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# Bird remains from Neolithic and Bronze Age settlements in Lithuania

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Abstract. Twenty two bird taxa from 10 archaeological sites were identified in the material dating from the Middle Neolithic, Late Neolithic and Early Bronze Age of Lithuania. This is the first paper in English that lists all the bird species found in Lithuanian archaeological sites.

Key words: Bird bones, Neolithic, Early Bronze Age, Lithuania.

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## I. INTRODUCTION

The purpose of this article is to examine the species of birds that were excavated in western and eastern Lithuania's archaeological sites. Part of Lithuania's archaeological bone material has been published on previously (BILSKIENĖ & DAUGNORA 2000).The present work is the first full article about bird remains from the archaeological sites of Lithuania.

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## II. MATERIAL AND METHODS

Bird remains were found in 10 archaeological sites (Fig. 1) during field work carried out between 1976 and 1996. Identification work was conducted at the comparative skeletal collections of the Bergen Museum of Zoology (Norway), T. Ivanauskas Zoological Museum (Lithuania) and the

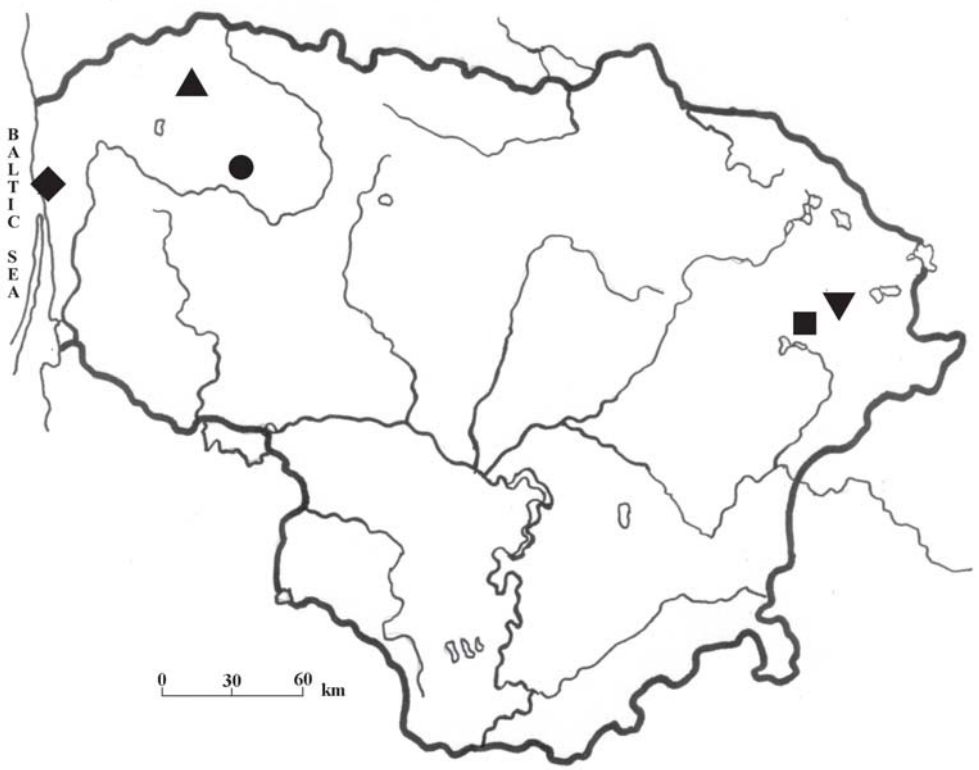


Fig. 1. Lithuania's archaeological sites containing bird remains. ◆ – Šventoji (1B, 2B, 3B, 4, 23); ● – Daktariškė 5; ▲ – Šarnelė;■ – Kretuonas (1B, 1C); ▼ – Žemaitiškė 2.

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The following reference studies were used for the identification of bird remains: BACHER (1967), BOCK (1962), COHEN & SERJEANTSON (1996), ERBERSDOBLER (1968), GRUBER (1990), HARRISON (1969), KELLNER (1986), KRAFT (1972), MORALES MUNIZ (1993), THESING (1977), TOMEK & BOCHEŃSKI (2000) and WOELFE (1967). The skeletal terminology of BAUMEL (1993) was used for this work.

On the basis of the dating of archaeological sites the osteological material found in settlements on the territory of Lithuania can be divided into four chronological periods: Early Neolithic (6550-5600/5400 BP; 5500-4400/4200 cal. BC), Middle Neolithic (5600/5400-4300 BP; 4400/4200-2900 cal. BC), Late Neolithic (4300-3700/3600 BP; 2900-2100/2000 cal. BC) and Early Bronze Age (4100/4000-3500 BP; 2100/2000-1500 cal. BC) (GIRININKAS 2000).

Until now no bird remains were found from the Early Neolithic in Lithuania, although from the Middle Neolithic there are five archaeological sites containing bird remains: Šventoji 1B (RIMANTIENĖ 1979), Šventoji 2B (RIMANTIENĖ 1979), Šventoji 4 (RIMANTIENĖ 1992), Daktariškė 5 (BUTRIMAS 1990, 1992) and Kretuonas 1B (GIRININKAS 1990). All material was collected by hand.

