

The Bird Resources of Medieval Novgorod, Russia

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Abstract. This paper summarises recent studies on bones from Novgorod The Great, and the nearby settlement of Ryurik Gorodishche, in north-west Russia. Bird bones are frequently collected along with the mammal bones. Preliminary findings have indicated that ducks and chickens were the most common birds utilized, with the latter possibly growing in importance in the later levels. Situated where the river Volkov flows north out of Lake Ilmen, the wetland environment of the settlement is reflected in the high number of waterfowl in the assemblages. Other species include game-birds, raptors, and corvids. There is some indication of hawking and perhaps of captive wild birds. Wet-sieving trials have revealed that bird bones are under represented and that there is also some bias in favour of the larger species and elements. Detailed analysis of the bones from Gorodishche showed a similar, although less diverse, species representation to that in the main town. Analysis includes the collection of metrical, anatomical, and butchery data and it is intended that this preliminary work should form the basis of more detailed analyses, including intra-site and diachronic comparisons, both at Novgorod and in the region as a whole.

Key words: Novgorod The Great, Ryurik Gorodishche, Russia, Medieval, ducks, domestic fowl, hawks.

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I. INTRODUCTION

The city of Novgorod The Great in North West Russia straddles the River Volkov where it leaves Lake Ilmen (Fig. 1). The city has its origins in the 10th century AD and at its height controlled a huge region extending north to the White Sea. Systematic excavations on the Kremlin side started in 1932 and, apart from a short break during the 2nd World War, have continued ever since. Water-logging preserves a wealth of material including timber houses and streets, leather, metals and the famous birch-bark documents (YANIN 1992). In recent years archaeological investigations have expanded to the hinterland and include the settlement of Ryurik Gorodishche (NOSOV 1992). This settlement near Lake Ilmen was founded before Novgorod and was a major craft and trading centre by the 9th century AD. After the founding of the new administrative and ecclesiastical centre at Novgorod in the 10th century it was not immediately abandoned but continued to function alongside the growing new town. This pair of settlements has parallels with other towns in north west Europe – Birka and Sigtuna in Sweden, Hedeby and Schleswig in Germany, and Hamwic and Southampton in England.

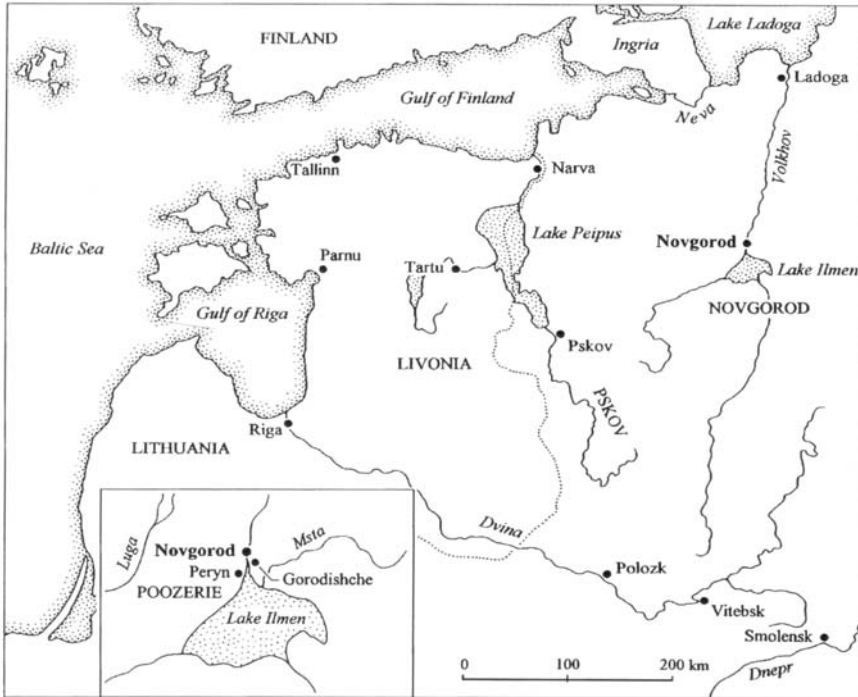


Fig. 1. Localization of the city of Novgorod where the excavations were carried out (based on BRISBANE & GAIMSTER 2001).

