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THE DEVELOPMENT OF THE TOWN OF OPAVA IN THE 14TH CENTURY BASED ON OSTEOLOGICAL AND ARCHAEOBOTANICAL FINDINGS FROM THE RESEARCH FROM MÜLLERS HOUSE. CONTRIBUTION TO THE TOPIC OF MEAT AND VEGETABLE DIET IN THE LATE MIDDLE AGES AND EARLY MODERN PERIOD IN OPAVA¹

DOI 10.69108/cszm-b.2024.1-2.03

Abstract

The research of the Silesian Museum, which took place between 2015 and 2019 under the leadership of Mgr. Soňa Králová in connection with the reconstruction of the so-called Müller's House, was one of the most extensive archaeological events in Opava. It was conducted at a high level, including taking samples of crops and osteological material, mainly of an animal nature. The so-called Müller's House is located on plots no. 558, 559/1 and 559/2 in the grounds of the former Opava Castle, where the original castle kitchen was also located. It was located on its western forecourt between the castle and curtain walls, in the area of the bailey facing the town. It was the background of a separate two-part castle kitchen with two chimneys, where, based on the osteological and archaeobotanical analyses, almost all operations connected with this craft were carried out – from cutting and processing meat, to baking bread, or cooking porridges, flatbreads, herbal decoctions to beer production.

Keywords: Middle Ages, Early Modern Ages, castle, medieval castle kitchen, archaeobotany, osteological analyses

1. Introduction

Between 2015 and 2019, extensive rescue archaeological research was carried out in the area of Müller's House in Opava, at Komenského Street no. 8, connected with the reconstruction of the building and the adjacent garden. The building is located on plots no. 558, 559/1 and 559/2 in the places of the original site of the Opava Castle. The on-site² research has shown the beginnings of a very old medieval settlement dating back to the end of the 12th century.³ However, the Opava Castle itself was built in the area *in front of the Ratibořská Gate* at the northeastern edge of the town fortifications only around the year 1400,⁴ during the reign of

1 The presented work was created with the financial support of the Ministry of Culture within the framework of institutional financing for the long-term conceptual development of the research organization of Silesian Museum (SZM) (DKRVO, MK000100595), internal grant project of SZM no. IGS201804/2018. This work was financially supported by the Ministry of Culture of the Czech Republic by institutional financing of long-term conceptual development of the research institution (the Silesian Museum, MK000100595), internal grant of the Silesian Museum IGS201804/2018.

2 The archaeological research was carried out by the then-archaeological department (today the independent Department of Archeology) of the Silesian Museum under the direction of the curator Mgr. Soňa Králová. See Soňa KRÁLOVÁ, *Archeologické nálezy z areálu opavského hradu*, Časopis Slezského zemského muzea, série B – vědy historické (ČSZM-B) 70/2–3, 2021, pp. 120–145. Here, information about the history of the research, the form of the castle complex and the progress of the research, including findings, dating and relevant sources, literature and resources.

3 The interval confirmed by research spanned the period from the end of the 12th century to the end of the 19th century.

4 It is assumed that the construction of the castle began between 1383 and 1386 when Přemek I of Opavský ascended the ducal throne in 1381, which could only happen after the death of his brother Václav. See Marek STARÝ, *Opavští Přemyslovci. Genealogie posledních generací českého královského rodu*, Opava 2021, p. 59.



Fig. 1: The foundations of two brick pillars of the hood chimneys and a sink.
Photo SZM.

Prince Přemek I of Opava,⁵ in an area that had already been intensively populated before. For its creation, it was necessary to fill in part of the moat of the town fortifications, into which it was structurally integrated. In the place of its western forecourt, or in the area of the *bailey, on the side facing the town*, the location of the original castle kitchen,⁶ or two brick kitchens,⁷ i.e. a two-piece kitchen,⁸ is traditionally located. The high proportion of osteological remains (see below), archaeological real estate situations⁹ [fig. 1] and characteristic objects¹⁰ obtained during the research clearly confirmed this hypothesis.¹¹

The following lines provide information obtained from environmental samples taken during the research and based on the analyses carried out and associated with the issue of the medieval castle kitchen.

