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Ostracod-based biostratigraphy of the Solimões Formation (Miocene; western Amazonia) – Status quo and perspectives

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Amazonia is famous for its present day biodiversity, which roots in pre-Quaternary times (e.g., Hoorn et al., 2010). Hence, the Neogene evolution of this vast region, mainly driven by Andean tectonics and climatic changes, remains an intensively discussed topic in earth and life sciences as well. However, an accurate chronology of abiotic and, in turn, biotic changeovers is crucial to resolve Amazonia's geological past. Up to now, palynostratigraphy (Hoorn 1993) is *the* backbone of any biostratigraphic attempt in western Amazonia – and beyond. Few geochronologic data and long-distance correlations of scattered vertebrate sites do not provide a sufficient time resolution so far. Conversely, the in-depth investigation of mollusc faunas furnished well-founded and detailed biozonations, which are, however, highly linked to the palynological concept. Similarly, Muñoz-Torres et al. (2006) proposed an ostracod biozonation for the Pebas/Solimões Formation. Again, these zones are chronologically calibrated to palynostratigraphic results.

The taxonomic appraisal of ostracod faunas from a ~400 m long sediment core (1AS-10-AM; ~62 km SW Benjamin Constant; Brazil) permitted the revision of ~2/3 of hitherto described species of the ostracod genus *Cyprideis* (Gross et al. 2014). First and last “appearances” of *Cyprideis* species form the base of the biozones of Muñoz-Torres et al. (2006). Our systematic evaluation affects the suggested phylogeny of *Cyprideis*’ and, consequently, biozonations as well. For example: i) Some species turned out to be synonyms and are of ecostratigraphic value at the most (e.g., *C. aulakos* and *C. sulcosigmoidalis*, respectively). ii) Some “characteristic” species (e.g., *Cyprideis* sp. 3–5) have been never described or illustrated and are thus not available for biostratigraphic applications. iii) Other species, place together by Muñoz-Torres et al. (1998), have been revalidated. This necessitates a re-evaluation of the Muñoz-Torres material in order to explore their biostratigraphic potential.

Apparently, the existing ostracod biozonation of western Amazonia requires substantial adjustments. Nonetheless, a rough, ostracod-based stratigraphy is already possible, which underlines that these minute crustaceans can essentially contribute to advance the Miocene stratigraphy of western Amazonia.

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