This paper summarises preliminary findings on the bird bones from recent studies on animal bones from Novgorod and Gorodishche. The main aims of the faunal project overall have been: to assess the state of preservation of the bones, the methods of recovery, carry out wet-sieving trials, build up a reference collection of animal bones in Novgorod, provide training for Russian colleagues in archaeozoological methods and practice; and to make recommendations for future work (MALTBY & HAMILTON-DYER 1995, 2001).

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II. RECOVERY METHODS

B o n e c o n d i t i o n

Bone preservation is extremely good, particularly in Novgorod itself where the water table has risen locally with the build up of cultural deposits, which now reach a thickness of up to six metres. The bones are often in pristine condition with almost no sign of abrasion or chemical damage. Even the most delicate bones survive well in these dark, organic deposits.

Recovery methods

Prior to the start of the current project in 1993, collection of animal bones from Novgorod was sporadic. A sample of animal bone was studied and published in 1956 (TSALKIN 1956). This was primarily a selection of the large mammal bones and did not address such issues as changes through time, butchery techniques, metrical studies, and takes no account of modifying taphonomic factors such as differential preservation and method of recovery, which are so much a part of modern archaeozoological research. Nor are the results of the analysis applied to the archaeology of the site. Skulls and artefacts continued to be collected but no other material was retained. For the current project bone was initially collected from a selection of spits at the Troitsky site during the 1993 and 1994 excavation seasons. Subsequently bones have been collected by hand from each property within each spit on Troitsky site XI. Comparisons were made with material from Rurik Gorodishche, which had been collected from 1979 onwards. Temporary facilities for storage and recording were made available. A lack of permanent storage space and suitable containers are a major problem and most of the bones have not been retained after recording.

Limited sieving trials were instigated at the Novgorod Troitsky excavations, primarily to check for possible recovery bias. It was clearly demonstrated that smaller bones are severely under-represented in the hand collection. Fish bones form only about 1% of a typical hand-collected assemblage from the Troitsky sites, and of large species only, while sieved samples from the 1993 excavations contained between 48% and 89% fish bones. Bird bones formed about 40% of the total identified mammal and bird bones in the sieved samples, whereas they rarely contribute more than 10% in hand-collected assemblages. The trials also revealed that for the birds small bones such as phalanges had been missed and that a bias towards the major (meat) bones in the hand-collected material did not indicate trimming and selective disposal – an important point for the interpretation of the remains here and for assemblages from similar sites. Smaller species were also a little more frequent and a few new species occurred that were not found by hand collection. It was clear, however, that unlike the fish the hand-collected material could provide an acceptable group for analysis, providing these factors were taken into account.

At the Gorodishche excavations wet-sieving was already a routine part of the excavation and all bone from both hand collection and sieving was retained for the study, though not kept separate.

III. SPECIES REPRESENTATION

Although the preservation of bone is good and many of the bird bones were found substantially complete, a lack of reference material hampered the precise identification of certain bones. Some bird groups are difficult to separate in any case. The duck bones for example, were mainly separated into Mallard/domestic-sized, medium sized (e.g. Wigeon) and small (e.g. Teal), though it was possible to separate the surface ducks from the diving ducks for some bones, and the measurement ranges given by WOELFLE (1967) were found to be useful. Permission was also obtained to check some of the material with reference collections in England.