The Šventoji complex (Šventoji settlements 1B, 2B, 3B, 4, 23) is situated in the Palanga district in the northern part of Lithuania. The Šventoji 1B, 2B and 4 settlements were located along the shores of a coastal lagoon, which became the Pajūris bog during the end of the Neolithic. The typical faunal and fish composition was identified at the Šventoji 1B, 2B and 4 settlements: terrestrial mammals – 9 species, marine mammals – 5 species, and 14 species of fish (DAUGNORA 2000).

The Daktariškė 5 settlement is situated in northern Lithuania, in the Telšiai district, near Lake Bir ulis. Fifteen artefacts and 278 mammal bones fragments was excavated there (BUTRIMAS 1990).

The Kretuonas 1B settlement is situated in eastern part of Lithuania, near Lake Kretuonas. 4046 bones belonging to 21 different animal species and 80 artefacts were excavated there (DAUGNORA & GIRININKAS 1996).

Late Neolithic settlements include Šventoji 3B (RIMANTIENĖ 1979), Šventoji 23 (RIMANTIENĖ 1979), Žemaitiškė 2 (GIRININKAS 1990) and Šarnelė (RIMANTIENĖ1974, BUTRIMAS 1982).

The Žemaitiškė 2 settlement is situated in the eastern part of Lithuania, near Lake Kretuonas. A total of 114 artefacts and 311 bones fragments were excavated. Of those 54 artefacts and 242 mammal bird bones were identified.

Šarnelė was excavated in 1973 and 1981. The settlement is situated in the north of Lithuania, near the River Varduva. A total of 16 artefacts and 220 animal and bird remains was excavated there (BUTRIMAS 1982).

Kretuonas 1C is the only Early Bronze site containing bird remains in Lithuania (BILSKIENĖ & DAUGNORA 2000). Kretuonas 1C is situated in eastern part of Lithuania, near Lake Kretuonas. 2922 bones belonging to 16 different animal species and 531 artefacts were excavated there (GIRININKAS 1994, 1990; DAUGNORA & GIRININKAS 1996).

## III. RESULTS

A total of 307 bird bones representing 22 taxa (MNI = 102) were found in all the sites studied (Table I). Of them, eleven taxa are listed from Middle Neolithic sites, nine taxa from Late Neolithic, and only two taxa from Early Bronze Age. The most numerous were remains of the Mallard which make up about 38.76 % (NISP = 119) of all the bones found. The richest site was the settlement of Šventoji 2B where about 31.60 % (NISP = 97) of all the bones were found. Most of the birds found at all sites represent species associated with water.

## IV. GENERAL COMMENTS

All the species found in Lithuania have already been recorded in other countries situated by the Baltic Sea (BOCHEŃSKI 1993; CLASON & BRINKHUIZEN 1993; CLASON & PRUMMEL 1979; DURING 1986; ERICSON 1987; LOZE 1992; MOORA & LOUGAS 1995; LOUGAS, LIDEN & NELSON 1996; LOUGAS 1996; WIJNGAARDEN-BAKKER 1997; STEWART & CARRASQUILLA 1997).

It is difficult to decide if all the birds that we investigated had been hunted. Part of them might have died due to natural causes, others – captured by predators. We have not found any traces of burning or cut marks that would allow us to univocally ascribe the material to human activities (CASSOLI & TAGLIACOZZO 1997). But bird osteological material was found in cultural layers of settlements, and we think that birds were hunted by man.

The scarcity of the present material does not allow us to draw more specific conclusions on birds from archaeological sites in Lithuania. Hopefully, this will be possible in the future when more material is studied.

