



Aquitanian biogeography of Eastern Africa based on gastropod assemblages from Coastal Tanzania

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A series of Oligocene and Miocene outcrops has been investigated along the coast of Tanzania between Mtwara in the south and Dar Es Salaam in the north. Up to now, the knowledge on Eastern African Early Miocene gastropod faunas was based only on a small collection on shells from Pemba Island (Cox 1927). This assemblage, however, is most probably of Burdigalian or even Middle Miocene age and thus might represent an evolutionary level which postdates the important Terminal Tethyan Event (TTE). Herein, however, the biogeographic connectiveness of gastropod faunas in the Tethys area is addressed at a time when open marine gateways would have provided opportunities for marine faunal migrations.

At Ras Tipuli near Lindi we encountered the first collection of Aquitanian gastropods from that region which allows an estimation of the composition and structure of the tropical nearshore biota in that region. Dominant species are represented by the strombids, globulariids and cerithiids whereas all other species are reported by few specimens. The absence of littoral taxa suggests a shallow marine depositional environment off the coast. The presence of coral reefs or isolated coral patches can be postulated based on the composition of the fauna but also on the presence of coral rubble at the small outcrop. Tropical conditions with SSTs around 30° as interpreted from the stable isotope record in foraminifera (Stewart et al. 2004) fit well to the documented gastropod assemblage. With only 32 taxa, the fauna is certainly not completely documented. Nevertheless, the high endemism of c. 81% reveals the assemblage as part of a distinct biogeographic entity. The faunistic relations with Miocene faunas of Arabia in

the north are very poor and suggest a major biogeographic boundary between these areas. As the Arabian faunas and those of Somalia are part of the Western Tethys Region (Harzhauser 2007) this bioprovince boundary has to represent even a boundary between to Regions. Therefore, the Tanzanian gastropod fauna is proposed to represent parts of the newly defined Central East African Province (CEAP). In terms of hierarchy it has to be included into the Proto-Indo-West Pacific Region and forms the western counterpart to the Proto-Indo-Polynesian Province (PIPP). Aside from the mentioned biogeographic separation from the Western Tethys Region, this relation is indicated also by the presence of several species-pairs which suggest a phylogenetic relation between the Aquitanian species of Tanzania with Miocene ones from Indonesia. This biogeographic scheme, however, lacks a definition of the southern boundary as the South African gastropod faunas are still poorly documented.