Despite identification difficulties, at least 25 species have already been identified. The majority by far, from both settlements, are of chicken *Gallus gallus* (LINNAEUS, 1758) f. *domestica*, and of ducks (Anatinae). The ducks are of several types and sizes with Mallard, *Anas platyrhynchos* LINNAEUS, 1758 or its domestic equivalent, the most frequent. Teal *Anas crecca* LINNAEUS, 1758, the smallest of the European ducks, was also present in good numbers. The nine bones of teal from a single sieved sample from Troitsky amply illustrates the importance of sieving, if one is to more fully appreciate the role of the smaller species. Other duck bones included several comparable with Pochard *Aythya ferina* (LINNAEUS, 1758), Wigeon *Anas penelope* LINNAEUS, 1758, and Garganey *Anas querquedula* LINNAEUS, 1758. Positive identification of individual bones in the assemblage was difficult; the duck family contains a large number of species, several of which can be found in the region, and many of the bones overlap in size range and form. Bones have frequently been assigned to the nearest size group in the archive. Other possible species which occur in the area are

Gadwall *Anas strepera* LINNAEUS, 1758; Pintail *Anas acuta*, LINNAEUS, 1758; Shoveler *Anas clypeata*, LINNAEUS, 1758; Tufted Duck *Aythya fuligula* (LINNAEUS, 1758) and Goldeneye *Bucephala clangula* (LINNAEUS, 1758). Apart from the Mallard, which is resident all year round, all the duck species are summer visitors to the region. Pochard, Tufted Duck and Goldeneye are diving ducks whereas all the others are surface feeders.

The domestic fowl (chicken) is the only bird that was certainly domestic. The remains included bones from males, females and immature birds. Some of the bones contained medullary deposits and would have been females culled at some point during the breeding season rather than in the winter. Most of the tarsometatarsi with spurs would have been from male birds. The remains are mainly of the small birds that appear to be typical of medieval material all over Europe. Measurements of these, and of the other bird bones are routinely taken for future analysis. The uppermost levels at Troitsky contained some larger individuals but the size overlap between fowl and Black Grouse *Tetrao tetrix* LINNAEUS, 1758 has meant that only some elements could be identified with any certainty. The proportion of anatomical elements differs from the findings for the ducks. This may be due to the difference in size of the major limb bones; ducks have comparatively small leg bones which are more likely to have been overlooked by hand collection, whereas the carpometacarpus of chicken was much less common than that of the ducks.

Bones of geese are less common than those of chicken and ducks but are a consistent presence. As in the case of the mallard, the bones of domestic geese are very difficult to separate from those of its wild Greylag ancestor, *Anser anser* (LINNAEUS, 1758) and captured and tamed birds will be impossible to distinguish. All the bones were comparable with Greylag, the only species which is a summer visitor today. It is highly likely that at least some of these birds would have been domestic.

In addition to these main groups there are several occurrences of raptors, grouse and corvids. Other species are very rare occurrences, often of no more than one or two bones. The list of these taxa is extensive and includes grebe, heron, gull, pigeon, crane, and owl.

Numbers and distribution of taxa is given for Property G at Troitsky XI in Table I.

These other bird species fall into three broad groups; those that, like the ducks, were probably exploited for meat, those which are likely to have been used in falconry, and the remainder which are probably natural mortalities or killed as perceived pests.

G a m e b i r d s

Of the first group, Capercaillie, *Tetrao urogallus* LINNAEUS, 1758 is the most notable for size and frequency, at least 22 bones being recovered from the Troitsky site and two more from Gorodishche. This large game bird feeds mainly on conifer shoots, which gives the meat an unusual flavour that is an acquired taste. A few bones of its smaller relative, the Black Grouse, *Tetrao tetrix* LINNAEUS, 1758 have been positively identified on Troitsky IX. There are some bones in the size overlap between female Capercaillie and male Black Grouse which cannot be distinguished for certain. No bones of other, smaller, species of the grouse family were positively identified, but some fragmentary bones can be difficult to distinguish from chicken, with which they can also overlap in size, so these have not been entirely ruled out. The Black Grouse is one of the few birds mentioned in the birch-bark documents (RYBINA 2001).

