Daniel Makowiecki

Archaeozoology on Animals in Social Space of Medieval Poznań

in: Benecke et al. - Leben in der mittelalterlichen Stadt – neue archäobiologische Forschungen: Workshop 29. November 2019, Berlin, 75-90

https://doi.org/10.34780/95e5-43m0

Herausgebende Institution / Publisher:
Deutsches Archäologisches Institut

Archaeozoology on Animals in Social Space of Medieval Poznań

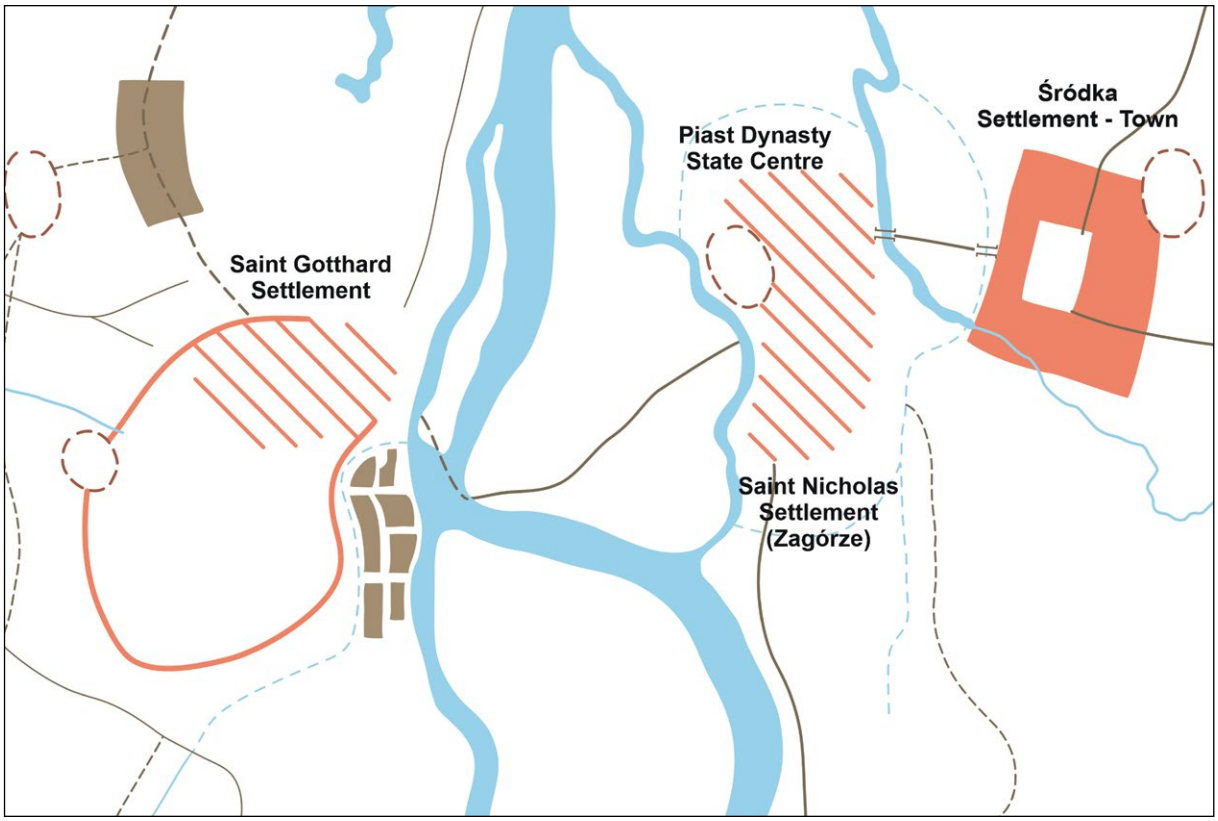
by *Daniel Makowiecki*

Introduction

Archaeozoological studies have a rather long tradition in Poland, going back at least to the beginning of the 20th century[1]. However, studies devoted to the importance of animals for the development of cities are rare. They mainly concern early medieval strongholds such as Wrocław, Szczecin, Wolin, Kołobrzeg, Gdańsk and others, from which cities developed from about the middle of the 13th century onwards[2]. Late medieval cities have rarely been the subject of such studies[3].

In this context, Poznań takes a completely special position. On the one hand, it is a city whose history began together with the beginnings of Poland founded by the Piast dynasty. It was not only patrimony of the family, but also one of the centers with the rank of a capital (sedes regni principalis) of the created state. On the other hand, as a socio-spatial structure, it preserved its historical continuity, starting from the early medieval stronghold through the late medieval town to the early modern period. Thirdly, the archaeological studies carried out made it possible to discover remains of animal bones from all the historical periods mentioned and from the main social centers (Fig. 1–3). In fact, an extensive dataset has been obtained, which is a good basis for studies of the economically exploited fauna and for the settlement of the urban environment. From a socio-cultural point of view, it has been possible to consider the social diversification of the town, taking into account animals and the food produced from them, as well as raw materials of technological importance (productive) as a suitable measure for this criterion. The extensive results of the investigations were published in a separate monograph on animal use in the medieval and early modern Poznań[4]. The present contribution is based on this material and presents a synthetic sketch on selected issues of the diversification of urban zones in two stages of development, namely in the Early Middle Ages (10th to 13th century) and in the Late Middle Ages (mid-13th to 15th century).

1 Wyrost 1988.
2 Kubasiewicz 1959; Kubasiewicz 1977; Kubasiewicz – Gawlikowski 1965; Gawlikowski – Stępień 2014.
3 Gręzak 2007.
4 Makowiecki 2016.



1 Poznań. The main elements of social space in the 13th century

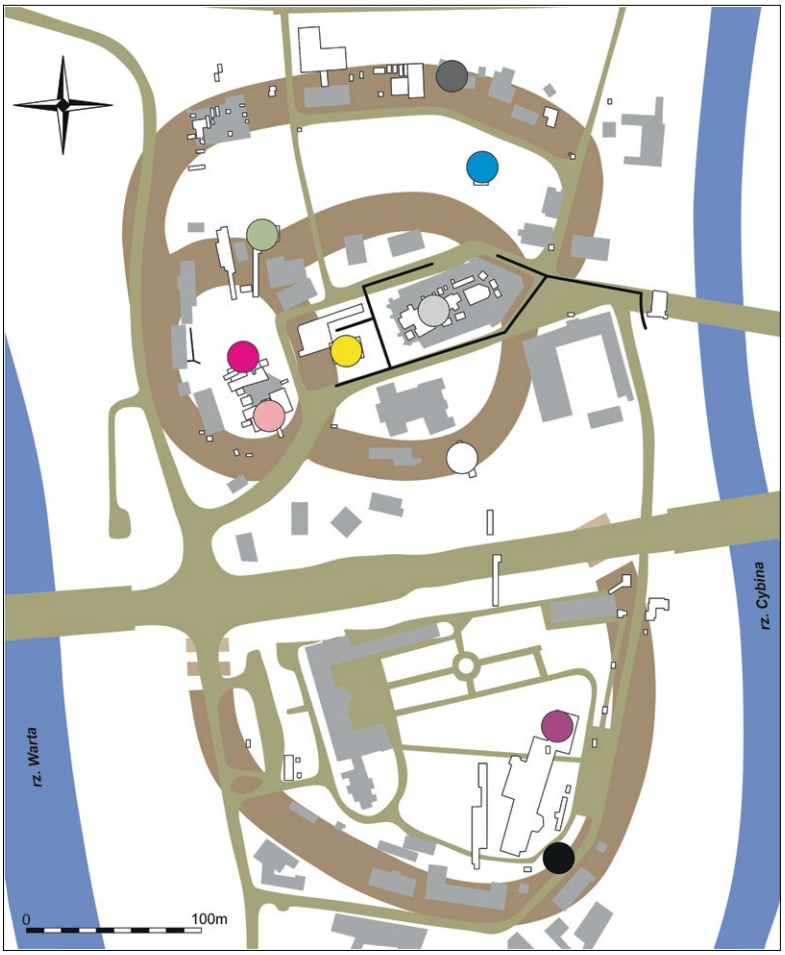
Historical, Spatial and Social Context of Archaeological Data

In the early medieval state of Civitas Schinesghe (approx. 10th–11th century) Poznań was one of the largest and most important central strongholds. Similarly to other centers of this kind (Gniezno, Ostrów Lednicki, Giecz and others) it concentrated a significant demographic potential. These included political and church elites, warriors who formed the military power, people who were in service and those who were engaged in certain forms of production[5]. The oldest stronghold, which marks the beginnings of the historical Poznań, was located on an island – Ostrów Tumski, which in the first half of the 10th century was situated at the confluence of the Warta and Cybina rivers. In its northern part two fortresses were created, with the princely residence in the western part and a zone of lower rank in the eastern part. South of them was a large zone of the supply base (Fig. 1). In the east, outside the stronghold rampart, not far from it, one of the more important settlements developed (Środka), and in the southwest, about 1 km from the stronghold, on the left bank of the Warta River, another large settlement was in operation – the settlement of St. Gotthard (Fig. 1). Most of the investigations on animal remains come from that period and from different parts of the stronghold and the two settlements mentioned above[6].

