

## Tertiary Avian Localities of Denmark

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**Abstract:** Several dozens avian bones were excavated from three Danish Eocene localities. The finds have not yet been properly described.

**Key-words:** Aves, Eocene, Denmark.

### INTRODUCTION

Finds of the Tertiary birds in Denmark are limited to the early Eocene marine clays. Thus far, they were mentioned by Hoch (in Petersen *et al.* 1973, Hoch 1975), Harrison (1984), Houde (1988) and Houde and Olson (1992) only.

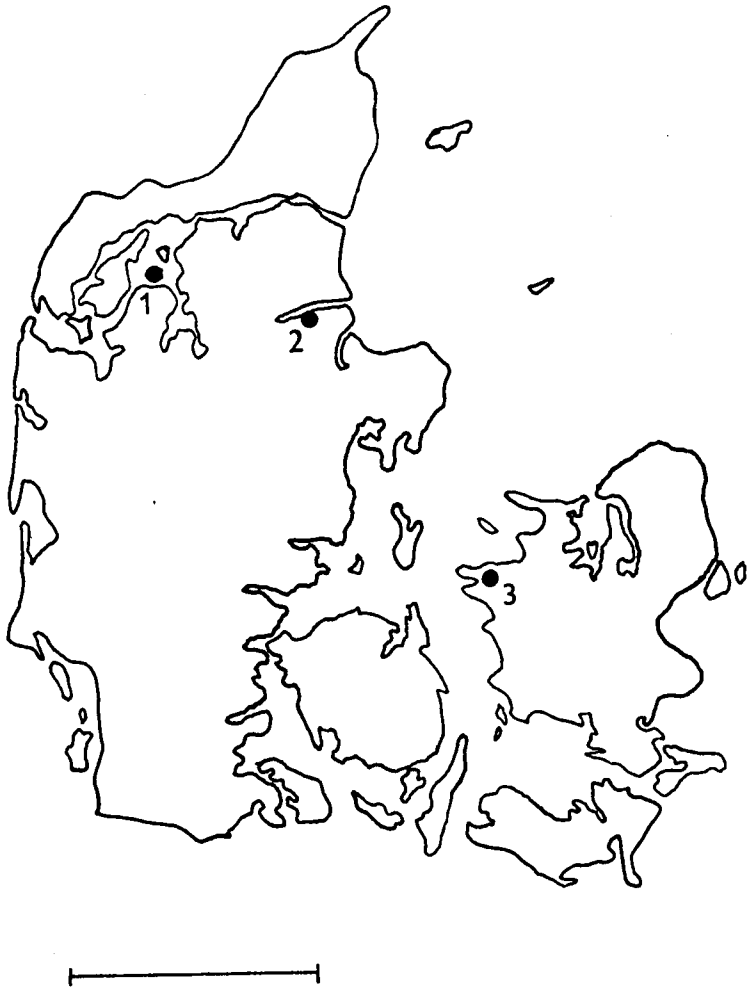
The age of the Danish marine clays is generally known to be early Eocene, Ypresian (Bonde 1966, Petersen 1973, Hoch 1975, Pedersen *et al.* 1975), but no correlation with the mammalian zones (MP) has been attempted yet. However, teeth of the shark *Odontaspis macrotia striata* (Winkler) were found in the plastic clay of Røsnaes (Petersen *et al.* 1973). According to Ward (1971), this shark form is restricted to the basal part of the London Clay, which belongs in the MP-zone 8 (Schmidt-Kittler 1987). Mo-clay is underlying Røsnaes clay (Pedersen *et al.* 1975), and its age may thus tentatively be estimated at MP 7, because MP 6 already belongs to the Palaeocene (Schmidt-Kittler 1987). The oldest part of the Røsnaes clay belongs in the nannoplankton zone NP 11 (Pedersen *et al.* 1975).

The stratigraphical divisioning follows Schmidt-Kittler (1987). Museum acronyms are as follows:

BMNH: Natural History Museum (formerly British Museum (Natural History)),  
London, United Kingdom

FM: Fur Museum, Fur, Denmark

MMK: Mineralogical Museum, Kjøbenhavn, Denmark.



**Fig. 1.** Tertiary avian localities of Denmark. The numbering of the localities corresponds with that in the text. Scale bar = 100 km.

#### LIST OF LOCALITIES

##### (1) FUR

**Location:** Mo-clay deposits on Isle of Fur, Viborg Province; approx. 56.50 N, 9.00 E. Early Eocene, MP 7 (cf. Bonde 1966, Petersen 1973, Hoch 1975, Hansen 1979).

**Avifauna:** Few avian bones (free, or in plates), three of which were tentatively referred to the Falconiformes, Raliformes, and Musophagiformes (Hoch 1975). The alleged falconiform humerus shows similarities with the Sandcoleiformes, but has not been included in the latter order (Houde and Olson 1992). Deposited in FM and MMK.

## (2) MARIAGER FJORD

**Location:** Plastic clay deposits of Skovbo, Nordjylland Province; approx. 56.40 N, 9.50 E. Early Eocene, MP 8 (cf. Bonde 1966, Petersen 1973, Hoch 1975).

**Avifauna:** Few unidentified bones and feather imprints (Hoch 1975). Deposited in MMK.

## (3) RØSNAES

**Location:** Plastic clay deposits in NW Vestsjaelland Province; approx. 55.40 N, 11.10 E. Early Eocene, MP 8 (cf. Petersen 1973, Petersen *et al.* 1973).

**Avifauna:** About 40 fragments of avian bones, including those of the Lithornithidae (*Lithornis*), and Apodidae (*Scaniacypselus*) (Harrison 1984, Houde 1988). Deposited in BMNH (incl. type of *Scaniacypselus wardi*), and MMK. Type locality of *Scaniacypselus wardi* Harrison 1984.

## DISCUSSION

Most of the avian bones from Denmark are too fragmentary to be identified, but some are well preserved. The latter ones form a welcome addition to the sparse record of the early Ypresian birds in Europe.

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