Waders are rather rare, a few bones comparable with Snipe *Gallinago gallinago* (LINNAEUS, 1758) from two of the Troitsky sites and one comparable with Woodcock *Scolopax rusticola* LINNAEUS, 1958 from Gorodishche were found. Other waterfowl probably used for meat include a swan *Cygnus* sp. BECHSTEIN, 1803 from Gorodishche and several bones of the Great-crested Grebe *Podiceps cristatus* (LINNAEUS, 1758) were found at two of the Troitsky sites. One of the Great-crested Grebe bones is a tibiotarsus with clear cut marks, implying that even these diving birds had been eaten, perhaps after being accidentally caught in fishing nets or duck decoys. Cut marks on the humerus of a white or black stork, *Ciconia ciconia*, or *C. nigra* (LINNAEUS, 1758) from Troitsky IX imply that this too was utilized.

Pigeon bones were also occasionally found. These are large, of Woodpigeon *Columba palumbus* LINNAEUS, 1758 size rather than the smaller Domestic Dove/*Columba livia* GMELIN, 1789.

Table I

Distribution of remains belonging to particular bird taxa in successive levels of excavation in Novgorod Troitsky XI, Property G.

Troitsky XI, Property G	level 10		level 11		level 12		level 13		level 17		level 19		level 20		level 21		Total											
	N	%B	N	%B	N	%B	N	%B	N	%B	N	%B	N	%B	N	%B	N	%B										
Grebe	1	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1										
Cormorant	0	0	0	0	0	0	0	0	0	0	1	0.4	0	0	0	0	1	0.1										
Heron	0	0	0	0	0	0	0	0	0	0	3	1.1	0	0	0	0	3	0.3										
Goose	9	10.0	14.3	10	10.8	16.9	0	0	10	16.7	26.3	4	1.9	2.8	8	2.9	4.6	2	2.1	3.3	8	8.2	11.8	51	5.2	7.8		
Swan	0	0	0	0	0	0	0	0	0	0	0	1	0.4	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	
Mallard/domestic duck	16	17.8	25.4	13	14.0	22.0	7	10.6	14.3	12	20.0	31.6	71	33.8	49.0	113	41.2	65.3	45	46.9	73.8	27	27.8	39.7	304	30.8	46.3	
Other ducks	7	7.8	13	14.0	3	4.5	7	11.7	7	11.7	21	10.0	41	15.0	41	11.5	15	15.5	11	11.5	15	15.5	15	15.5	118	12.0		
Sparrowhawk	1	1.1	2	2.2	5	7.6	1	1.7	1	1.7	11	5.2	1	0.4	1	1	0	0	1	1	1	0	0	0	22	2.2		
Goshawk	3	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.0	4	0.4
Buzzard	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	
Harrier	0	0	0	0	0	0	0	0	0	0	2	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	
Domestic fowl (chicken)	38	42.2	60.3	36	38.7	61.0	42	63.6	85.7	16	26.7	42.1	70	33.3	48.3	52	19	30.1	14	14.6	23.0	33	34.0	48.5	301	30.5	45.9	
Capercaillie	3	3.3	4	4.3	0	0	2	3.3	2	3.3	1	0.5	6	2.2	6	2.2	3	3.1	3	3.1	3	3.1	3	3.1	22	2.2		
Capercaillie/Black Grouse	0	0	1	1.1	0	0	3	5	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	5	0.5		
Crane	3	3.3	1	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.4		
Waders	0	0	0	0	0	0	0	0	0	2	1.0	1	0.4	1	0.4	1	0.4	0	0	0	0	0	0	0	3	0.3		
Gull	0	0	0	0	0	0	0	0	0	2	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2		
Pigeons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2.1	2	2.1	0	0	0	0	2	0.2		
Tawny Owl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.7	0	0	0	0	0	0	0	2	0.2		
Raven	1	1.1	0	0	1	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2		
Other corvids	2	2.2	3	3.2	2	3.0	0	0	3	1.4	8	2.9	4	4.2	1	1.0	1	1.0	4	4.2	1	1.0	1	1.0	23	2.3		
Unidentified	6	6.7	10	10.8	6	9.1	7	11.7	7	11.7	23	11.0	37	13.5	13	13.5	9	9.3	13	13.5	9	9.3	9	9.3	111	11.3		
Total NISP	90	63	93	59	66	49	60	38	210	145	274	173	96	61	97	68	986	656										

%B = percentages of goose, Mallard, fowl.

