Ann. Naturhist. Mus. Wien	99 A	39–42	Wien, April 1998

Vertebrates from the Early Miocene lignite deposits of the opencast mine Oberdorf (Western Styrian Basin, Austria):

4. Aves

by Jiří MLÍKOVSKÝ*

Manuscript submitted on May 14th 1997,
the revised manuscript on November 19th 1997

Abstract

Early Miocene (MN 4) deposits of Oberdorf in Styria, Austria, yielded remains of two avian taxa: Anatidae (indet.) and Passeriformes (indet.).

Key words: Aves, Miocene, Austria.

Zusammenfassung

Die Fundstellen aus dem Unter-Miozän (MN4) von Oberdorf in der Steiermark, Österreich, umfassen Reste von 2 Vogel-Taxa: Anatidae (indet.) und Passeriformes (indet.).

Schlüsselwörter: Vögel, Miozän, Steiermark, Österreich.

Introduction

Early Miocene birds were found in numerous localities of Europe, but most of them have not been adequately described yet (MLÍKOVSKÝ 1996a+d). A welcome addition is the record of birds from the Oberdorf locality, which will be described below.

Oberdorf is a coal quarry west of Graz in Steiermark, SE Austria. The excavated fauna belongs to MN 4 sensu MEIN 1975 and 1989 (DAXNER-HÖCK et al. 1998b). For a detailed description of the locality see DAXNER-HÖCK et al. (1998a). Avian remains from Oberdorf are deposited in the collections of the Natural History Museum in Wien, Austria.

Acknowledgements

G. DAXNER-HÖCK (Wien) placed the material at my disposal and introduced me to the paleontology of Oberdorf. S. L. OLSON (Washington, D.C.) allowed me to use the comparative collection of avian skeletons under his care. I thank them both. The Oberdorf project (P-10338-GEO) was financed by the "Fonds zur Förderung der wissenschaftlichen Forschung". My study trip to Washington was sponsored by the Smithsonian Institution.

* Institute of Geology and Paleontology, Charles University, Albertov 6, CZ-128 43 Praha 2. – Czech Republic.

Systematic list

Order Anseriformes LINNAEUS, 1758

Family Anatidae LEACH, 1820

Anatidae gen. and sp. indet.

M a t e r i a l: fragmentary coracoid, lacking both cranial and sternal parts; NHMW 1997z0192/0001.

C o m p a r i s o n s: This fragmentary coracoid belongs to a duck. Only two duck genera were recorded from the Oligocene through early Miocene thus far: the extinct *Mionetta* LIVEZEY & MARTIN, 1988 (CHENEVAL 1983, 1984, LIVEZEY & MARTIN 1988), and the modern *Oxyura* BONAPARTE, 1828 (ŠVEC & MLÍKOVSKÝ 1986). The Oberdorf coracoid differs from both of these genera in having glenoid facet more flaring. Representatives of all other waterfowl genera known from the Oligocene (*Palaeopapia* HARRISON & WALKER, 1979) and early Miocene (*Cygnopterus* LAMBRECHT, 1931, and *Cygnavus* LAMBRECHT, 1931) of Europe were much larger. It is thus impossible to assign the coracoid from Oberdorf to any of the waterfowl genera previously known from comparatively old deposits. Its fragmentary nature prevents its closer identification within the family.

R e m a r k s: Leaving aside large, generally swan-like taxa, the waterfowl fauna of the early Miocene Europe was rather poor. Whistling ducks of the genus *Mionetta* were widespread, being documented from France, Germany and the Czech Republic (see MLÍKOVSKÝ 1992, 1996a), i.e. from all countries, in which suitable deposits were found (see MLÍKOVSKÝ 1996d). The record of *Oxyura* ducks is limited to the Dolnice locality in westernmost Czech Republic (ŠVEC & MLÍKOVSKÝ 1986, MLÍKOVSKÝ 1992, 1996c). All remains of these ducks were found in open, lacustrine deposits, very different from those of Oberdorf.

Order Passeriformes LINNAEUS, 1758

Family indet.

Passeriformes fam. indet.

M a t e r i a l: Ungual phalanx with damaged posterior part; NHMW 1997z0193/0001.

C o m p a r i s o n s: This ungual phalanx from the 1st (hind) toe agrees in size with the same element of the modern Jackdaw *Corvus monedula* LINNAEUS, 1758, but in general shape it does not appear to be from a bird from the family Corvidae. The fragment is unsuitable for closer identification. Previously, the fragment was erroneously listed as "Accipitridae indet." (MLÍKOVSKÝ 1996b).

R e m a r k s: The earliest record of passerine birds comes from the late Oligocene of France (MOURER-CHAUVIRÉ et al. 1989, MLÍKOVSKÝ 1996a+d). In the early Miocene, passerine birds were widespread in Europe (see MLÍKOVSKÝ 1996a+c), but their remains have never been analysed in detail.