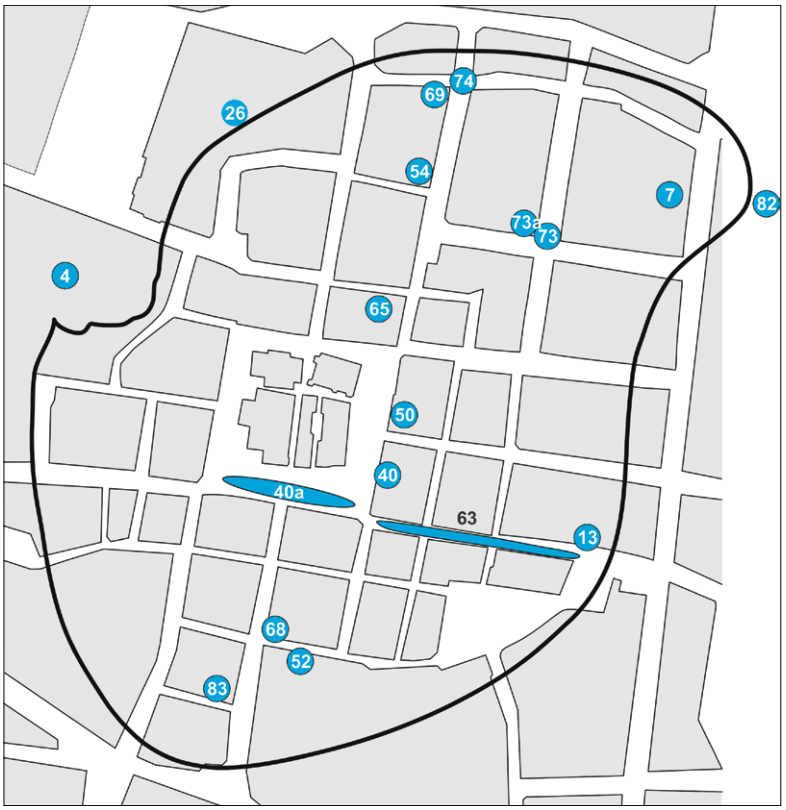
When the town was founded in 1253, the former princely residence in Ostrów Tumski became the bishop's property. The prince moved to the castle built in the north-western part of the town. Poznań played an important economic role as a town, and its particularly dynamic development, also in cultural terms, took place in the 15th century. In this period, craftsmanship dominated, dealing with the processing of hides and skins. These products found buyers throughout Europe. The town was located on the trade routes between Eastern and Western Europe. A social group of traders and groups of rich craftsmen developed. Archaeozoological material that can be connected with this stage of development comes from

5 Kara 2009.

6 Makowiecki 2016.



2 Poznań. Ostrów Tumski. Location of fauna collections included in this study



3 Poznań. Old Town. Location of the fauna collections included in this study: 4) Wzgórze Przemysława. 7) 75/77 Garbary street. 26) 3–5 Masztalarska street. 40) 48 Stary Rynek. 40a) Stary Rynek. 50) 42/43 Stary Rynek. 52) 2 Gołębia street. 54) 13/14 Żydowska street. 63) Wodna street. 65) 97/98 Stary Rynek. 68) 6 Gołębia street. 69) 23–24 Żydowska street /5 Stawna street. 73) Szewska/Dominikańska. 73a) Szewska/68 Dominikańska street. 74) Stawna street. 82) 22 Szyperska street. 83) 16 Wrocławska street

sites on the Old Market Square and in the surrounding districts, as well as from sites in Ostrów Tumski and Śródka. The latter place received the town charter in the 13th century, perhaps as early as 1231[7].

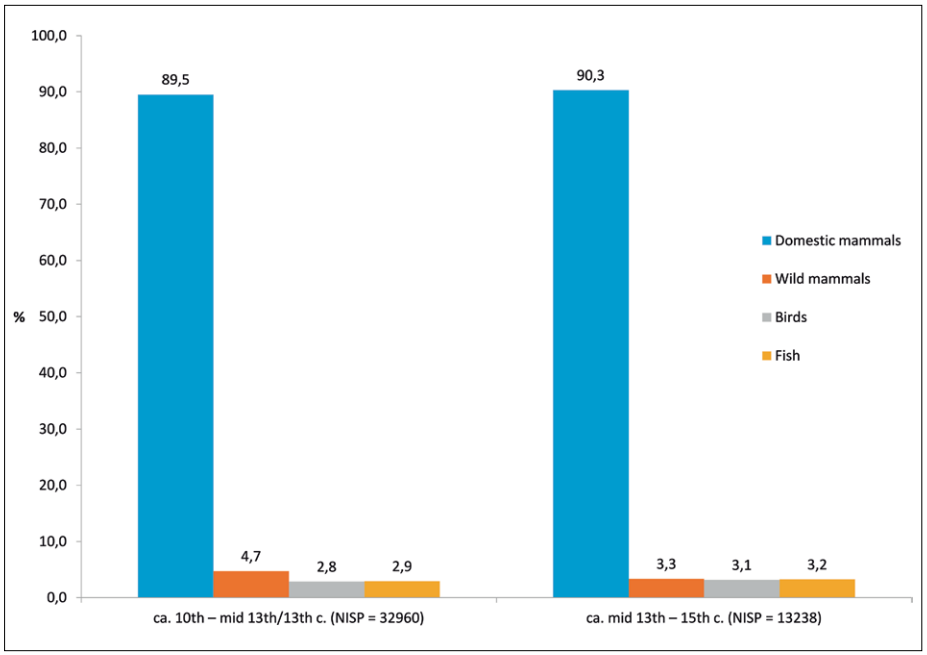
Animals in the Early and Late Middle Ages

Remains of domestic mammals are most abundant in both periods (Fig. 4). So it is clear that these vertebrates were most important from an economic point of view. In contrast to the wild mammals, they could not exist independently in the natural environment. For this reason, they became the most immediate raw material supplier for humans, which was available within the zones they used daily. In this situation, one of the most important obligations was to provide the animals with food, which was essential to maintain certain domestic animal herds at least at the basic level through so-called linear reproduction. Only animal breeding, which made it possible to achieve a surplus, not only guaranteed the stabilization of the level of the produced food and the supply of technological raw materials but was above all a source of economic and demographic development – first of all of the early medieval stronghold and the adjacent settlements and, in the Late Middle Ages, of the town as well. From the percentage share of the individual vertebrate groups in the find materials of the Early and Late Middle Ages it can be seen that both stages of development of Poznań were similar to each other (Fig. 4). However, in the case of individual domestic animal species, i. e. cattle, pig, sheep/goat and horse, both periods were different (Fig. 5). This resulted from processes that took place in the structures of the economic, social and settler-specific supply base. While the stronghold complex was the central place in the region, but with a strong rural character and people engaged in agriculture, the spatial and socio-professional structure in the town, formed by craftsmen and tradesmen, changed.

