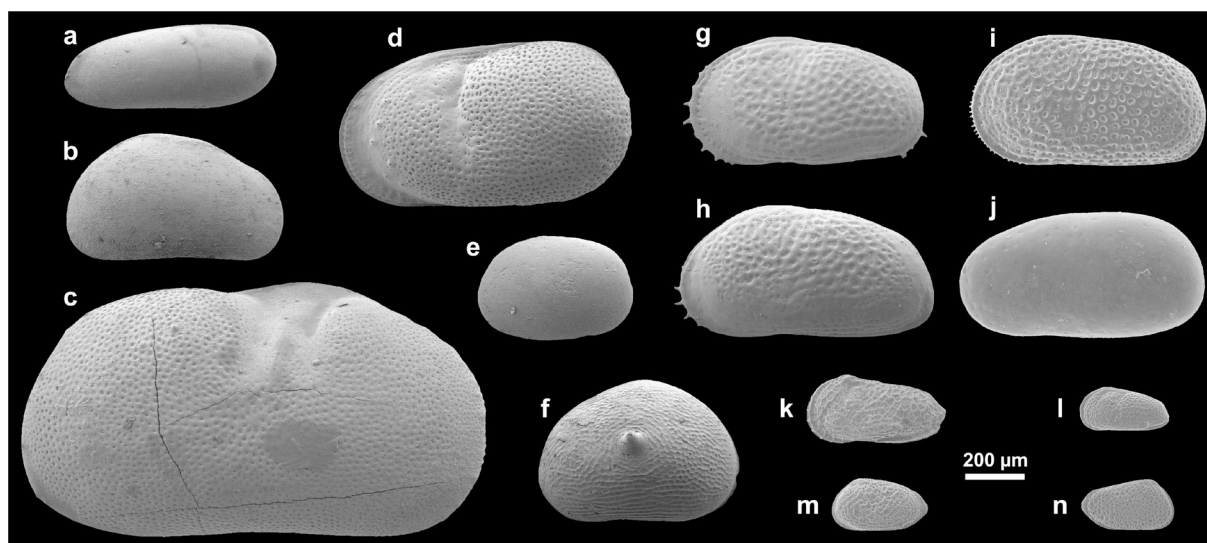


Fig. 1: Selected taxa of the Eirunepé fauna; (a–f) freshwater and (g–n) brackish water group (a, *Penthesilenula olivencae*; b, *Pseudocandona* sp.; c, *Pelocypris zilchi*; d, *Cytheridella danielopoli*; e, *Physocypris* sp.; f, *Cyprretta* sp.; g, *Cyprideis graciosa*; h, *Cyprideis longispina*; i, *Cyprideis* aff. *pebasae*; j, *Cyprideis* ?*olivencai*; k, *Perissocytheridea acuminata*; l, *Perissocytheridea* sp.; m, *Rhadinocytherura amazonensis*; n, *Rhadinocytherura* sp.).

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Berichte der Geologischen Bundesanstalt](#)

Jahr/Year: 2012

Band/Volume: [94](#)

Autor(en)/Author(s): Groß [Gross] Martin, Piller Werner E., Caporaletti Marco

Artikel/Article: [Ostracods \(Crustacea\) and palaeoenvironments of Western Amazonia's Neogene \(Late Miocene; Solimões Formation; Brazil\). 10](#)