Raptors and hawking

Several species of raptor have been identified, some such as the Buzzard, *Buteo buteo* LINNAEUS, 1758 and kite, *Milvus sp.* LACEPEDE, 1799 are likely to have been found scavenging on the rubbish around the settlement. Pits for the disposal of rubbish are rare due to the height of the water table, and rubbish appears to have built up in yard middens and disused areas. These birds may have been deliberately killed for their potential threat to young poultry. Several of the other species are well known as falconers' birds. Of these, Sparrowhawk *Accipiter nisus* (LINNAEUS, 1758) and Goshawk *Accipiter gentilis* (LINNAEUS, 1758) are the most frequently identified from Novgorod. The Hobby *Falco subbuteo* LINNAEUS, 1758 occurred at two sites. This bird follows and preys on the migratory swifts and swallows, which are very numerous today in Novgorod, so these finds may be of natural mortalities. The status of some birds is ambiguous, many remains may simply be of local birds living and dying in the area, or they may have been killed as perceived pests. The few bones of kite, Hen Harrier *Circus cyaneus* (LINNAEUS, 1766) and eagle fall into this category. Eagles have sometimes have been held in high regard but the White-tailed Eagle *Haliaeetus albicilla* (LINNAEUS, 1758) is a scavenger, particularly of fish as well as a hunter. An eagle wing comparable with that of the White-tailed Eagle was found in 12th century deposits at Troitsky. This had cuts marks on the proximal part of the humerus, representing disarticulation from the carcass, but also across the carpometacarpus, perhaps made during removal of the feathers.

Finds from earlier excavations at the Nerevsky site in Novgorod include two bird bones retained in the Novgorod State Museum because they are associated with leather thongs. Both are tarso-metatarsi, one of an immature Crane *Grus grus* (LINNAEUS, 1758) and the other of Buzzard. Neither of these birds would be used for hawking but the shape and size of the thongs closely resemble falconers' jesses. It seems possible that these are from the remains of captive birds, perhaps even used as decoys. Bells have also been found among the metal artefacts which could be interpreted as falconers' equipment. While many thousands of items have been catalogued many have yet to be studied in detail and this is an area of potential for future research.

The status of some birds is debatable, those such as gull (probably the Black-headed Gull *Larus ridibundus* LINNAEUS, 1766); Raven *Corvus corax* LINNAEUS, 1758; Crow *Corvus corone* LINNAEUS, 1758; jackdaw, *Corvus monedula* LINNAEUS, 1758; and Tawny Owl *Strix aluco* LINNAEUS, 1758 may have been natural mortalities. Others may have been killed as undesirable scavengers. The larger corvids are opportunistic and, like the Buzzard, will take young chicks.

Small passerines were absent amongst the bird bones, apart from three bones in one sieved sample. Although these are not usually common in medieval rubbish assemblages and the surrounding countryside is better suited to waterbirds, one might have expected to find a few more bones. This lack of passerines and other small birds is curious. There are several species in the area today including warblers, thrushes and swallows. It is, therefore, probably of significance that the long-term policy of sieving at Gorodishche had not recovered any bones of small birds, although huge numbers of fish bones were found. This may indicate the general lack of small birds, other than species such as the Marsh Warblers, in the marshy area that surrounds the site, or more likely that they were not desired as food. The town area of Novgorod is larger and drier and offers more suitable habitats for the smaller species but almost none have been found in the sieved material. If not eaten then they would only become incorporated into the deposit as incidental remains and not as discarded food refuse, which may be significant. The proportion of sieved material from the town excavations is also very small and more may be found if sieving is continued.