2. Analyses performed using natural sciences

In addition to the preservation and acquisition of the artefact component, including the documentation of the situations being investigated, part of modern archaeological research also comprises taking samples for natural science analyses. There can be a whole range of these analyses¹² and their use and the information obtained from them serve as a basis for various types of archaeological reconstructions. Their appropriate selection during the research is also crucial because of the unrepeatability of each archaeological situation investigated in this way, which is limited precisely by its uniqueness and, at the same time, the impossibility of potential retrospective application of other methods.¹³ Considering the topic of the castle kitchen, archaeobotanical (vegetable food) and osteological (meat food) analyses have been chosen quite logically.

5 Pavel KOUŘIL – Dalibor PRIX – Martin WIHODA, *Hrady českého Slezska*, Brno 2000, p. 284.

6 Ibid., p. 290–291.

7 S. KRÁLOVÁ, *Archeologické nálezy*, p. 125.

8 According to the land registry from 1586, it was part of an advanced economic suburb separated from the town by a moat and a rampart with a palisade confirmed by research. See Jiří Juchelka, *Výzkum v prostoru ulic Komenského, Praskova a Sněmovní. Příspěvek k problematice Opavského hradu*, in: *Badania archeologiczne na Górnym Śląsku i ziemiach pogranicznych w latach 2005–2006*, Katowice 2007, pp. 181–191; In addition to the smithy, stables, etc., there was also a stone kitchen located in the space between the main and curtain walls of the town fortifications near the castle.

9 As part of the archaeological research, in the basement of the building, it was possible to discover a part of the access ramp to the kitchen, flue gathering of the discharge belt of the hood chimney, the foundations of two brick pillars of the hood chimneys and a sink.

10 E.g., a significant proportion of fragments of iron kitchen knives, typical kitchen ceramics with traces of use during cooking, etc. See S. KRÁLOVÁ, *Archeologické nálezy*, pp. 137, 141. This material was deposited in the place of the original curtain wall.

11 This is also evidenced by the existence of the wall of the original castle kitchen uncovered during the research performed from 2016 to 2019. See S. KRÁLOVÁ, *Archeologické nálezy*, fig. 2:7 and 3:1.

12 Anthropology, molecular genetic methods, geochemical analyzes of soils (soil phosphate analysis) etc.

13 Simply put, if the situation is archaeologically investigated (i.e. a destructive method is performed on it), it is no longer possible to retroactively carry out analyzes that were not applied on the spot during the preparation of individual citations, as they have already been irretrievably removed.

2. 1. Archaeobotanical analysis¹⁴

Archaeobotany has a long-standing tradition in Opava associated with RNDr. Emanuel Opravil, CSc. (1933–2005), the founder of one of the first workplaces of this type in our country. He was followed up by RNDr. Věra Čulíková, CSc. (1951 until now), who, at the Opava workplace, under the patronage of the Archaeological Institute in Prague, continued to study not only plant macroresidues from archaeological sites but also to apply the results of pollen analyses.¹⁵ Both conducted hundreds of analyses from prehistoric and medieval research. In the case of medieval Opava situations, these were primarily focused on the contents of waste pits. As part of our research, however, we followed a different path and with regard to the presence of a medieval kitchen, individual layers of compact stratigraphic units were also sampled. In the course of archaeological research, situations were identified on the site¹⁶ that were systematically sampled for the purposes of archaeobotanical analyses.¹⁷ Hence, it was a targeted sampling, obtained from clearly stratigraphically¹⁸ separated units and the subsequent rinsing of the sediment using a flotation tank in combination with the method of washing the undersized particles.¹⁹ The final result was the acquisition of 10 samples of archaeobotanical material, from which 2,569 plant macroresidues were found by the extraction technique. Of these, 1,472 belonged to cultivated (cereals, legumes, technical crops) and 1,090 to wild plant species. As for the cultivated species, cereals, among which rye predominates, prevail but there are also oats, wheat, barley and millet, which are crops typical of the High Middle Ages. Less typical are cereals such as einkorn wheat or spelt, which are more typical for prehistoric communities. Legumes are represented by 21 finds, containing cultivated peas and lentils.²⁰ Of the free-growing species, there were lamb's quarters, danewort or red raspberry.

