

A New Cormorant-like Bird (Aves: Phalacrocoracoidea) from the Early Miocene of Rauscheröd (Southern Germany)

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ABSTRACT. Presented here is a new species of a cormorant-like bird, assigned to *?Borvocarbo tardatus* n.sp., from the Early Miocene of the locality Rauscheröd in Southern Germany. The preserved bones, a tibiotarsus, fragmentary ulna and radius, are compared in detail to those of fossil and extant taxa of phalacrocoracoids. Provided that the generic affiliation is confirmed when additional material is discovered, the new species is the stratigraphically youngest evidence and representative of the genus *Borvocarbo*.

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Cormorants are aquatic, piscivorous, diving birds of the Old and New World. Today they are most diversified in the Southern Hemisphere, where they inhabit both marine and freshwater environments. The fossil record of Phalacrocoracoidea (cormorants and aningas, sensu Livezey & Zusi, 2007) dates back until the Early Oligocene of Europe (e.g., Mourer-Chauviré *et al.*, 2004; Rasmussen *et al.*, 1987; Roux, 2002), perhaps even to the Late Eocene (Mourer-Chauviré *et al.*, 2004); however, the oldest systematically determinable genera/species are described from the Late Oligocene (Mayr, 2007; Mourer-Chauviré *et al.*, 2004).

Tertiary taxa of European Phalacrocoracoidea belong to six genera: *Borvocarbo* Mourer-Chauviré, Berthet & Hugueney, 2004 (Late Oligocene and Early Miocene [this paper]), *Phalacrocorax* Brisson, 1760 (Early Miocene–Recent), *Oligocorax* Lambrecht, 1933 (Early Miocene), *Nectornis* Cheneval, 1984 (Miocene), and

Limicorallus Kurochkin, 1968 (Late Oligocene and Early Miocene) and, as the single representative of darters, *Anhinga* Brisson, 1760 (Late Miocene–Recent). The fossil representatives of the genera *Phalacrocorax*, *Oligocorax*, *Nectornis* and *Limicorallus* are accepted as members of the Phalacrocoracidae (cormorants), whereas, following Mayr (2007), *?Borvocarbo stoeffelensis*, and hence the entire genus, is probably phylogenetically positioned outside of the crown group (Phalacrocoracidae+Anhingidae), but still a Phalacrocoracoidea.

Hitherto, 11 species of cormorants and cormorant-like taxa are known during the Late Oligocene and Miocene in Europe (Table 1). Fossil darters are represented in Europe only by *Anhinga pannonica* (Lambrecht, 1916) from the Late Miocene of Romania (MN10) and Austria (MN9); this species has also been reported from the Late Miocene of Tunisia (Rich, 1972).

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