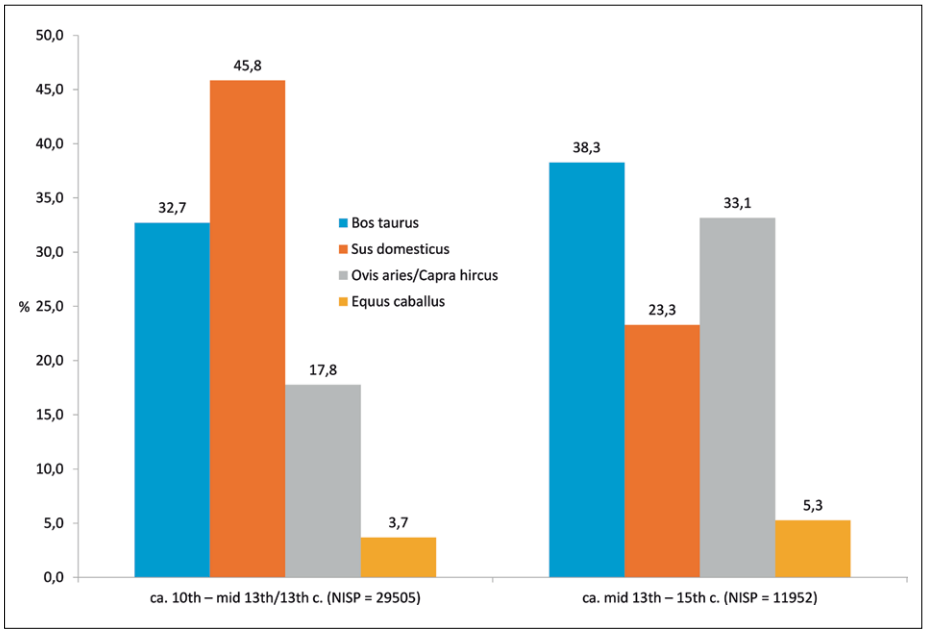
In the Early Middle Ages, the pig was the most common species in the livestock, followed by the cattle (Fig. 5). It can also be assumed that small ruminants were bred and utilized to a lesser extent than pigs. The least numerous farm animal species was the horse. With the founding of the town came a visible change in animal subsistence. From this time on, cattle breeding gained in importance (Fig. 5). A new trend was also the increased use of small ruminants. In this period the number of pigs decreased significantly. Among the small ruminants, the sheep was more numerous than the goat (Fig. 6). In the case of the horse, the number among the domestic mammals was small from the beginning. This is due to the fact that it was not primarily bred for the production of meat and raw materials, but mainly for use during its lifetime. Already in the Early Middle Ages, the horse was a domain of the elites, who used it mainly for military purposes. The report by Ibrahim ibn Jacob (al Bekri's and al Kazwini's version), according to which Mieszko equipped his troops not only with weapons but also with horse, saddle and bridle[8], bears witness to this. It is also known that Mieszko I received »two cavalry formations« from his father-in-law, Bolesław II, during the battles with margrave Wichman[9]. The utilitarian value of horse, the way it was appreciated, is evidenced by an account informing about the fact that in 1240 Świętopełk gave an entire village for two palfreys[10].

The two pets dog and cat – both not intended for consumption – were present in the landscape of the early medieval stronghold and the founded town. The data obtained make it possible to formulate a thesis about the small population of the cat compared to the dog in the Early Middle Ages (Fig. 7). Similar conclusions can be drawn from archaeozoological investigations on other centers of the early medieval Greater Poland[11]. In the younger periods, along with the functioning of the town, the cat became a more common animal, which is also reflected in the occurrence of skeletal finds. Its value was initially most likely utilitarian due to the spread of rats and the need to protect food supplies in the pantries of urban tenement houses. Only this fact could lead to the fact that people liked cats. It should not be forgotten that the treatment of this mammal in medieval Christian Europe was not clearly positive. Despite the fact that the cat was one of the more important companions of the early medieval clergy, at a certain point it was treated as the devil, as the companion of witches and darkness, and represented lust and laziness[12]. At that time it had no chance of a consistently positive treatment.

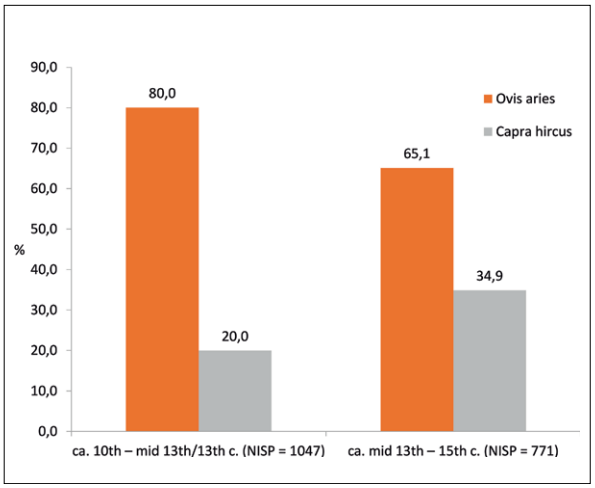
7 Pawlak – Pawlak 2015, 93.
8 Labuda 1999, 148.
9 Labuda 1999, 155.
10 Łęga 1949, 92.
11 Makowiecki 2001; Makowiecka – Makowiecki 2015; Makowiecka – Makowiecki 2018.
12 Krawiecka 1997.



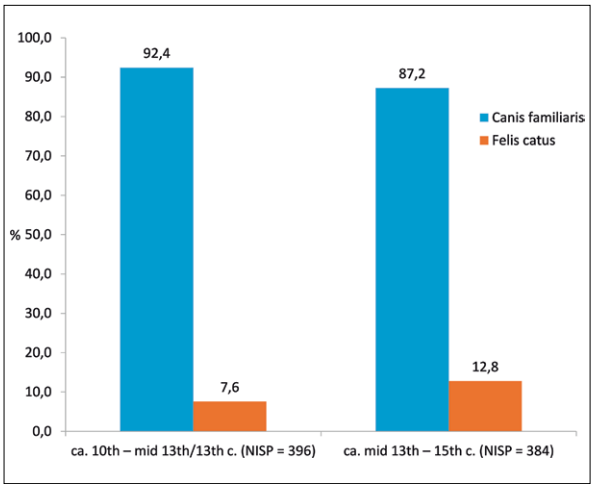
4 Poznań. Frequencies of animal groups in the assemblages of the Early Medieval and Late Medieval Period (based on number of identified specimens, NISP)



5 Poznań. Frequencies of domestic mammal species in the assemblages of the Early Medieval and Late Medieval Period (based on number of identified specimens, NISP)



6 Poznań. Percentages of sheep and goat in the assemblages of the Early Medieval and Late Medieval Period (based on number of identified specimens, NISP)



7 Poznań. Percentages of dog and cat in the assemblages of the Early Medieval and Late Medieval Period (based on number of identified specimens, NISP)

Domestic mammals and game in socio-topography

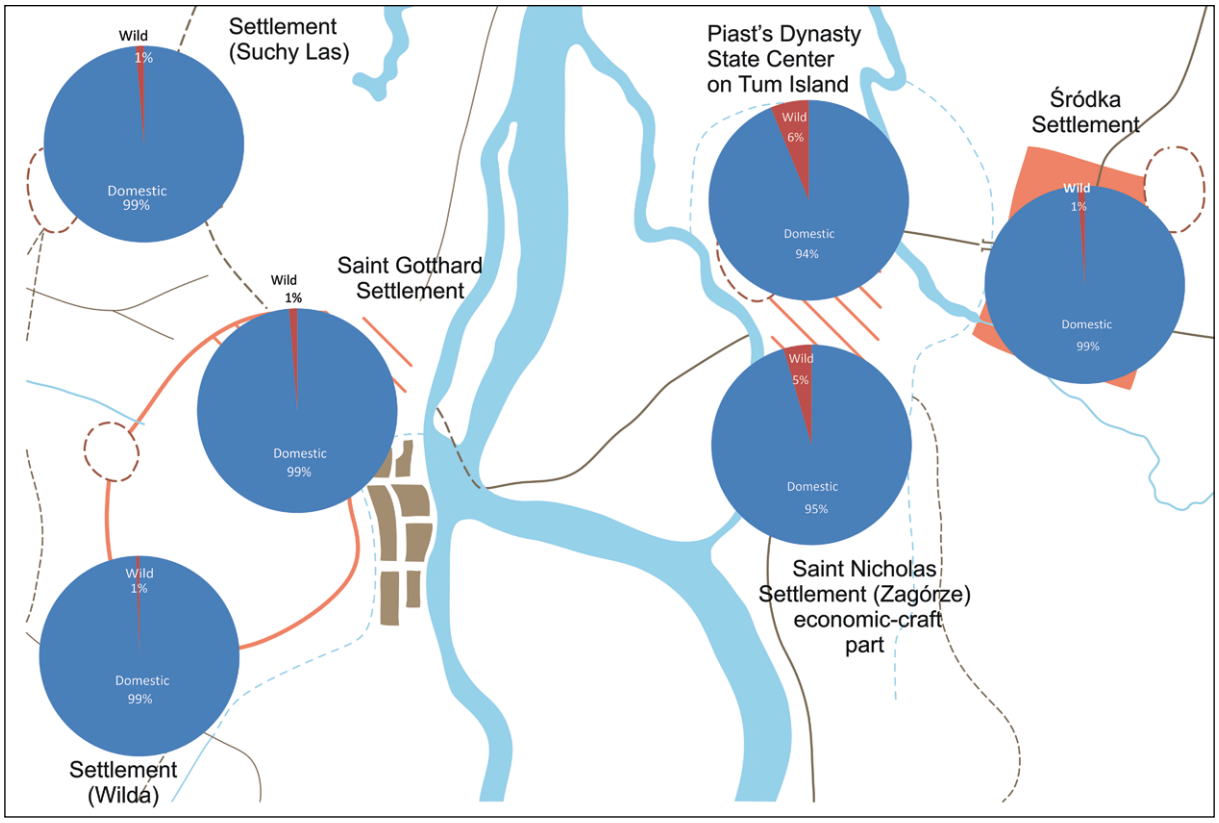
In the Early Middle Ages, the significance of wild mammals and surely hunting as a privilege of elites was relatively higher among the population of the stronghold, in particular from the northern segment, than in other parts of Poznań at that time. This conclusion is based on the percentages of domestic and wild mammals considered under spatial aspects (Fig. 8). Only in the stronghold center the percentage of wild mammals was 5–6 %, in the other zones it did not exceeded 1 %. Such a relationship can be seen as an effect of social stratification. It was interpreted as a higher consumption of game by the Piasts, their court and church officials.

