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Birds from the Old East Slavic settlement Stadnyky 11th century

Work was performed at the Paleontology Department National Museum of Natural History at the National Academy of Sciences of Ukraine

The work presents the results of the analysis of a species diversity of the Old East Slavic settlement Stadnyky. The majority of hunted birds belong to the group Anseriformes (at least 45 % of the minimum possible number of individuals). Among other groups, Black Grouse is the dominant (8,33 %). Among the remains found there one can name some rare types of the West Polessye: *Gavia arctica*, *Aythya nyroca*. We have drawn the conclusions about the significant role of autumn hunting of birds, which took place in the life of Stadnyky inhabitants in the 11th century, and about a wide variety of biotopes in the region (open reservoirs with coastal thickets, pine forests on the swamps, open areas with shrubs, and, probably, alder forests). The distinctions between a domestic chicken of the village Stadnyky and the one of medieval settlements of East Polessye of Ukraine have been revealed.

Key words: birds of Polessye, Middle Ages, Old East Slavic settlement.

Горобець Л. В., Бондарчук О. А., Заруцька В. В. Птахи із давньоруського поселення Стадники XI ст.
Представлено результати аналізу видового різноманіття птахів із давньоруського поселення Стадники XI ст. (Рівненська область). Більшість мисливської здобичі становлять птахи ряду Гусеподібні (не менше 45 % мінімально можливої кількості особин), також численний глушець (8,33 %). Серед визначених видів виявлено рештки рідкісних на території Західного Полісся видів: *Gavia arctica*, *Aythya nyroca*. Зроблено висновки про значну роль осіннього полювання на птахів у жителів поселення Стадники XI ст., велике різноманіття біотопів у регіоні (відкриті водойми із зарослими берегами, соснові ліси з болотами, відкриті території із чагарниками та, можливо, вільхові ліси). Виявлено відмінності між домашньою куркою із с. Стадники та куркою із середньовічних поселень Східного Полісся України.

Ключові слова: птахи Полісся, середньовіччя, древньоруське поселення.

Горобец Л. В., Бондарчук А. А., Заруцкая В. В. Птицы из древнерусского поселения Стадники XI в.
Представлены результаты анализа видового разнообразия птиц из древнерусского поселения Стадники XI в. (Ровенская область, Украина). Большинство охотничьей добычи составляют птицы отряда Гусеобразные (не менее 45% минимально возможного количества особей), также многочисленный глухарь (8,33 %). Среди определённых видов нашли останки редких в наши дни на территории Западного Полесья видов: *Gavia arctica*, *Aythya nyroca*. За результатами работы сделано выводы о значительной роли осенней охоты на птиц у жителей поселения Стадники в XI в., о большом разнообразии биотопов в регионе (открытые водоёмы с заросшими берегами, сосновые леса с болотами, открытые территории с кустарниками и, возможно, ольховые леса). Обнаружены отличия между домашней курицей из Стадников и курицей из средневековых поселений Восточного Полесья Украины.

Ключевые слова: птицы Полесья, средневековье, древнерусское поселение.

Introduction. The remains of birds having been found at archaeological and paleontological excavations have been studied less thoroughly than remains of mammals or fish. 30 years ago A. Umanska [1, p. 3] paid attention to the lack of information about zooarchaeology research of birds in Ukraine. She published a number of interesting works in the field. But after her premature death in 1985, fossil and semi-fossil birds of Ukraine have not almost been studied. But also in world science the number of paleo-and arkheoornitological research is insignificant [5, p. 49]. Thus the birds are one of the most numerous groups for both the number of species and human use. Excavation of the Old East Slavic settlement in the village (Ostroh District, Rivne Oblast) was carried out in 1980 under the leadership of one of the authors of this article (A. Bondarchuk). Especially rich material was obtained from house № 5 (Fig. 1, 2), where many bones of domestic animals were found. Also a few hundreds of fragments of birds' bones, which were handed over to National Museum of Natural History at the National Academy of Sciences of Ukraine

(further NAMH), were found, but it was not until recently that they became identified. The results of identification are presented in this article.

