

Deep genomic divergence between *Osteolaemus osborni* and *O. tetraspis* from the locality of their syntopic occurrence

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Abstract: The Congo Dwarf Crocodile (*Osteolaemus osborni*) was described more than 100 years ago, but until recently it was considered a subspecies of *O. tetraspis*. *Osteolaemus osborni*, occurring in the Congo Basin, represents one of the least known crocodilian species. Field surveys were conducted on the edge of the Congo Basin in the northwestern Republic of the Congo to more accurately identify the distribution limits of *O. osborni* and *O. tetraspis*. A site was discovered where both species occur in syntopy in the same forest swamp. One individual of each species from the syntopic site was examined together with an allopatric individual of *O. osborni* using a genomic approach, yielding more than 400 nuclear DNA loci and 650,000 bp. Phylogenetic divergence was compared with a crocodilian genus ecologically parallel to *Osteolaemus*, caimans of the genus *Paleosuchus*. The genomic divergence between *O. osborni* and *O. tetraspis* was found to be similar to the divergence between *P. palpebrosus* and *P. trigonatus*, dated to the Late Miocene. Intraspecific divergence within *O. osborni* was shallow, indicating that gene flow from *O. tetraspis* (hybridization) probably did not occur in the individual from the syntopic site. The available distribution data suggest that the two *Osteolaemus* species probably live in parapatry, with only limited sympatry. This indicates that the ecological niches and/or behaviors of the two *Osteolaemus* species are likely to be more similar, resulting in higher interspecific competition than in the two largely sympatric *Paleosuchus* species.

Keywords: Congolian rainforests, *Osteolaemus*, Phylogenomics, Syntopy

Type of presentation: Poster

Thematic area: Research and Knowledge (Systematics, Evolutionary Biology)