IV. COMPARISON OF SITES

In the 10th to 11th century AD deposits at Gorodishche ducks are the most frequent taxa, comprising well over half of all bird bones (Fig. 2). Domestic fowl (chicken) form nearly one third of the bones. Teal and other ducks were usually more frequent than fowl but occurred less frequently

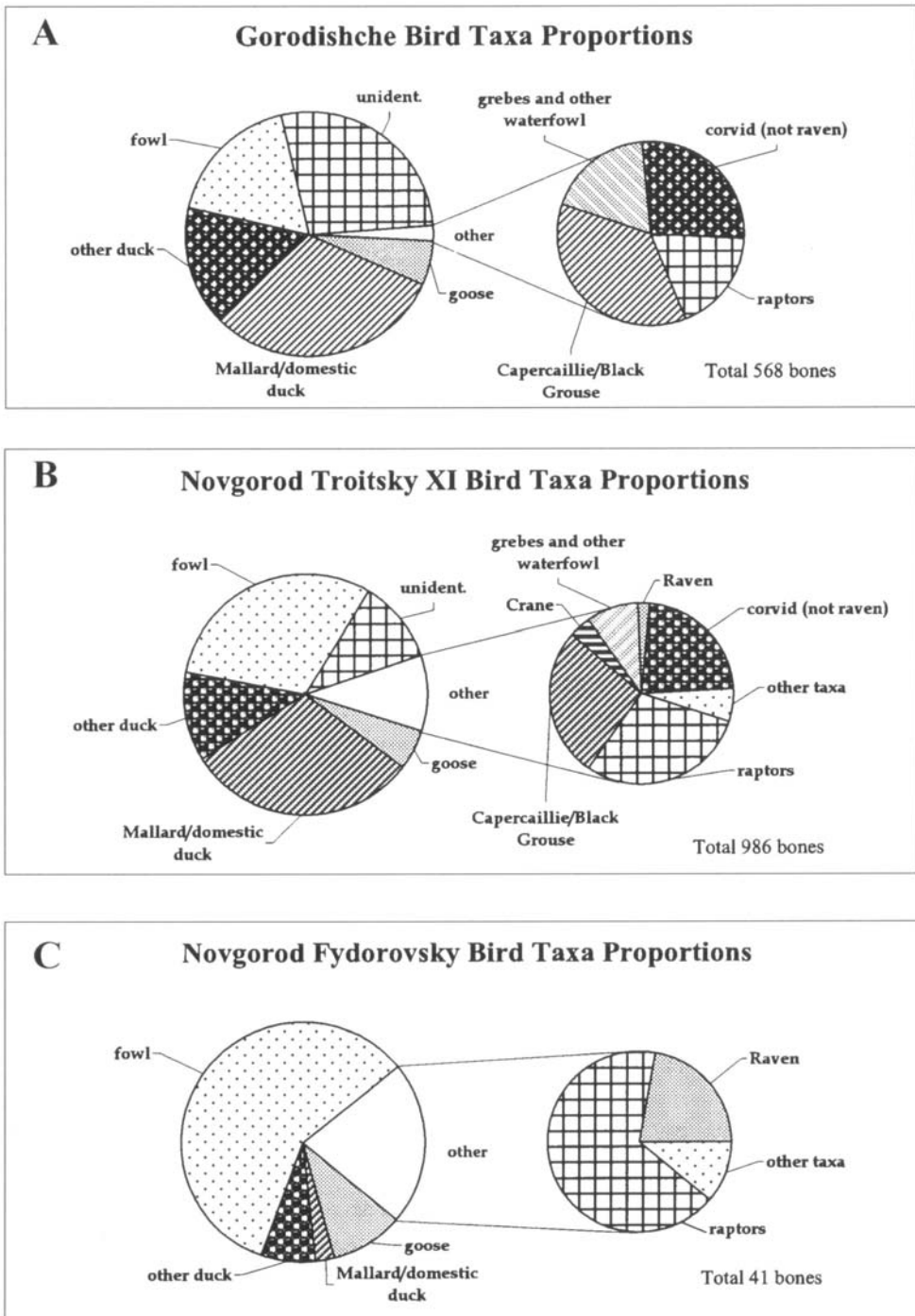


Fig. 2. Proportions of bird remains from three excavation localities: A – Gorodishche, B – Novgorod Troitsky XI, and C – Novgorod Fyodorovsky.