2. 2. Osteological analysis²¹

Sets from the period 2016–2019 were selected for the analyses of animal remains and animal skeletal findings. Part of the results published earlier²² were newly supplemented with other elaborated medieval (contexts 254, 274, 275, 276, 279, 289) and early modern situations (contexts 108, 114, 162, 163, 286, 287, 317, 322, 323), which were related to the environment of the castle complex and its background. With few exceptions, the set represented waste material associated with the functioning and operation of the castle kitchen. In the High Middle Ages, with an overlap into the early modern period, bones of domesticated animal

14 The archaeobotanical analysis was carried out by Mgr. Michaela Látková, Ph.D. from the Institute of Archeology of the Academy of Sciences of the Czech Republic, Brno, a public research institution.

15 Věra ČULÍKOVÁ, *Pozdně středověké odpadní jímky na Drůbežím trhu v Opavě: pepř, kmín, černucha a další rostliny (archaeological research in 2005)*, ČSZM-B 60/1, 2011, p. 27.

16 From the layers related to the operation of the high medieval castle kitchen and the filling of the wooden trough from the bottom of the moat, see S. KRÁLOVÁ, *Archeologické nálezy*, p. 142.

17 This is a field of natural science dealing with the search, separation and evaluation of plant macroresidues (plant seeds, fruits, etc.) from various finding environments (cultural layers, fillings of objects)

18 Namely, these were layers or contexts 178, 126, 121, 117, 123, 106, 116, 181 and 128 from the respective control blocks, whose age can be dated to the 15th until the 16th century based on archaeo-chronological analyses, which corresponds to the existence of a medieval or early modern Opava Castle.

19 Sieves with meshes from 1 to 0.25 mm were used to capture light ecofacts.

20 The absence of fruit and vegetables in the sampled findings is noteworthy.

21 The analysis was performed by RNDr. Miriam Nývltová Fišáková, PhD., Assistant professor at the Institute of Physiology, Masaryk University, Faculty of Medicine in Brno.

22 S. KRÁLOVÁ, *Archeologické nálezy*, p. 142.

species prevailed in all finding situations. Cattle and pigs were the most numerous; other farm animals were less numerous.²³ Most of the reported individuals died at skeletal maturity, but calves, piglets including foetuses and lambs also appear. According to the degree of preservation and damage of the bones, it can be estimated that this is exclusively kitchen material.²⁴ Of the wild species, the remains of wild boar, deer, roe deer and hare are registered in the collection. A large number of fish scales also appear;²⁵ then, less shells of freshwater and marine snails, oysters or scallops.²⁶ The numerous finds of snails, or their shells are interesting.

3. Evidence of archaeological finds to the form of the menu of the late medieval cuisine of the Opava Castle

At the end of the Middle Ages, Opava was an important residential town, where the world and the everyday culture of the nobility, bourgeoisie, craftsmen, merchants, clergy, urban poor people, but also the surrounding country people encountered. For the wider surrounding area, Opava was a town of markets,²⁷ trade²⁸ and exchange,²⁹ but also a place of something that we could call commercial hospitality from today's point of view, associated with pubs located in the central area of the town (Upper and Lower Squares, Mezi trhy (Between Markets)).³⁰ All these essential factors, in addition to the presence of the ducal court and the Opava duke at the

23 Sheep/goat, donkey, domestic fowl, or even species that are not consumed, such as cat, dog and horse.

24 According to the findings by RNDr. Miriam Nývltová Fišáková, PhD., most of the bones found here correspond more to kitchen waste (e.g. skull fragments and apical parts of limbs), which are bones with so-called poor-quality meat of type B. For this reason, bones with quality meat of type A (i.e. the highest quality, such as the proximal ends of the humerus and femurs, shoulder blades, pelvis, vertebrae and proximal parts of the ribs) are missing (these had to be "archaeologized" at other parts of the castle, e.g. in the premises near the palace, where we also assume a banqueting hall), but there are also bones that have lower quality meat of type AB (distal ends of the humerus and femurs, middle parts of the ribs). Scratches and bites were detected on 0.8% of the analyzed bone fragments in the places of tendons and attachments.

25 The development of pond farming in Opava is related to Duke Přemek (1365–1433) and the pond established near the Opava Castle, under the Kylešovský Hill; Irena KORBELÁŘOVÁ – Michal ZEŽULA et al., *S knížaty u stolu: kuchyně a kultura stolování na středověkých vévodských dvorech v Opavě a Ratiboři*, Ostrava – Ratibor 2018, p. 68. Here is also a reference to another nearby pond from 1485, built by Duke Viktorin of Poděbrady (1443–1500), the second-born son of King George of Poděbrady.