In the Late Middle Ages, the significance of wild mammals in Ostrów Tumski even increased as their remains constituted higher percentage than in the previous period (Fig. 9). Considering that Ostrów Tumski was taken over by the Church, it can be assumed that it was the needs of the bishop's kitchen that led to the provision of exquisite food on a larger scale, and a valued part of such food was game. It is worth noting that the prince castle was only second in terms of the share of game. In the places inhabited by townsmen, i. e. on the market square and adjacent streets, as well as in Śródka, the proportion of wild mammals was only 1 %.

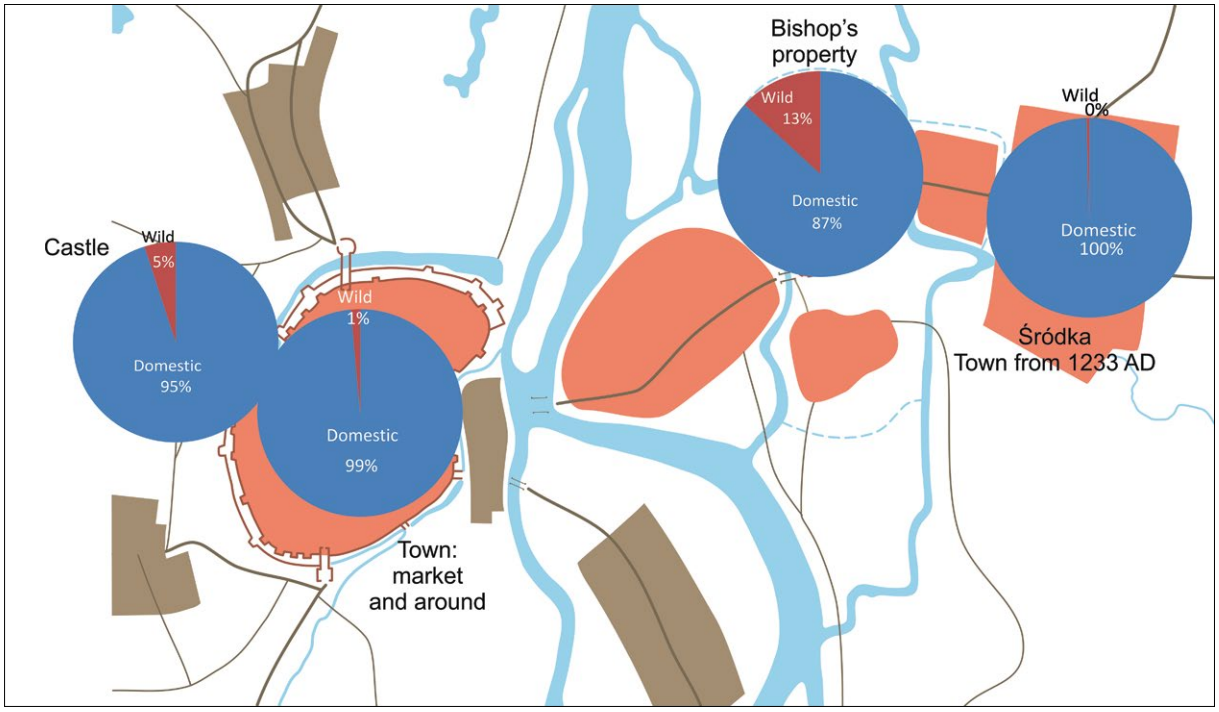
Differences between individual areas in the periods of development of Poznań considered here were also documented in the relative frequencies of important farm animals. For the Early Middle Ages, a clear predominance of pigs or a balance with cattle could be observed (Fig. 10). A particularly high percentage of pig remains was found in the north-western segment of the stronghold (residential part), 22 % higher than in the north-eastern part. Taking into account the social rank of these places, it is justified to hypothesise that pork was a favourite food of the elites, in this case the Piasts, their court and church officials.

The southern region of the stronghold shows different relations (Fig. 10). There a dominant position of cattle was documented, followed by pigs. A similar relation was found for the settlement east of the stronghold, in Śródka. Here the remains of cattle were only slightly more numerous than those of pigs. Another similar site was the settlement of St. Gotthard, where the proportions of pig and cattle were about the same. Another settlement was in Suchy Las, about 9 km from Ostrów Tumski, much further than the settlements in Śródka and St. Gotthard. Here the proportion of pigs was much higher and even exceeded that in the eastern part of the stronghold in Ostrów Tumski.

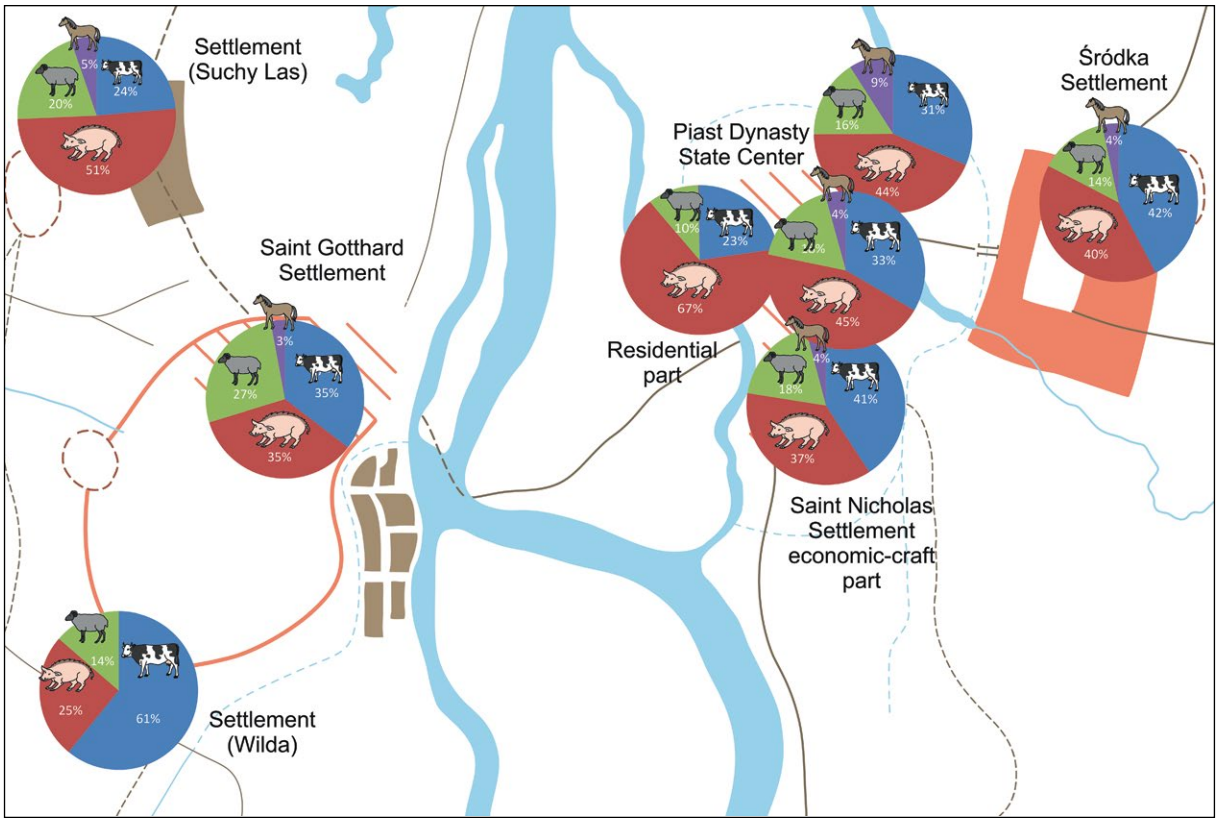
In the Late Middle Ages, pigs were only of comparatively great importance within Ostrów Tumski, which was already church property at the time (Fig. 11). Conclusions about a completely different situation can be drawn in the case of the settlement population of Śródka. Here cattle clearly dominated pigs. Even in the late medieval Poznań, within the Old Market Square, cattle were more important than pigs. At the same time, small ruminants played an important role as meat suppliers in the districts around the market. The pig was only of minor importance here. A different structure can be sketched for the vil-