Fig. 1. **Excavations in house № 5 in the settlement Stadnyky (photo A. Bondarchuk)**

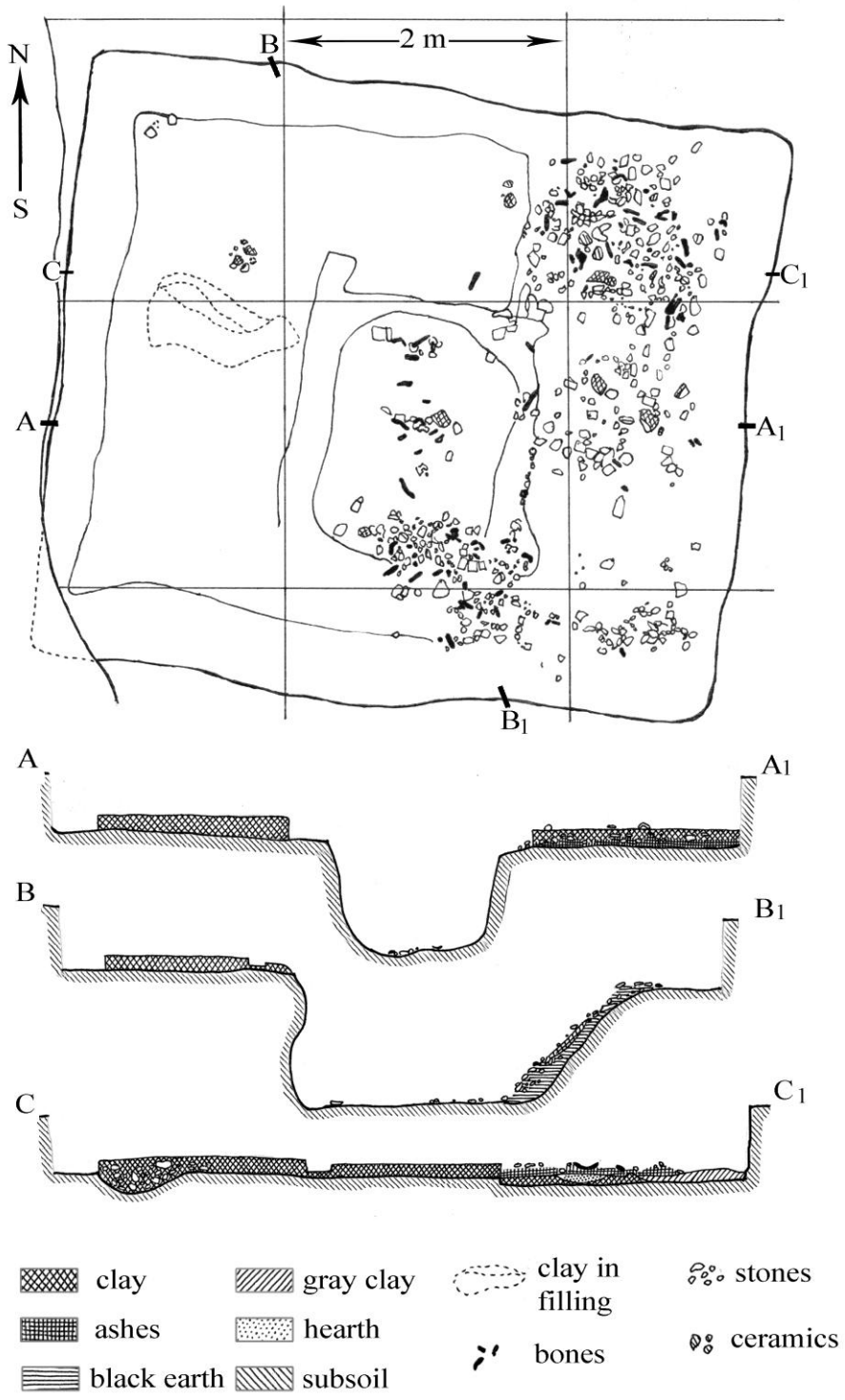

Fig. 2. **Plan the excavation house № 5 (published for the first time)**

Location. House № 5 is a rectangular semi-dugout (4,3×4,8 m) oriented to the cardinal points, (4,3×4,8 m), which is deepened by 0,5 m. The house didn't have pole-mounted pits and was only surrounded by grooves along the walls. There was oven-stove in the north-east corner. In the center there was a rectangular pit (0,95 m deep) for food storage. 15 cm thick layer of stones, bones, fragments of pottery, which were interspersed with ashes, was discovered under the rammed clay floor. Below there was another hard-packed floor. 30 bone punctures and blanks for them, a bone needle, iron knives, arrowheads, whetstones, a glass bead, clay spindles, ceramics were found in the house. In addition to birds' bones, there were some other findings. They are bones of domestic mammals: pigs (248 bones, belonging to 10 individuals), cattle (81 bone,

5 animals), sheep (19 bones, 4 individuals), goat (14 tiles 3 individuals), sheep and goats (77 bones), horses (19 bones 2 individuals), dogs (1 bone) and not diagnosed bone 498 (defining N. Belan in 1980s).