26 More information in S. KRÁLOVÁ, *Archeologické nálezy*, p. 142.

27 They were divided into weekly and annual. Cf. Monika FEYRLÍKOVÁ, *Kuchyně pozdního středověku*, Praha 2015, p. 17. In Opava, traditional markets were located in two main squares – Lower and Upper Squares – which is referred to by the name of their connecting street, Mezi trhy (Between Markets). Names such as Poultry Market, Horse Market and Cattle Market (today's Masarykova Street) can refer to narrowly specialized markets focused on a certain type of product, the name of which has been documented in the place since at least the 14th century – *FORUM PECORUM*. The market character of the place is also archeologically evidenced by a cattle pen and the discovery of a plate with burned numerical records. The fish market was originally called Pechring, according to the German name for pitch, which was sold mainly for the production of beer barrels. It got its current name much later, based on the sale of Christmas fish – according to Jaromíra KNAPÍKOVÁ – Zdeněk KRAVAR, *Opavský uličník, historie a současnost ulic a náměstí*, Opava 2017; Vlasta ŠIKULOVÁ, *Príspevek archeologie k nejstarším dějinám Opavy*, *Archeologické rozhledy* 27, 1975, p. 271.

28 The locations of individual types of shops are revealed by the names of the streets – Masná (butcher's), Kolářská (wheelwright's), Pekařská (baker's), Solná (salt) – according to J. KNAPÍKOVÁ – Z. KRAVAR, *Opavský uličník*.

29 The establishment of the town mint associated with the import of raw materials from Horní Benešov mines is placed in the course of the 13th century, near Jaktářská brána (Jaktar Gate), i.e. the location of the current Korum Hotel; Cf. František PAPOUŠEK, *Opavské mincování*, *Slezský numismatik* 1957/7–8, pp. 87–95; More information to be found here: <https://slezske-mince.webnode.cz/hornoslezska-knizectvi/opavsko/> [cit. 2. 2. 2024]; V. ŠIKULOVÁ, *Príspevek archeologie*, pp. 273–274.

30 More on the topic in Irena KORBELÁŘOVÁ et al., *Kulinární kultura Slezska a střední Evropy, východiska, metody, interdisciplinarita*, Opava 2015, pp. 35–41.

centre of the action, shaped this late medieval agglomeration³¹ into an important cosmopolitan centre of the region with all the conveniences of late medieval Central and Western European culture, including eating habits and culinary arts.³²

On the basis of archaeological findings from the area of the castle kitchen of the Opava dukes, we will try to reconstruct what was served on the princely table of the Opava rulers in the High and Late Middle Ages. We will not forget the way of food preparation either, because cooking and the art of preparing food is one of the main characteristics and, above all, differences that have shaped “human” culture since the earliest periods of the development of the genus Homo.³³

Based on the findings, meat was the predominant and probably the main component of the diet of the inhabitants of the Opava Castle. Mainly beef and pork were consumed. Their processing took place on the basis of osteological analyses directly in the castle complex,³⁴ which is also possible considering the nearby market with an archaeologically documented cattle pen.³⁵ The consumption of mainly fresh meat was quite common for the nobility of the High Middle Ages,³⁶ which is also evidenced by the pan-European increased livestock production from the mid-14th century.³⁷ For the higher social classes,³⁸ it was prepared³⁹ mainly by frying,⁴⁰ stewing

31 It was established at the ford of the Opava River at the beginning of the 12th century and transformed from a settlement into a town in 1224.

32 It must be taken into account that the Duke of Opava stood at the head of the social hierarchy of the medieval Czech lands in the 14th and 15th centuries, right behind the Czech King, but at the level of the Moravian margrave; Cf. I. KORBELÁŘOVÁ – M. ZEŽULA et al., *S knížaty u stolu*, p. 159.

33 Thermal the preparation of food, associated for the first time in connection with the use of fire, probably with the genus Homo erectus, is a cultural-historical phenomenon that has no analogues in “nature” except for the “direct ancestors of man”; compare: Eva FERRAROVÁ, *Jídlo pro radost. Proč jíme to, co jíme, a nejíme to, co nejíme*, Brno 2021, essays in the introduction, then further on p. 16.