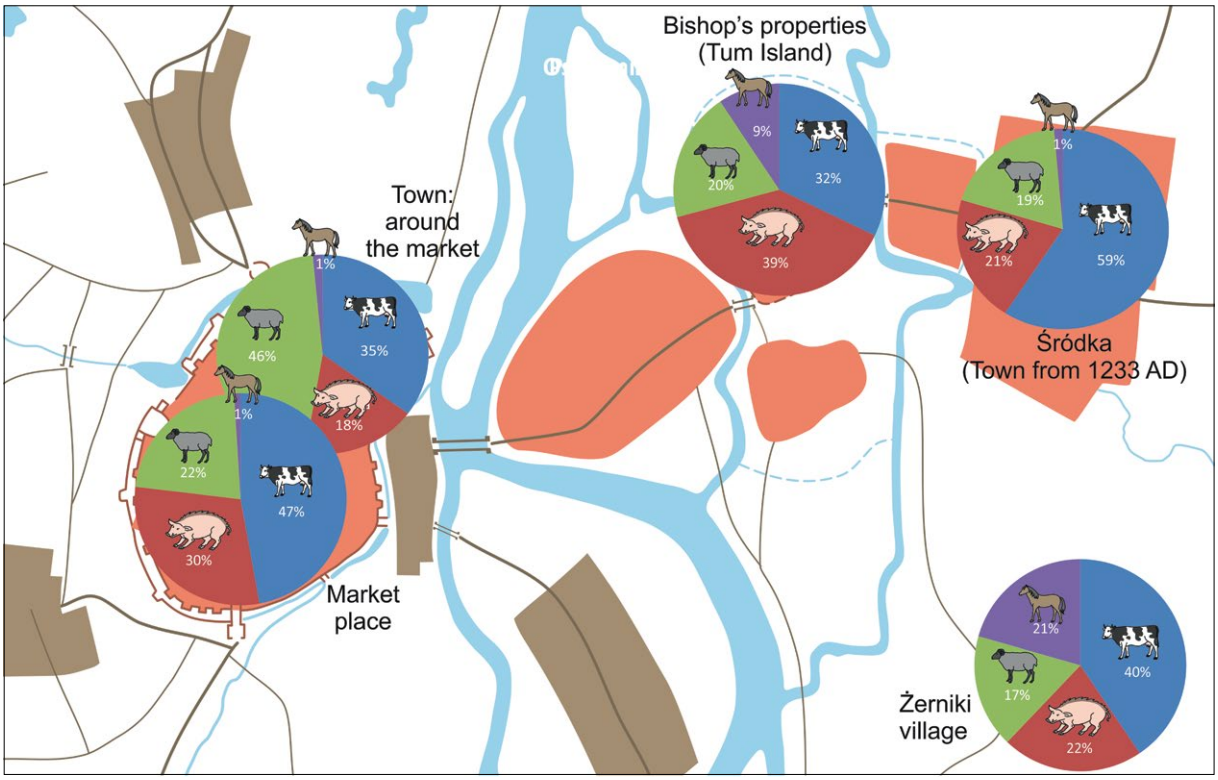
8 Poznań. Early Middle Ages (900–1250). Percentages of domestic and wild mammals in the assemblages from particular areas of the stronghold complex and nearby settlements (based on number of identified specimens)



9 Poznań. Late Middle Ages (1250–1500). Percentages of domestic and wild mammals in the assemblages from particular areas of the bishop domain complex and the town (based on number of identified specimens)



10 Poznań. Early Middle Ages (900–1250). Percentages of domestic mammal species in the assemblages from particular areas of the stronghold complex and nearby settlements (based on number of identified specimens)



11 Poznań. Late Middle Ages (1250–1500). Percentages of domestic mammal species in the assemblages from particular areas of the bishop domain complex and the town (based on number of identified specimens)

lage in the area of Żerniki. There cattle reached the highest percentage, but a high percentage of horses was also found. Based on this, it can be assumed that the horse had a special place in Żerniki. The pig and the small ruminants are represented in the bone finds with similar low percentages.

Among the wild mammals of the Early Middle Ages, red deer, wild boar, roe deer and hare are the most frequently found. It is shown that in each of the parts of the early medieval fortification complex in Ostrów Tumski there was a difference in the percentage of the mentioned species (Fig. 12). Red deer was definitely the most common species in all parts of the complex. In the southern part the percentage reached up to 50 %. Red deer also dominated in the western part, but here differences between other species were observed, with a very high percentage of hares (16 %). A different structure was documented in the eastern part, where the percentage of red deer was close to that of the western part. The other species differed much more in percentage than in the western part, with a very low percentage of hares (only 3 %). The situation was similar in the southern part of the fortification complex. Summarising the findings, it can be said that each of the zones of the stronghold complex was different. The St. Gotthard settlement was diametrically different from the three parts of the fortification complex mentioned above. Here the hare was the dominant wild animal species, followed by roe deer and red deer. The smallest part of the remains here belonged to the wild boar.

Even in the Late Middle Ages, the composition of wild mammals was different in each of the zones (Fig. 13). The consistently lower proportion of red deer in all find materials is striking. In contrast to the Early Middle Ages, it did not have a dominant position in any of the find complexes. This was taken over by roe deer, both in the eastern part of the church complex and on the Old Market Square. Only in the western part of the Ostrów Tumski roe deer gave way to red deer and wild boar, which outnumbered this species by about 10 %. In that zone a significant number of hares were also observed. Here, as in the Early Middle Ages, the differences between the analysed wild mammal species were the smallest. The western part of the church complex differed from the eastern one by a doubled proportion of wild boar and hare. Other relations were found on the Old Market Square in the town. Here roe deer and hare clearly dominated, followed at a considerable distance by wild boar and red deer.

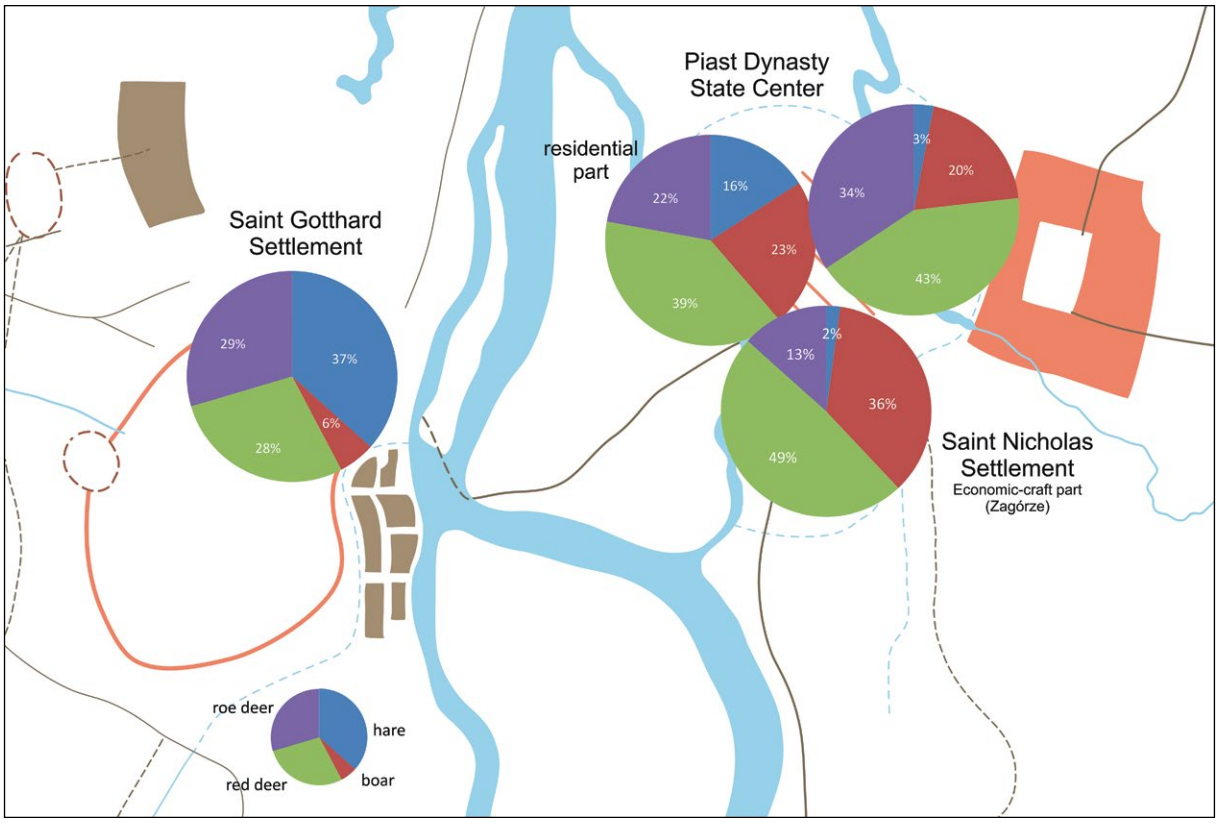
From the data presented here it can be concluded that the abundance of different wildlife species and their consumption by different social groups has changed over time and reflects changes in the socio-political structure of the urban area.