Material and methods. Osteological terminology follows Baumel & Witmer [4]. Measurements are in millimeters. The reference comparative skeletal collection Paleontology Department NMNH was used to determine the bones. Total 229 fragments of bones of birds, of which 125 could be determined, were found in house № 5. The bones are deposited in NMNH NASU (№ AZ 319–423) and in State historical and cultutal reserve of Ostrog (№ ОДІКЗ $\frac{кн-11168}{1936-1960}$). The species list is presented in Table 1.

Table 1

Species diversity of birds from the house № 5 of settlement Stadnyky

	cranium (fragments)	**proximal phalanges dig. majoris**	**Carpometacarpus**	**ulna**	**radius**	**humerus**	**Coracoideum**	**Scapula**	**furculla**	**sternum**	**synsacrum**	**femur**	**tibiotarsus**	**tarsometatarsus**	**Percentage of the total number of bones**	**The minimum number of individuals**	**Percentage of the total number of individuals**
Gavia arctica							1					1	1		**2,4**	1	**2,08**
Cygnus aff. *olor*						1									**1,6**	1	**2,08**
Anser anser	1	1		1	1	4			4	1	1				**11,2**	4	**8,33**
Anser anser cf. *domesticus*	1						1	1					4		**4,8**	3	**6,25**
Anser erythropus							1								**0,8**	1	**2,08**
Anser albifrons	1					1									**1,6**	1	**2,08**
Anser fabalis						1									**0,8**	1	**2,08**
Anser fabalis / A. a. domesticus						1									**0,8**	1	**2,08**
Anser sp.			2	2		4									**6,4**	4	**8,33**
Anas platyrynchos	6			1	3	4	2	3	3	2			2		**20,8**	4	**8,33**
A. platyrynchos cf. *domesticus*						4									**3,2**	4	**8,33**
Anas acuta						1		2					1		**3,2**	2	**4,17**
Anas clypeata													1		**0,8**	1	**2,08**
Anas penelope							1						1		**1,6**	1	**2,08**
Anas cf. *penelope*						1									**0,8**	1	**2,08**
Anas clypeata / penelope							1						1		**1,6**	1	**2,08**
Anas strepera							1								**0,8**	1	**2,08**
Anas querquedula						1									**0,8**	1	**2,08**
Netta rufina cf.							1								**0,8**	1	**2,08**
Aythya nyroca													1		**0,8**	1	**2,08**
Tetrao tetrix			5	1	2		6	2		1		1	8		**20,8**	4	**8,33**
Tetrastes bonasia													2		**1,6**	1	**2,08**
Perdix perdix												1	2		**2,4**	2	**4,17**
Gallus gallus f. *domestica*				3			2	1					2		**6,4**	3	**6,25**
Gallus gallus f. *domestica* (juv.)							1						2		**2,4**	2	**4,17**
Corvus frugilegus			1												**0,8**	1	**2,08**

Discussion. In contrast to the mammal bones from this settlement, the majority of birds' bones do not belong to domestic animals but to those having been hunted. Although the residents of the settlement kept

chickens, geese, and probably, ducks, their percentage is not more than 27 % of the minimum possible number of individuals. Whereas in medieval Slavic settlements on the territory of Ukraine poultry occupied over than 50 % of the total number. Even in the Bronze Age and early Iron Age the remains of birds occupied more than 30 % [1, p. 13]. Obviously, bird hunting was important to the ancient inhabitants of the settlement Stadnyky. The variety of the species having been hunted has the following features. Like in other ancient settlements, the majority of hunted birds belong to the group Anseriformes (at least 45 % of the minimum possible number of individuals). Among them there are Ferruginous Pochard (*Aythya nyroca*) and possibly, Red-crested Pochard (*Netta rufina*) – species, which are now rare in the Polesye region. Among other groups, Black Grouse is the dominant (8,33 % of the minimum possible number of individuals). There is no Capercaillie in extraction. Obviously, the ancient inhabitants of Polesye (not only in settlement Stadnyky, in general) rarely hunted this species. Only one individual of wood-grouse was found in medieval settlements of Ukrainian Polessye in Zhytomyr Oblast [1, p. 16].