34 This was enabled by the location of the Opava Castle, which formed part of the medieval urban agglomeration, and its residents could thus enjoy all the advantages of the town markets. There was a different strategy for meat processing in contemporary, isolated castle complexes, to which parts of animals already cut to pieces were transported. Cf. the Skály Castle (also Štarkov) near Nový Jimramov; more in Miriam NÝVLTOVÁ FIŠÁKOVÁ, *Zvířecí osteologický materiál z hradu Skály (horní hrad)*, in: Zdeněk Měřinský (ed.), *Hrad jako technický problém. Technologie a formy výstavby středověkých opevněných sídel*, Brno 2011, pp. 47–57.

35 See note no. 26.

36 Animals were driven into the towns in herds from the countryside, essentially alive. Poor people extended the durability of meat by salting or preserving, for example by drying or smoking; Cf. Massimo MONTANARI, *Hlad a hojnost. Dějiny stravování v Evropě*, Praha 2003, pp. 63–64.

37 From the 15th century, people in Western Europe consumed on average up to 100 kg of meat per person per year, which represented 500 g of meat per person a day (!). The popularity of beef in particular grew among the upper classes, which is evidenced by the retreat of pork meat from the town markets of that time and the associated onset of stable cattle breeding at the turn of the 14th and 15th centuries at the expense of free grazing in forests and meadows (for pigs only from the 15th century). The period in question is called carnivorous in Europe, and this condition prevailed until the 16th century when it was difficult for the lower classes to eat enough, which was probably caused by a significant increase in the population (around 1500, the European population grew from 84 million to exactly 111 million a hundred years later); Cf. M. MONTANARI, *Hlad a hojnost*, pp. 74–75, 77, 78, 96, 100 and 128; E. FERRAROVÁ, *Jídlo pro radost*, pp. 34–35.

38 The difference between the rich and the poor is evident both in the types of animal species and in the consumption of the better parts of individual livestock species. Based on the research of the medieval village and fortress in Konůvky, it can be clearly said that the share of beef cattle is higher in the fortress, where the meat of a higher consumption category was also consumed than in the village (so-called class A – meat from the back, thigh, shoulder). Cf. Václav PÁRAL – Zdena MĚCHUROVÁ – Michaela RIEDLOVÁ, *Zvířecí kosti ze zaniklé středověké vsi Konůvky (okr. Vyškov)*, *Archaeologia historica* 20/1, 1995, pp. 417 and 419.

39 Compare Magdalena BERANOVÁ, *Jídlo a pití v pravěku a ve středověku*, Praha 2005, p. 86.

40 From the turn of the 14th and 15th centuries mainly with the use of butter, which was related to the higher production of beef cattle north of the Alps, see note 36. Butter then dominates from the end of the 16th and especially

or grilling.⁴¹ From the course of archaeological work on the premises of Opava Castle, we have a large amount of evidence of fragments of so-called tripods intended for frying or pots intended for cooking food.⁴² The spits [fig. 2] also come from the contemporary locations of Silesian castles, which probably formed a traditional and integral part of every better-equipped kitchen of these medieval fortifications.⁴³ In addition to adult and young heads of beef and pork, the kitchen of the Opava castle also processed, but to a much lesser extent,⁴⁴ dishes made from sheep or goat meat.⁴⁵ Poultry meat was a luxury dish in the Middle Ages, more typical of the cuisine of higher social groups.⁴⁶ Both young (chickens) and adult pieces⁴⁷ were prepared by cooking or roasting,⁴⁸ especially (in the case of chicken) on holidays or other important days.⁴⁹ The occurrence of horse and donkey bones in the waste from the Opava Castle kitchen is very interesting. Above all, the presence of horses is not unusual in the context of archaeological situations related to the environment of medieval cuisine,⁵⁰ and horse and donkey meat could thus play a less significant role in the diet of the medieval inhabitants of the Opava Castle.⁵¹

During fasts, which in the medieval Christian year were up to 150 days (fasts of injury and abstinence),⁵² it was allowed to consume anything “born in water” from the 9th century.⁵³ Findings of a large number of fish scales,⁵⁴ shells of both freshwater and marine snails and

in the 17th century, which is related to the overall rebirth of society as a result of the Reformation. See M. MONTANARI, *Hlad a hojnost*, pp. 116–117; M. BERANOVÁ, *Jídlo a pití*, pp. 206–207.