Discussion

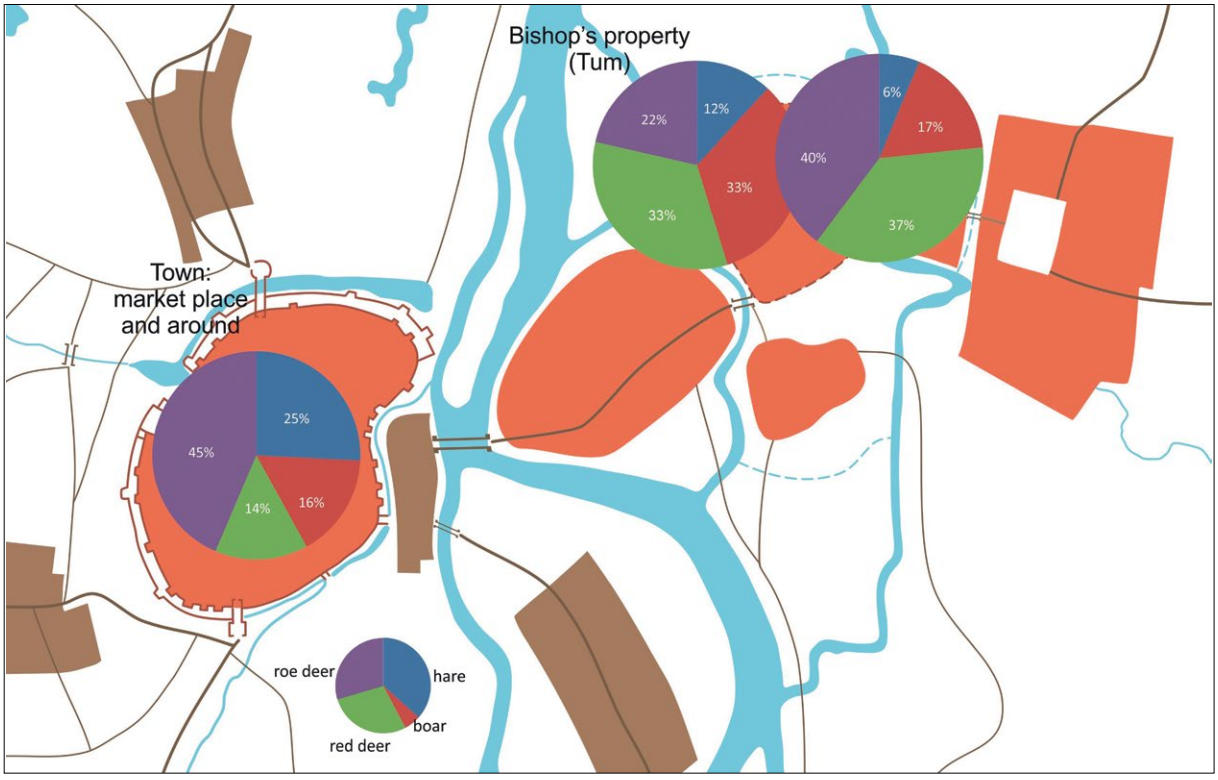
The reported results indicate a wide diversity in the extraction of different raw materials of animal origin. Among the identified domestic animal species, some were used as secondary products and meat, some only for meat and some only as living animals. The first group included cattle, small ruminants and to some extent horses. The potential raw material for all ruminants could have been milk, and in the case of sheep, wool. Cattle could have been used for labour, but also for the production of manure to fertilise arable land. Horses were probably used for transport, field work and riding. The food raw materials produced when the animals were slaughtered were meat, fat, bone marrow and brain. In addition, raw materials such as skin, bones and tallow were obtained.

Domestic mammals which only brought economic profits after their slaughter included pig. Dogs and cats were species kept for company and entertainment. Dog might have also performed functions of guarding and helped in pasturing domestic herds or in hunting. Cats, particularly in the town, where rats as well as mice occurred, were useful in protecting households against these rodents.

In all periods of the Middle Ages, most food products (meat, fat) and animal raw materials were obtained from the keeping of domestic animals. The use of natural resources, i. e. wild mammals, birds and fish, also played a certain role. Species from these groups were available to the entire population of the settlements and the early medieval fortification complex. Each of them also had a special economic importance. Wild mammals, especially those of large body size, individually provided more meat than a bird or fish. However, it should be taken into account that the presence of the latter in the hand-collected material was less than that of mammals. The predominance of mammals over birds and fish does not necessarily



12 Poznań. Early Middle Ages (900–1250). Percentages of selected game species in particular areas of the stronghold complex and nearby settlements (based on number of identified specimens)



13 Poznań. Late Middle Ages (1250–1500). Percentages of selected game species in particular areas of the bishop domain complex and the town (based on number of identified specimens)

mean that these two groups of vertebrates were less important. Under the conditions of the primary biocenosis, the fish population or even the bird population was probably larger than it is today. In addition, their productivity could also be higher, due to higher reproductive indices, which significantly increase the biomass. It should also be remembered that the population density of large animals is lower than that of small animals. For this reason, the resources of birds and fish may have been a source of similar calorific values relative to those of species in the mammalian group. Therefore, assessing the economic importance of birds and fish in relation to mammals, even on the basis of the available empirical data, is a very difficult question and does not seem conclusive. In this situation, a cautious assessment of the diversified exploitation of the resources of the wild fauna according to the rhythm of the seasons, which cause favourable phenomena for their exploitation, is probably justified. A good example of this is the accumulation of fish in coastal areas for spawning or the abundance of birds during the annual spring-summer season.

The above mentioned difficulties lead us to focus on the spatial and diachronic (temporal) trends obtained thanks to the quantification of mammalian bones carried out. From this it can be seen that in the Early Middle Ages, game as part of the diet was consumed to a greater extent by the inhabitants of the stronghold than by those of the settlements. It was caused by social rank. The northern part (of the eastern and western segments of the stronghold) was inhabited by the elites, the Piasts themselves, and by court and church officials. In the settlements around the stronghold the share of game was insignificant. This was probably due to a lower social status of its inhabitants.

If one analyses the group of wild mammal species found in all the residential areas, both those from the group of animalia superiora (red deer, wild boar, roe deer) and those from the group of animalia minuta (hare), one can argue that legal norms in this period, such as the insignia known from written sources of the 13th and 14th centuries, either did not become effective or their influence was minimal. It can be assumed that the majority of the inhabitants were allowed to hunt all species, or the restrictions concerned only the number of specimens hunted. This conclusion coincides with the comments on the law in Piast Poland, according to which it initially (10th–12th century) concerned only separate forests and only in the following centuries did it increasingly become a privilege used by the ruling classes to make political and economic profits[13]. Such an arrangement of hunting rights could result from environmental and social policy factors. The entire fauna and the number of the most valuable game species – red deer, wild boar, roe deer – were sufficient to share them among all social groups. In the Late Middle Ages, game was consumed in even greater numbers by the ecclesiastical elites of Ostrów Tumski. Game was also more important among the castle's inhabitants than among the town's inhabitants. The latter rarely had deer meat on their tables, but deer and hare meat was quite popular.

Considering the significance of particular domestic mammals, the so called economic (consumption) animals, one can notice a quite clear picture of their hierarchy in particular historical periods. The reported tendency in bone remains suggests conclusions about a fundamental change which occurred in this region of Poland at least from the 9th century. It was characterized by a definite increase in the consumption of pork, accompanied by a corresponding decrease in the consumption of beef. Such ratios in animal husbandry and meat consumption were common in most stronghold centers in *Civitas Schinesghe*, the cradle of Poland. This is supported by studies conducted in Gniezno[14], Giecz[15], Ostrów Lednicki[16], Bnin[17], Bonikowo[18], Nakło[19], Ujście[20] and Międzyrzecz[21]. An exception was the population of the Bruszczewo settlement complex where more cattle were kept, however, together with numerous pig[22].

Poznań shows a similar tendency with a strong consumption of pork until the foundation of the town. It can be assumed that this was a widespread phenomenon, as the remains of pigs dominated not only in the materials from both parts of the stronghold located in Ostrów Tumski, but also from settlements in Suchy Las and Żerniki, which are located far from the main Piast centre. Pigs also had an important position in the St. Gotthard settlement.

