



<http://dx.doi.org/10.11646/zootaxa.4013.2.6>

<http://zoobank.org/urn:lsid:zoobank.org:pub:3C01B34C-0C84-4BF1-97C1-375798C05A3E>

Towards completion of the early Eocene aviary: A new bird group from the Messel oil shale (Aves, Eopachypterygidae, fam. nov.)

GERALD MAYR

Senckenberg Research Institute and Natural History Museum Frankfurt, Ornithological Section, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany. E-mail: Gerald.Mayr@senckenberg.de

Abstract

A new avian species is described from the early Eocene Messel fossil site in Germany. *Eopachypteryx praeterita*, **gen. et sp. nov.** is a small bird and exhibits a characteristic morphology with a short and robust beak, a distinctively shaped coracoid, stout humerus, robust pectoral girdle skeleton, and short hindlimbs. Although similarities to the Paleogene *Eocuculus* as well as to some extant telluravian and strisorine taxa are noted, the phylogenetic affinities of the new species are unresolved. To account for the fact that the new species is clearly distinguished from any of the known fossil or extant avian taxa, it is here assigned to the new taxon Eopachypterygidae, fam. nov.. *Eopachypteryx praeterita* is represented by three partial skeletons. A further partial skeleton from Messel belongs to a second, unnamed species, which is tentatively referred to *Eopachypteryx*.

Key words: Aves, fossil, Eopachypterygidae, **fam. nov.**, *Eopachypteryx praeterita*, **gen. et sp. nov.**

Introduction

In the past decades, the oil shale of the Messel fossil site in Germany has yielded a large number of fossil birds, which provide a unique glimpse into the early Eocene avian diversity of the Northern Hemisphere (note that the age of the locality has recently been revised and is now considered latest early rather than middle Eocene; Lenz *et al.* 2015). To date, more than 50 avian species have been identified in the sediments of this small crater lake. Many of these can be assigned to extant higher-level taxa, but there are also a number of fossils, which have so far defied a robust classification (Morlo *et al.* 2004; Mayr 2009).

On a global scale, the Messel avifauna constitutes the most-diversified, most species-rich, and best-studied Eocene bird community. Still, however, the described avian species are likely to represent only a fraction of those that lived around Lake Messel. Not only does the Messel avifauna appear to be biased towards small to medium-sized arboreal birds, which have a greater likelihood to fall into a lake than terrestrial species foraging on the ground. There are furthermore undescribed fossils in various Messel collections, which clearly represent new taxa, but are only known from a few poorly preserved specimens. The description of these fossils has been postponed so far in the hope of the discovery of additional and better preserved specimens.

Indeed, for one novel taxon a sufficient number of fossils is now available to allow a meaningful description. These specimens reveal a previously unrecognized group of early Eocene birds, which distinctly differs from other fossil or extant avian taxa. As such, they not only contribute to a better understanding of the diversity of the Messel avifauna, but also add to our knowledge of early Eocene birds in general.

Material and methods

The fossils are housed in the collection of Senckenberg Research Institute Frankfurt, Germany (SMF). Osteological terminology follows Baumel & Witmer (1993), with amendments for the quadrate after Elzanowski & Stidham (2010). Measurements are in millimeters. Because of the limited number of osteological details obtainable from the fossils, a formal phylogenetic analysis has not been attempted.