41 Compare M. FEYRLÍKOVÁ, *Kuchyně pozdního středověku*, p. 14.

42 Ceramics from this period contain approx. 80% of fragments with the evidence of use in the kitchen – storage containers, ceramics with burns etc.; The remaining 20% consists of table ceramics.

43 The iron trestle spit comes from another Silesian castle, namely Kaltenštejn. Its actual appearance is shown in fig. 2 of this article. The object depicted in the publication by I. KORBELÁŘOVÁ – M. ZEŽULA et al., *S knížaty u stolu*. In the picture on p. 198, does not come from the Kaltenštejn Castle, but from the locality of Mušov, and, moreover, it is not even medieval, but comes from a princely grave of Roman times; Cf. Eduard DROBERJAR, *Encyklopedie římské a germánské archeologie v Čechách a na Moravě*, Praha 2002, pp. 192 and 302. Pavel Kouřil (I hereby thank him for the consultation on this subject) knew about the oversight caused during the printing of his co-authored publication, and the spit (See P. KOUŘIL – D. PŘIX – M. WIHODA, *Hrady českého Slezska*, fig. 325) published by him was thus uncritically adopted in other works without any sound revision for many years.

44 This statistical fact is also documented in other contemporary locations, Cf. V. PÁRAL – Z. MĚCHUROVÁ – M. RIEDLOVÁ, *Zvířecí kosti*, p. 415; M. NÝVLTOVÁ FIŠÁKOVÁ, *Zvířecí osteologický materiál*, p. 51.

45 In the Middle Ages, these types of meat were served cooked with a sauce with vinegar, sour grapes or sour apples (cf. M. BERANOVÁ, *Jídlo a pití*, s. 91), which is a characteristic feature of the 14th and early 15th centuries, when meat sauces were prepared from various types of sour ingredients (vinegar, unripe grapes, wild fruit) without the use of fat. Cf. M. MONTANARI, *Hlad a hojnost*, p. 117.

46 More in V. PÁRAL – Z. MĚCHUROVÁ – M. RIEDLOVÁ, *Zvířecí kosti*, p. 419; Irena LOSKOTOVÁ – Václav PÁRAL – Michaela RIEDLOVÁ, *Zvířecí kosti z nádvoří Staré radnice v Brně*, *Archaeologia historica* 21, 1996, p. 415.

47 M. NÝVLTOVÁ FIŠÁKOVÁ, *Zvířecí osteologický materiál*, p. 48.

48 More about the preparation of poultry in the Middle Ages in M. BERANOVÁ, *Jídlo a pití*, pp. 94–95.

49 M. MONTANARI, *Hlad a hojnost*, p. 51.

50 V. PÁRAL – Z. MĚCHUROVÁ – M. RIEDLOVÁ, *Zvířecí kosti*, p. 418; M. NÝVLTOVÁ FIŠÁKOVÁ, *Zvířecí kosti z předhradí lelekovického hradu*, *Pravěk*, Supplementum 16, pp. 53–55.

51 E.g. more like food intended exclusively for the castle staff.

52 In case of injury, people were allowed to eat to their fill only once a day, in the afternoon; in case of abstinence, it was forbidden to eat meat, according to M. FEYRLÍKOVÁ, *Kuchyně pozdního středověku*, p. 53.

53 M. MONTANARI, *Hlad a hojnost*, p. 34, 80.

54 The analyses failed to identify specific types of individual fish species, however, based on analogies, we can assume that perch, roach, bream, pike, crucian carp, dace, zander, tench, etc. were served in the Opava Castle. More in I. KORBELÁŘOVÁ – M. ZEŽULA et al., *S knížaty u stolu*, the figure on p. 68.



Fig. 2: The iron trestle spit from the Kaltenštejn Castle.