With the foundation of the town in 1253, a new period in the keeping of domestic mammals began. Based on the increase in the number of cattle bones, it is reasonable to draw conclusions about the important role of cattle in the supply of meat as well as raw

13 Samsonowicz 1994.
14 Makowiecka – Makowiecki 2018.
15 Sobociński 1985.
16 Makowiecki 2001.
17 Sobociński 1976.
18 Sobociński 1963.
19 Sobociński – Godynicki 1975.
20 Sobociński 1975.
21 Makowiecka – Makowiecki 2015.
22 Brzostowicz 2002, 182 fig. 76.

materials – technologically indispensable for the development of tanning and the manufacturing of bone items. The latter was nothing more than a continuation of the early medieval antler industry, but this time based on bone, mostly from cattle, and to a small extent red deer antlers.

The increase in the number of small ruminants, sheep and goats, in the Late Middle Ages documented in the bone materials can be seen as an increase in the importance of this group among domestic mammals in the production of meat and probably also milk. Also important was the possibility of obtaining hides from both species and wool from sheep. The deforestation of the urban environment, which was already progressing at that time and which is also mentioned by other authors[23], was favourable for the creation of spaces in which grazing of sheep or even goats could be carried out. The grassland was not only in the areas belonging to the surrounding villages, but also in the areas immediately adjacent to the town[24]. Such features of the natural environment were undoubtedly favourable to cattle breeding and, to a lesser extent, to pig breeding. The latter, as is well known, appreciated the availability of acorns and beech trees, which were becoming increasingly scarce due to the shrinking forest areas, including oak and beech.

The increase in the breeding of small ruminants was most likely related to the potential for their secondary exploitation as living animals and the use of raw materials from slaughter. In contrast, pigs were kept for one purpose only, namely the production of meat and fat. Apart from meat and fat, ruminants were potential suppliers of manure, wool, traction and milk, and after slaughter, of skin, bones and horns. The latter represented a fairly common raw material that is still used today[25]. In this respect, cattle and small ruminants were more economically profitable compared to the one-sided use of pigs. It should be added that already the privilege of Przemysł II from 1280 attests to the presence of, among others, shoemakers and furriers in the town. The existence of a guild of weavers is confirmed for 1344, in 1403 the guilds of tanners and shoemakers are mentioned for the first time, and in 1417 the guilds of furriers[26]. In this situation, it is justified to bring such animals to the slaughterhouse of the town, which would not only cover the food needs, but would also provide raw materials for the mentioned crafts. This purpose also influenced the direction of the breeding of domestic animals. Their stocks were dominated by ruminants in the Late Middle Ages, and not by pigs as in the early medieval phase of the stronghold centre in Ostrów Tumski and the surrounding rural settlements.

It is fair to say that the changes in meat consumption in medieval Poznań were caused not so much by the culinary preferences of the citizens, but by the economic development of the town. As the town's population grew, so did the demand for leather goods, wool and bone and horn products. Specimens with traces of processing found near the Szewska and Dominikańska streets bear witness to the use of the latter two. Their accumulation suggests that they came from a horn and bone workshop functioning in this part of the town in the 15th century. Not only fragments of deer and elk antlers were found there, but also bones of cattle with characteristic traces indicating that they were raw material waste. There were also found horn cores from goats, with characteristic traces of separation from the skull of the animals, which was possible not only during the processing of the carcass by the butcher, but also during the extraction of horn. The raw material obtained was used to make drinking horns as well as combs and buttons[27].

Independently of the archaeozoological data presented here, written sources indicate a decreasing importance of pig breeding in the Late Middle Ages and, at the same time, of pork for the supply of the town's inhabitants. According to one of the lists of animals kept in the suburban farms, there were 40–50 pigs, about 50–80 cattle and about 450 sheep[28]. According to this, pigs were the smallest group of animals slaughtered and probably the smallest group of domestic animals reared in the region. The predominance of sheep over goats in all the finds and periods undoubtedly reflects an effect of greater economic importance of this ruminant. It is also consistent with historical data for Poland from the 14th to 15th centuries. The goat was kept only rarely and in small numbers, for example in Łeczyca and in Mazovia. It was mostly bred on rural farms[29]. For example, in the suburban farms of Poznań in the first half of the 17th century goats were kept in places where dairy cows were absent[30]. According to the archaeozoological data available for Poznań, the goat was bred in the early medieval stronghold centre and its meat was also delivered to the town. This means that it was part of the living inventory of the manorial farms. It should also be mentioned that in the early medieval materials from the

23 Bratkowski 1977, 22.
24 Gąsiorowski 1988a, 242.
25 Kłossowski 1964, 288 fig. 146.
26 Gąsiorowski 1988b, 271.
27 Wiesiołowski 1982, 270.
28 Drozdowski 1988, 473.
29 Chmielewski 1962, 133.
30 Majewski 1957, 213.

fortification complex 17 horn cores were found from adult females and only three from males. Such a sex ratio can be the result of selecting young males, which then leave the females for further breeding and milk production. This was most likely also the case in other centres, e. g. Santok, Gdańsk, Kołobrzeg[31], Ostrów Lednicki[32] and Kałdus[33], as here too, female predominance is the rule among adult animals.

While the importance of the above mentioned species as raw material suppliers for food production is undeniable, the importance of the horse in this respect is not so clear. So far, there is evidence of consumption of horse meat in the Early Middle Ages by the population of the strongholds in Great Poland based on the traces of sharp tools[34]. However, they are discovered relatively rarely. In the materials analysed here, traces of butchery were very often found on the bones of ruminants, pigs or even wild mammals, birds and fish. On horse bones, however, traces of sharp tools indicating butchery were rare. They were noticed, for example, on a sacrum found in the late medieval materials in Wodna Street. From this, it can be concluded that at least some horses were intended for human consumption.

It cannot be ruled out that with the development of the town the importance of the horse as a working animal, which was also exploited for consumption, diminished. So far, comparable analyses have been carried out for Gdańsk[35]. There it could be shown that the status of the horse, for meat production or as a working animal, was low in the early modern town compared to the early medieval town centre, which developed there from around the 10th/11th century until it was taken over by the Teutonic Order in 1308.

Summary

The results of archaeozoological studies on extensive bone find material from Poznań are discussed against the background of the historical stages of urban development. In this way, diachronic changes in food production and in the supply of raw materials to the town could be made visible. In addition, clear references to the social context of the residential areas as well as to political changes and the economic development of Poznań were revealed. Different urban infrastructures necessitated changes in strategies for the utilisation of animals. A decisive event was the founding of Poznań as a town and the associated development of a strong centre of trade and crafts. Some changes in the use of wildlife correlate with the anthropogenic pressure on the local environment, which manifested itself in the decline of forests during the Middle Ages.

Zusammenfassung

Die Ergebnisse archäozoologischer Untersuchungen an umfangreichen Fundmaterialien aus Poznań werden vor dem Hintergrund der historischen Etappen der Stadtentwicklung diskutiert. So konnten diachrone Veränderungen in der Nahrungsmittelproduktion und bei der Versorgung der Stadt mit Rohstoffen sichtbar gemacht werden. Daneben zeigten sich klare Bezüge zum sozialen Kontext der Wohngebiete sowie zu politischen Veränderungen und zur wirtschaftlichen Entwicklung der Stadt. Unterschiedliche städtische Infrastrukturen bedingten verschiedene Strategien der Verwertung von Tieren. Ein einschneidendes Ereignis war die Gründung von Poznań als Stadt und damit verbunden die Herausbildung eines starken Zentrums von Handel und Handwerk. Einige Veränderungen in der Nutzung von Wildtieren stehen in Korrelation mit dem anthropogenen Druck auf die lokale Umwelt, der sich u. a. im Rückgang von Wäldern im Laufe des Mittelalters manifestierte.

31 Schramm 1967.
32 Makowiecki 2001.
33 Makowiecki 2010.
34 Makowiecki 2001, 64 fig. I-7. I-8; Makowiecki 2010, 199.
35 Makowiecki – Makowiecka 2013.