The dominance of species of Galliformes and Anseriformes series is quite predictable. The surprise was Black-throated Loon (*Gavia arctica*) and Rook (*Corvus frugilegus*). Black-throated Loon is a rare migratory bird on the territory of Ukraine. There is no reason to believe that a thousand years ago the situation was different. The presence of loons and a wide variety of species of geese and ducks leads to the assumption that the birds (at least most of them) from house № 5 were hunted during the migration. It is most likely to have been in autumn. This season is the best for several reasons: birds are well-fed; a hunter can get around easier in the woods or near a pond; during autumn migration birds often linger in one place forming an accumulation. Birds couldn't be hunted in winter because for wintering the majority of waterfowls need large bodies of water. There is a small river Goryn close to the village Stadnyky, which is not suitable for wintering.

Extraction could not have been hunted during the breeding season. In addition to loons, there are some species for nesting where forests and ponds of Polessye are unsuitable. They are *Anser erythropus*, *Anser albifrons*, *Anser fabalis*, *Anas penelope*, *Netta rufina* та *Aythya nyroca*. All the remains were found in the house, so Rook wasn't in the landfill accidentally. It can be assumed that a rook was eaten to quench hunger, but it is unlikely. Nature of Polessye is rich in birds and it is possible to find the better loot. We can support the assumption of Tereza Tomek that the birds with black feathers could be used with a particular religious order [10, p. 16].

Fig. 3. **Coracoid Anser anser domesticus (№AZ-337) from incisura n.supracoracoidei**

Palaeontological data support the fact that ecological characteristics of birds did not change during the ages. Knowing the properties of the birds of our time, one may draw conclusions regarding the biological character of earlier environments [5, p. 51]. Open water with dense riparian vegetation is necessary for these types of ducks. In such habitats vegetation is either absent or represented by underwater species: *Phragmites australis, Typha angustifolia, Glyceria maxima, Sagittaria sagittifolia* etc. Black Grouse in Polessie prefers pine forests, which grow around swamps. Hazel Grouse lives primarily in alder forests. Grey Patridge needs open terrain with intermittent bushes [2, p. 152]. Thus, the area of settlement Stadnyky in the XI century was surrounded by different types of inhabitants.

Bone № AZ-337 – goose coracoideum has an interesting structure. The shape and size do not call into question that it belonged to the domestic goose (*Anser anser domesticus*) (Fig. 3): width of scapular part 15,1 mm, width of extermitas omalis 17,5 mm, sternal width 30,8 mm. Coracoid of wild Gray goose (*Anser anser*) has smaller size: width of scapular part 12,93 mm, width of extermitas omalis 14,6 mm, sternal width 27,1 mm (n = 3). Large specimens of Bean Goose (*Anser fabalis*) are similar in size to the bone № AZ-337, but they differ by the presence of hole in the upper edge cotyla scapularis. A distinguishing feature of the bones of the location Stadnyky is clear incisura n.supracoracoidei, which is contoured in front edge. This feature isn't inherent to the modern wild species Anseriformes. Among domestic geese, we found this characteristic in

only one out of ten birds. Note, that in modern birds incisura n.supracoracoidei, which is outlined on the leading edge, was only on the left coracoid (left coracoid was also found in Stadnyky). Right coracoid is not different from right coracoid of other geese.

The bones of chickens from the village Stadnyky belonged to the small individuals. The results of measurement of the distal epiphysis tibiotarsus widths are given in Table 2. Indicator 9,5–10,5 mm is close to the size of the smallest domestic chicken [9, p. 66]. They are much smaller then chickens from medieval settlements of Ukraine, which were described by Umanska [3, p. 78]. There is a conclusion in her article, that tibiotarsus of chickens from medieval settlements of Ukraine are bigger than in chickens from medieval settlements in Central Europe. However, the sizes of bones from Stadnyky are closer to the chickens' sizes from European locations. This discrepancy is explained by the fact that the findings, which Umanskaya used, were not from the whole zone of mixed forests of Ukraine but only from Zhytomyr and Kyiv regions. In the Middle Ages, the form of chickens kept in the Western Polessye was different from the one of chickens bred by residents of East Pollesye.