Photo SZM.

oysters testify to the variety of diet even during these fasting days. Considering their high nutritional value and the proportion of proteins and minerals in their meat, we can consider the consumption of snails as more of a supplementary diet, which was not quite common in the Czech lands during the Middle Ages.⁵⁵

Game meat was also an integral part of the menu of the Opava princely court.⁵⁶ Based on the findings, bones of wild boar, deer, roe deer and hare appear in the material, which represents a typical range of species consumed in the High Middle Ages.⁵⁷ Their small number⁵⁸ may point to the lack of game and the cessation of part of the forested areas of the duchy in the 15th century.⁵⁹ Even so, game meat remains a luxury food mainly for the upper classes, especially the nobility, already due to the exclusive right to hunt, which the owners of the hunting grounds boasted.

Plant-based food was also prepared at the Opava castle, when bread, legumes and vegetables⁶⁰ formed the basis of the menu for all levels of society. In particular, cereals, which

55 Compare M. BERANOVÁ, *Jídlo a pití*, p. 103; M. FEYRLÍKOVÁ, *Kuchyně pozdního středověku*, p. 55; Their presence in archaeological situations related to the Opava Castle kitchen may point to contacts of the duke's court with France, where this type of animal was a common part of the diet. Cf. *Ibid.*, p. 55.

56 I. KORBELÁŘOVÁ – M. ZEŽULA et al., *S knížaty u stolu*, p. 87.

57 Game also appears in the urban environment, see I. LOSKOTOVÁ – V. PÁRAL – M. RIEDLOVÁ, *Zvířecí kosti z nádvoří*, p. 415.

58 On average, around 4% of osteological findings from the grounds of noble residences are reported, more in: V. PÁRAL – Ž. MĚCHUROVÁ – M. RIEDLOVÁ, *Zvířecí kosti*, p. 419.

59 I. KORBELÁŘOVÁ – M. ZEŽULA et al., *S knížaty u stolu*, p. 86.

60 Unfortunately, it does not appear in the paleoarchaeological analyses from the Opava Castle. However, it is known from other research within the Opava agglomeration, see V. ČULÍKOVÁ, *Pozdně středověké odpadní*, p. 6–7.

were processed into bread, porridge or soups, dominate. The predominance of rye in Europe is typical for areas located further north of the Alps,⁶¹ and finds of this type of cereal prove that bread was baked directly in the Opava Castle kitchen. Compared to rye, the production of wheat bread in the Middle Ages was mainly associated with a higher social environment.⁶² Oats, millet or barley were used for soups and porridges, due to their “suitability” for cooking.⁶³ The latter is not intended for leavening due to its low starch content, and, therefore, was not widely used in the Middle Ages for preparing bread. It is, however, ideal for the production of beer,⁶⁴ along with other cereals (except oats) (barley beer is “rounder” and of the highest quality),⁶⁵ which was consumed in large quantities by all social and age groups in the Middle Ages.⁶⁶ In the set of archaeobotanical samples from the kitchen area of the Opava Castle, einkorn wheat is also found, which is not typical⁶⁷ for the Middle Ages and its presence in the place is debatable. Perhaps it is related to some older prehistoric settlement, which was not captured by the research, but could have been located nearby. On the other hand, the finding of spelt is not unusual at all, although it was not often sown here in the late Middle Ages,⁶⁸ as it was used in a mixture together with rye and wheat in the production of bread.⁶⁹

Peas and lentils are the oldest cultivated legumes and characteristic representatives of the medieval cuisine of the rich and the poor.⁷⁰ Peas were primarily used to prepare soups and porridges,⁷¹ in case of a shortage, legumes could be used in the production of bread together with cereals,⁷² and, in the manor environment, legumes were also prepared as desserts.⁷³ Peas were cooked with groats⁷⁴ or roasted.⁷⁵

61 It is less demanding especially on nutrients in the soil and its overall quality. Cf. M. BERANOVÁ, *Jídlo a pití*, p. 33; M. FEYRLÍKOVÁ, *Kuchyně pozdního středověku*, p. 30. The Mediterranean region, on the other hand, has been associated with the consumption of mainly wheat since antiquity. Cf. M. MONTANARI, *Hlad a hojnost*, pp. 35–37.

62 M. MONTANARI, *Hlad a hojnost*, pp. 35–37.

63 Ibid., p. 37.

64 Brewing beer in contemporary castles is not unusual. The brewery is mentioned in written sources, e.g. as for the Kaltenštejn Castle, see P. KOUŘIL – D. PRIX – M. WIHODA, *Hrady českého Slezska*, p. 210.