References

Bratkowski 1977 T. Bratkowski, Fizjografia Poznania, in: W. Błaszczyk (ed.), Początki i rozwój starego miasta w Poznaniu do XV w. w świetle badań archeologicznych i urbanistyczno-architektonicznych, Materiały z ogólnopolskiego sympozjum 18–19 października 1973 (Warsaw 1977) 19–35

Brzostowicz 2002 M. Brzostowicz, Bruszczewski zespół osadniczy we wczesnym średniowieczu (Poznan 2020)

Chmielewski 1962 S. Chmielewski, Gospodarka rolna i hodowlana w Polsce w XIV i XV w. (Technika i rozmiary produkcji). Studia z dziejów gospodarstwa wiejskiego 5 (2) (Warsaw 1962)

Drozdowski 1988 M. Drozdowski, Życie gospodarcze miasta, in: J. Topolski (ed.), Dzieje Poznania I. Do roku 1793 (Warsaw 1988) 455–475

Fijał – Karwacka 1988 L. Fijał – G. Karwacka, Załącznik do pracy zbiorowej, in: J. Topolski (ed.), Dzieje Poznania I. Do roku 1793 (Warsaw 1988)

Gawlikowski – Stępień 2014 J. Gawlikowski – J. Stępień, Zwierzęta we wczesnośredniowiecznym Wolinie. Badania archeozoologiczne, in: B. Stanisławski – W. Filipowiak (eds.), Wolin wczesnośredniowieczny II, Origines Polonorum 7 (Warsaw 2014) 82–171

Gąsiorowski 1988a A. Gąsiorowski, Zarząd miasta późnośredniowiecznego, in: J. Topolski (ed.), Dzieje Poznania I. Do roku 1793 (Warsaw 1988) 233–244

Gąsiorowski 1988b A. Gąsiorowski, Rzemioslo i handel, in: J. Topolski (ed.), Dzieje Poznania I. Do roku 1793 (Warsaw 1988) 269–284

Gręzak 2007 A. Gręzak, Zwierzęta w gospodarce średniowiecznego Kołobrzegu II. Poł. XIII–XV w. (Warsaw 2007)

Kaczmarek 2008 J. Kaczmarek, Archeologia miasta Poznania I. Stan badań i materiały, Muzeum Archeologiczne w Poznaniu (Poznan 2008)

Kara 2009 M. Kara, Najstarsze państwo Piastów – rezultat przełomu czy kontynuacji? Studium archeologiczne (Warsaw 2009)

Kłossowski 1964 T. Kłossowski, Surowce podstawowe w przemyśle mięsnym (Warsaw 1964)

Kóčka-Krenz 2013 H. Kóčka-Krenz, Stan i potrzeby badań Ostrowa Tumskiego w Poznaniu, in: J. Kaczmarek – H. Kaczmarek (eds.), Archeologia o przeszłości Poznania i jego zaplecza. Stan i potrzeby badań, Muzeum Archeologiczne w Poznaniu (Poznan 2013) 134–141

Krawiecka 1997 E. Krawiecka, Kot – symbol ambiwalentny, in: A. Karłowska-Kamzowa – J. Kowalski (eds.), Flora i fauna w kulturze średniowiecza od XII do XV wieku, Materiały XVII Seminarium Mediewistycznego (Poznan 1997) 84–88

Kubasiewicz 1959 M. Kubasiewicz, Szczątki zwierząt wczesnośredniowiecznych z Wolina (Szczecin 1959)

Kubasiewicz 1977 M. Kubasiewicz, Badania archeozoologiczne na terenie Gdańska IX–XIV wieku. Gdańsk wczesnośredniowieczny, Prace Komisji Archeologicznej 9 (Gdansk 1977)

Kubasiewicz – Gawlikowski 1965 M. Kubasiewicz – J. Gawlikowski, Szczątki zwierzęce z wczesnośredniowiecznego grodu w Kołobrzegu, Szczecińskie Towarzystwo Naukowe, Wydział Nauk Przyrodniczo-Rolniczych 24 (2) (Szczecin 1965)

Labuda 1999 G. Labuda, Słowiańszczyzna starożytna i wczesnośredniowieczna. Antologia tekstów źródłowych (Poznan 1999)

Łęga 1949 W. Łęga, Obraz gospodarczy Pomorza Gdańskiego w XII i XIII wieku. Prace Instytutu Zachodniego 14 (Poznan 1949)

Majewski 1957 J. Majewski, Gospodarstwo folwarczne we wsiach miasta Poznania w latach 1582–1644 (Poznan 1957)

Makowiecka – Makowiecki 2015 M. Makowiecka – D. Makowiecki, Gospodarka zwierzętami w czasach rozwoju grodu i zamku w Międzyrzeczu na podstawie badań archeozoologicznych średniowiecznych szczątków ze stan. 1, in: S. Kurnatowski (ed.), Międzyrzecz, Gród i zamek w wiekach IX–XIV. Wyniki prac wykopaliskowych z lat 1954–1961, Origines Polonorum 8 (Warsaw 2015) 393–409

Makowiecka – Makowiecki 2018 M. Makowiecka – D. Makowiecki, Fauna gnieźnieńskiego zespołu grodowego we wczesnym średniowieczu i jej znaczenie w ówczesnej gospodarce, in: T. Sawicki – M. Bis (eds.), Gniezno. Wczesnośredniowieczny zespół grodowy, Orygines Polonarum 11 (Warsaw 2018) 362–406

Makowiecki 2001 D. Makowiecki, Hodowla oraz użytkowanie zwierząt na Ostrowie Lednickim w średniowieczu. Studium archeozoologiczne, Biblioteka Studiów Lednickich 6 (Poznan 2001)

Makowiecki 2010 D. Makowiecki, Wczesnośredniowieczna gospodarka zwierzętami i socjotopografia in Culmine na Pomorzu Nadwiślańskim. Studium archeozoologiczne, Mons Sancti Laurentii 6 (Toruń 2010)

Makowiecki 2016 D. Makowiecki, Zwierzęta średniowiecznego i nowożytnego Poznania i jego okolic. Podstawy archeozoologiczne, Ekologia historyczna Poznania 3 (Poznan 2016)

Makowiecki – Makowiecka 2013 D. Makowiecki – M. Makowiecka, The Character of Animal Exploitation and the Environment at the Polish/Prussian Frontier in the Medieval Period: a Case Study, Archaeologia Baltica 20, 2013, 91–116

Pawlak – Pawlak 2015 E. Pawlak – P. Pawlak, Serce miasta jest po prawej stronie. Archeologia o przeszłości poznańskiej Śródki i Ostrówka (Poznan 2015)

Samsonowicz 1994 A. Samsonowicz, Uwagi o regale w Polsce Piastowskiej (na przykładzie regale łowieckiego i rybackiego), Kwartalnik Historyczny 51 (4), 1994, 3–11

Schramm 1967 Z. Schramm, Szczątki kostne wczesnośredniowiecznej owcy i kozy z wykopalisk północno-zachodniej Polski, Roczniki Wyższej Szkoły Rolniczej w Poznaniu 36, 1967, 13–174

Sobociński 1963 M. Sobociński, Materiał kostny zwierzęcy z wykopalisk wczesnośredniowiecznego grodziska w Bininie, Prace Komisji Archeologicznej 6 (2) (Poznan 1963)

Sobociński 1975 M. Sobociński, Szczątki kostne zwierząt wczesnośredniowiecznych z wykopalisk w Ujściu, Roczniki Akademii Rolniczej w Poznaniu 76, Archeozoologia 1, 1975, 35–78

Sobociński 1976 M. Sobociński, Materiał kostny zwierzęcy z wczesnośredniowiecznego grodziska stożkowatego w Bninie koło Śremu, in: J. Żak (ed.), Materiały do studiów nad osadnictwem bnińskim. Grodzisko stożkowate, Prace Komisji Archeologicznej 9 (Warsaw 1976) 121–150

Sobociński 1985 M. Sobociński, Szczątki kostne ssaków domowych z wykopalisk w Gieczu, Roczniki Akademii Rolniczej w Poznaniu 164, Archeozoologia 10, 1985, 59–86

Sobociński – Godynicki 1975 M. Sobociński – S. Godynicki, Szczątki zwierzęce wydobyte na terenie wczesnośredniowiecznego grodziska w Nakle nad Notecią, Roczniki Akademii Rolniczej w Poznaniu 76, Archeozoologia 1, 1975, 107–127

Wiesiołowski 1982 J. Wiesiołowski, Socjotopografia późnośredniowiecznego Poznania (Warsaw 1982)

Wyrost 1988 P. Wyrost, Archeozoologia w Polsce, jej początki, rozwój i osiągnięcia, Przegląd Zoologiczny 32, 1988, 367–380

Sources of Illustrations

Fig. 1 Adapted after the plan of Poznan from around 1772 by Fijał – Karwacka 1988, Attachment 1–2

Fig. 2 Adapted after Kóčka-Krenz 2013, fig. 2

Fig. 3 Adapted after Kaczmarek 2008, fig. 6

Fig. 4–7 Daniel Makowiecki

Fig. 8–13 Adapted after the plan of Poznan from around 1772 by Fijał – Karwacka 1988, Attachment 1–2. Pie charts: Daniel Makowiecki

Address

Prof. Dr. Daniel Makowiecki
Uniwersytet Mikołaja Kopernika
Instytut Archeologii
Wydział Nauk Historycznych
ul. Szosa Bydgosaka 44/48
87–100 Toruń
daniel.makowiecki@umk.pl