Table I

Distribution of bird taxa from archaeological sites in Lithuania

| Bird taxa | Middle Neolithic | | | | | | | | | | Late Neolithic | | | | | | | | Early Bronze | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Šventoji 1B | | Šventoji 2B | | Šventoji 4 | | Daktariškė 5 | | Kretuonas 1B | | Šventoji 3B | | Šventoji 23 | | Žemaitiškė 2 | | Šarnelė | | Kretuonas 1C | | | |
| | NISP | MNI | NISP | MNI | NISP | MNI | NISP | MNI | NISP | MNI | NISP | MNI | NISP | MNI | NISP | MNI | NISP | MNI | NISP | MNI | **NISP** | **MNI** |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| *Gavia stellata* (PONTOPPIDAN, 1763) | | | | | | | | | | | | | 1 | 1 | 3 | 2 | | | | | **4** | **3** |
| Gaviidae | | | | | | | | | 1 | 1 | | | | | | | | | | | **1** | **1** |
| *Podiceps cristatus* (LINNAEUS, 1758) | | | | | | | | | | | | | 1 | 1 | | | | | | | **1** | **1** |
| *Ardea cinerea* LINNAEUS, 1758 | | | 15 | 1 | | | | | | | | | | | | | | | | | **15** | **1** |
| *Ciconia ciconia* (LINNAEUS, 1758) | | | 1 | 1 | | | | | | | | | | | | | | | | | **1** | **1** |
| *Cygnus cygnus* (LINNAEUS, 1758) | | | 1 | 1 | 1 | 1 | | | | | | | 1 | 1 | | | | | | | **3** | **3** |
| *Anser anser* (LINNAEUS, 1758) | | | | | | | | | | | | | 1 | 1 | | | 2 | 1 | | | **3** | **2** |
| *Anas crecca* LINNAEUS, 1758 | | | 1 | 1 | | | | | | | | | | 1 | 1 | | | | | | **2** | 2 |
| *Anas platyrhynchos* LINNAEUS, 1758 | 1 | 1 | 48 | 9 | 1 | 1 | 11 | 7 | 4 | 3 | | | 5 | 1 | 6 | 2 | 32 | 8 | 11 | 6 | **119** | **38** |
| *Anas acuta* LINNAEUS, 1758 | | | | | | | | | | | 7 | 3 | | | | | | | | | **7** | **3** |
| *Anas clypeata* LINNAEUS, 1758 | | | 1 | 1 | | | | | | | | | | | | | | | | | **1** | **1** |
| *Aythya ferina* (LINNAEUS, 1758) | | | | | | | | | | | | | | | 3 | 2 | | | | | **3** | **2** |
| *Aythya fuligula* (LINNAEUS, 1758) | | | 1 | 1 | | | | | | | | | | | | | | | | | **1** | 1 |
| *Somateria mollissima* (LINNAEUS, 1758) / *Somateria spectabilis* (LINNAEUS, 1758) | | | | | | | | | | | | | | | 5 | 2 | | | | | **5** | **2** |
| *Melanitta fusca* (LINNAEUS, 1758) | | | 8 | 3 | | | | | 1 | 1 | | | | | | | | | | | **9** | **4** |
| *Bucephala clangula* (LINNAEUS, 1758) | | | | | | | | | | | | | | | 6 | 4 | | | | | **6** | **4** |
| *Mergellus albellus* (LINNAEUS, 1758) | | | | | | | | | | | | | | | 1 | 1 | | | | | **1** | **1** |

Table I cont.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Mergus serrator* LINNAEUS, 1758 | | | | | | | | | | | | | | | 3 | 2 | | | | | **3** | **2** |
| *Mergus merganser* LINNAEUS, 1758 | | | 1 | 1 | | | | | | | | | | | | | | | | | **1** | **1** |
| Anatidae | | | | | | | | | 2 | 2 | | | | | 9 | ? | | | | | **11** | **2** |
| *Pernis apivorus* (LINNAEUS, 1758) | | | | | 3 | 1 | | | | | | | | | | | | | | | **3** | **1** |
| *Haliaeetus albicilla* (LINNAEUS, 1758) | | | | | | | | | | | 1 | 1 | | | 1 | 1 | | | | | **2** | **2** |
| *Accipiter gentilis* (LINNAEUS, 1758) | | | 1 | 1 | | | | | | | | | | | | | | | | | **1** | **1** |
| *Tetrao tetrix* LINNAEUS, 1758 | | | | | | | | | | | 1 | 1 | | | | | | | | | **1** | **1** |
| *Tetrao urogallus* LINNAEUS, 1758 | | | | | | | | | | | 2 | 1 | | | 1 | 1 | 6 | 2 | | | **9** | **4** |
| Galliformes | | | | | | | | | | | | | | | | | | | 5 | ? | **5** | |
| cf. *Fulica* | | | 2 | 1 | | | | | | | | | | | | | | | | | **2** | **1** |
| Rallidae | | | | | | | | | | | | | | | 1 | 1 | | | | | **1** | **1** |
| *Larus hyperboreus* GUNNERUS, 1767 / *Larus marinus* LINNAEUS, 1758 | | | 2 | 2 | | | | | | | | | | | | | | | | | **2** | **2** |
| *Larus fuscus* LINNAEUS, 1758 | | | 1 | 1 | | | | | | | | | 2 | 1 | | | | | | | **3** | **2** |
| Strigiformes | | | 1 | 1 | | | | | | | | | | | | | | | | | **1** | **1** |
| *Garrulus glandarius* (LINNAEUS, 1758) | 1 | 1 | 2 | 2 | 6 | 3 | | | | | 8 | 4 | | | | | | | | | **17** | **10** |
| *Corvus corax* LINNAEUS, 1758 | | | | | | | 1 | 1 | | | | | | | | | | | | | **1** | **1** |
| Aves indet. | | | 11 | | | | 4 | | | | | | 17 | | | | 14 | | 16 | | **62** | |
| **Total** | **2** | **2** | **97** | **27** | **11** | **6** | **16** | **8** | **8** | **7** | **19** | **10** | **28** | **6** | **40** | **19** | **54** | **11** | **32** | **6** | **307** | **102** |

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