than Mallard. Bird bones in general were better represented from the upper levels at Gorodishche. Although the samples are small this may indicate a slight increase in the use of birds through time. In the 1979 material which was hand collected only, the 18 bird bones represented 2% of the large mammal+bird total whereas from the later, sieved, excavations bird bones amount to 8%, four times greater, thus illustrating the importance of sieving for bird bones (MALTBY & HAMILTON-DYER 2001).

At Troitsky the relative proportions of bird species varies from level to level and within areas, but most of the samples from the lower levels are also heavily biased in favour of ducks. In the 12th to 13th century levels they are usually more equal. There is some evidence that fowl is more frequent than ducks in the upper levels, though this finding is not consistent for all areas of Troitsky. In the, admittedly small, sample from Fyodorovsky on the Yaroslav side of Novgorod it is fowl that dominates the assemblage at 60% of all bird bone. While this site is the latest in date (15th ?) of all the Novgorod material so far investigated, its position on the other side of the river may also be a factor and more material is required to confirm that this is a settlement wide change through time rather than site specific variation.

Several species of bird have been identified in the Novgorod samples, which were not recorded at Gorodishche. These include Sparrowhawk, Goshawk, Buzzard, and stork. These species are represented by relatively few bones and perhaps this wide variety of the minor taxa from Troitsky may simply be an artefact of assemblage size, reflecting the fact that larger samples have been obtained from Novgorod. However, the Fyodorovsky assemblage also has a comparatively high diversity with at least nine species represented in a sample of only 41 bones. It may also reflect chronological variation with perhaps more species being exploited in the later medieval period after Gorodishche was abandoned. However, there is an impression that the assemblages from Novgorod are slightly more diverse than those from Gorodishche even in the earlier levels, perhaps indicating that the inhabitants had access to, or interest in, a wider range of species.

While access to domestic poultry and Mallard could be year round, the hunting of the wild birds would have been a largely seasonal activity; the winter season is long and severe and most of the birds are summer visitors only. Some take advantage of the lush vegetation growth of the marshes and water meadows while others feed on the huge amount of invertebrates. The hunting species also find plenty of prey here.

V. DOCUMENTARY AND OTHER EVIDENCE

Birds of any kind rarely figure in the famous birch bark documents, and to date it is not the common food birds that are mentioned. Black Grouse is specifically mentioned in one document while another lists unspecified falcons. Gyrfalcon, *Falco rusticolus* LINNAEUS, 1758 is also listed, although it has not yet been identified in the bone assemblage. This is the largest and most highly desired of the falcons but is not a common bird and its absence from the bone assemblage – which appears to be mainly of kitchen and butchery waste – is not surprising. These documents mainly deal with collection of tribute and taxes, fur species for example are frequently listed and perhaps this is the reason for the restricted list of presumably, special, high status, highly regarded birds (RYBINA 2001). The present distribution of the Gyrfalcon does not extend far enough south to be found in Novgorod, and, although the distribution may have been wider in the past it may also be significant that it is found today in the area of north Russia and Scandinavia that was once part of the territory under the control of Novgorod.

That birds had an important place in the culture can be seen in the numerous occurrences of zomorphic images as and on artefacts. Several can be identified as probable geese, ducks, cockerels/Capercaillie and raptors. They also occur in some of the religious artwork and even today this tradition is continued in architectural furniture and anthropomorphic bowls almost identical to those

recovered from the excavations. The Capercaillie is also used as one of the symbols for modern Novgorod.

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