Discussion

The two bone fragments found in the deposits of Oberdorf do not allow for any taphonomical, paleoecological, paleogeographical or stratigraphical analysis. Nevertheless, the locality yielded the first record of an Early Miocene duck from non-lacustrine deposits in Europe, and provided first evidence for the existence in the same time-space of a medium large passerine bird.

The scarcity of avian remains in fossiliferous deposits of Oberdorf is itself an interesting observation, because other vertebrate groups are well represented (DAXNER-HÖCK et al. 1998b). A possible explanation would be that the taphocenosis came from terrestrial animals that were entrapped in muddy swamps, which were present at Oberdorf during the time of the deposition of the taphocenosis (DAXNER-HÖCK et al. 1998b). Such a situation can be readily avoided by flying birds.

References

CHENEVAL, J. (1983): Les Anatidae (Aves, Anseriformes) du gisement aquitanien de Saint-Gérand-le-Puy (Allier, France). – In: BUFFETAUT, E., J. M. MAZIN & E. SALMON (Eds.): Actes du symposium paléontologique Georges Cuvier. – pp. 85–98. – Montbelliard (Musée du Chateau).

—— (1984): Les oiseaux aquatiques (Gaviiformes à Ansériformes) du gisement aquitanien de Saint-Gérand-le-Puy (Allier, France): révision systématique. – Palaeovertebrata, **14**: 33–115. – Montpellier.

DAXNER-HÖCK, G., HAAS, M. & MELLER, B. (1998a): Wirbeltiere aus dem Unter-Miozän des Lignit-Tagebaues Oberdorf (Weststeirisches Becken, Österreich): 1. Fundstelle, geologischer und sedimentologischer Überblick. – Ann. Naturhist. Mus. Wien, (A) **99**: 1–11, 5 Abb. – Wien.

—— HAAS, M., MELLER, B. & STEININGER, F. (1998b): Wirbeltiere aus dem Unter-Miozän des Lignit-Tagebaues Oberdorf (Weststeirisches Becken, Österreich): 10. Palökologie, Sedimentologie und Stratigraphie. – Ann. Naturhist. Mus. Wien, (A) **99**: 195–224, 5 Abb., 1 Taf. – Wien.

HARRISON, C. J. O. & C. A. WALKER (1979): New names for two Upper Eocene bird genera. – Tertiary Research, **2**: 110.

LAMBRECHT, K. (1931): *Cygnopterus* und *Cygnavus*, zwei fossile Schwäne aus dem Tertiär Europas. – Bull. Mus. roy. Hist. nat. Belgique **7** (31): 1–6.

LIVEZEY, B. C. & L. D. MARTIN (1988): The systematic position of the Miocene anatid *Anas*[?] *blanchardi* MILNE-EDWARDS. – J. Vert. Paleontol. **8**: 196–211.

MILNE-EDWARDS, A. (1863): Mémoire sur la distribution géologique des oiseaux fossiles et description de quelques espèces nouvelles. – Ann. Sci. nat., **20**: 133–176.

MLÍKOVSKÝ, J. (1992): The present state of knowledge of the Tertiary birds of Central Europe.– In: CAMPBELL, K.E. (Ed.): Papers in avian paleontology honoring Pierce Brodkorb. – Nat. Hist. Mus. Los Angeles Co., Sci. Ser. **36**: 433–458.

—— (Ed., 1996a): Tertiary avian localities of Europe. – Acta Univ. Carol., (Geologica) **39**: 517–848.

—— (1996b): Tertiary avian localities of Austria. – In: MLÍKOVSKÝ, J. (Ed.): Tertiary avian localities of Europe. – Acta Univ. Carol., (Geologica) **39**: 529–533.

—— (1996c): Tertiary avian localities of the Czech Republic. – In: MLÍKOVSKÝ, J. (Ed.): Tertiary avian localities of Europe. – Acta Univ. Carol., (Geologica) **39**: 551–557.

—— (1996d): Tertiary avian faunas of Europe. – In: MLÍKOVSKÝ, J. (Ed.): Tertiary avian localities of Europe. – Acta Univ. Carol., (Geologica) **39**: 777–818.

MOURER-CHAUVIRÉ, C., M. HUGUENEY & P. JONET (1989): Découverte de Passeriformes dans l'Oligocène supérieur de France. – C. R. Acad. Sci. Paris (II) **309**: 843–849.

ŠVEC, P. & J. MLÍKOVSKÝ (1986): First Tertiary record of the genus *Oxyura* (Aves: Anseridae). – Čas. Mineral. Geol., **31**: 403–407.