Table 2

Tibiotarsus distal width of Gallus gallus domestica

Locations	Age	min	max	mean	N
Stadnyky	**11th century**	**9,5**	**10,5**	**10,05**	**4**
Mixed forest zone of Ukraine (Umanskaja, 1972)	Medieval	10,2	18,0	14,8	23
Forest-steppe zone of Ukraine (Umanskaja, 1972)	Medieval	10,0	17,4	11,8	38
Steppe zone of Ukraine (Umanskaja, 1972)	Medieval	16,5	23,0	20,3	14
Pohansko (Czech Republik) (Kratochvil, 1969)	Medieval	9,0	11,9	9,92	23
Tienen (Belgium) (Lentacker & all, 2002)	3th century	9,6	14,5	12,1	222

Conclusions. In the diet of the inhabitants of the settlement Stadnyky, unlike most of the medieval settlements of Ukraine, a hunted bird species prevailed over the domestic birds' species. Probably, the most intensive hunting on birds was in autumn. The basis of the wildfowl was wild ducks, geese and Black Grouse.

There are remains of not hunted species, which were found in the ancient Slavic house: Black-throated Loon and Rook. We assume that the Rook was used for religious purposes.

The analysis of species diversity of wild birds has showed that there was a wide variety of biotopes in the XI century in Stadnyky. There were available open reservoirs with coastal thickets, pine forests on the swamps, open areas with shrubs, and, probably, alder forests.

Chickens from this settlement were of small size, they also differed from the chickens from the Middle East of Polesye.

Sources and literature

1. Брюзгина (Уманская) А. С. Позднеантропогеновые птицы Украины и смежных территорий (преимущественно по материалам из археологических памятников) : автореф. дис .... канд. биол. наук : 03.00.08 / А. С. Брюзгина (Уманская). – Киев, 1975. – 25 с.
2. Давиденко І. В. Сучасний склад та розподіл мисливських видів птахів у водно-болотних угіддях Полісся та Лісостепу України / І. В. Давиденко // Лісове та мисливське господарство: сучасний стан та перспективи розвитку : матер. Міжнар. наук.-практ. конф. – 2007. – Т. І. – С. 151–155.
3. Уманская А. С. Домашние птицы из археологических памятников Украины / А. С. Уманская // Природная обстановка и фауна прошлого. – Киев : Наук. думка. – 1972. – Вып. 6. – С. 71–95.
4. Baumel J. J. Osteologia / J. J. Baumel, L. M. Witmer // Handbook of avian anatomy: Nomina Anatomica Avium // Publications of the Nuttall Ornitological Club. – 1993. – № 23. – P. 45–132.
5. Gal E. The Role of Archaeo-Ornithology in Environmental and Animal History Studies / E. Gal // Archaeological and Cultural Heritage Preservation within the Light of New Technologies. – 2005. – P. 49–62.
6. Kratochvil Z. Wildlebende Tiere und einige Haustiere der Burgstätte Pohansko / Z. Kratochvil // Přírodovědné práce ústavů Československé akademie věd v Brně. – 1969. – T. 3, Nova ser. – S. 44.
7. Lentacker A. Gastronomy or religion? the animal remains from the mithraeum at Tienen (Belgium) / A. Lentacker, A. Ervynck, W. van Neer // Proceedings of the 9th Conference of the International Council of Archaezoology «Behaviour Behind Bones». – 2002. – P. 77–94.
8. Makowiecki D. Bird remains of Medieval and Post-Medieval coastal sites at the Southern Baltic Sea, Poland / D. Makowiecki, A. B. Gotfredsen // Acta zoologica cracoviensia. – 2002. – № 45 (special issue). – P. 65–84.

9. Tomek T. A key for the identification of domestic birdbones in Europe: Galliformes and Columbiformes / T. Tomek, Z. M. Bochenski. – Kraków : Institute of Systematics and Evolution of Animals Polish Academy of Sciences, 2009. – 111 p.
10. Tomek T. Bird remains from the Mesolithic and Neolithic Site Dudka Masuria NE Poland / T. Tomek, W. Guminski // Acta zoologica cracovienska. – 2003. – № 46 (1). – P. 9–19.

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