65 M. BERANOVÁ, *Jídlo a pití za Rudolfa II.*, Praha 1997 p. 21.

66 Because of heavily salted foods (preservation of meat), or for a practical reason, when it was “boiled water”. Consumption was around three liters per person a day, including children. Cf. M. MONTANARI, *Hlad a hojnost*, p. 120. The so-called March beer was famous in Opava (according to M. BERANOVÁ, *Jídlo a pití za Rudolfa*, p. 22), but in the late Middle Ages Žatec, Rakovník, Slaný and Rokycany beers were among the best (according to M. FEYRLÍKOVÁ, *Kuchyně pozdního středověku*, p. 40). Świdnica Beer (from Poland) was also popular in the Czech lands during the Hussite period of the 15th century, according to Petr ČORNEJ, *Jan Žižka*, Praha 2019, p. 451.

67 More in M. BERANOVÁ, *Jídlo a pití*, p. 30; Michaela LÁTKOVÁ, *Rostliny a výživa velkomoravských Mikulčic*, Brno 2019, p. 32.

68 M. BERANOVÁ, *Jídlo a pití*, p. 33.

69 Its use is, for example, quite common in Geneva in the 17th century. Cf. M. MONTANARI, *Hlad a hojnost*, p. 106.

70 M. BERANOVÁ, *Jídlo a pití*, pp. 131–142; Ibid., *Jídlo a pití za Rudolfa*, p. 14.

71 Cereal porridges were prepared in cauldrons, where cereals, legumes, vegetables were mixed with meat and bacon. According to M. MONTANARI, *Hlad a hojnost*, p. 37.

72 Ibid., pp. 106–107.

73 They were prepared with sugar, which entered European cuisine in the form of cane at the end of the 14th and 15th centuries (according to M. MONTANARI, *Hlad a hojnost*, p. 119), as fried donuts or sweet cones. See M. BERANOVÁ, *Jídlo a pití za Rudolfa*, p. 14.

74 A Slovak meal called Šumajstr, or Jewish cholent with peas and groats, is still known.

75 M. FEYRLÍKOVÁ, *Kuchyně pozdního středověku*, p. 32.

Even the lamb's quarter⁷⁶ was not an unknown plant for medieval cuisine. Its young leaves found use in salads, the seeds were used for feeding or ground into flour. Another wild plant found, danewort, was used rather for healing and medicinal purposes. If the nobility or the garrison of the castle suffered from asthma, then they could use the juice obtained from its fruits; for inflammation of the urinary tract, a decoction of the dried rhizome could be used.⁷⁷ Of the edible crops growing in the wild, only red raspberry represented the fruit⁷⁸ found in the Opava Castle.⁷⁹ The fruits of this species could also be used for flavouring beer, which was very popular in this form in the late Middle Ages.⁸⁰

4. Conclusion

The research of the Silesian Museum, which took place under the leadership of Mgr. Soňa Králová in connection with the reconstruction of the so-called Müller's House, was one of the most extensive archaeological events in Opava. It was conducted at a high level, including taking samples of crops and osteological material, mainly of an animal nature. The so-called Müller's House is located in the grounds of the former Opava Castle, where the original castle kitchen was also located. It was located on its western forecourt, between the castle wall and near the curtain wall, above the moat, in the area of the bailey facing the town. It was the background of a separate two-part castle kitchen⁸¹ of the Přemyslid Castle with two chimneys, where, based on our findings, almost all operations connected with this craft were carried out – from cutting and processing meat of farm and wild animals, including fish and other aquatic animals, to baking bread, or cooking porridges, flatbreads, herbal decoctions to beer production.

Vývoj města Opavy ve 14. století na základě osteologických a archeobotanických nálezů z Müllerova domu. Příspěvek k problematice masité a zeleninové stravy v pozdním středověku a raném novověku v Opavě Shrnutí

Článek přináší informace získané z environmentálních vzorků odebraných během výzkumu v areálu Müllerova domu v Opavě na Komenského ulici č. 8, kde mezi léty 2015 – 2019 probíhal rozsáhlý záchranný archeologický výzkum spojený s rekonstrukcí objektu a přilehlé zahrady. Budova se nachází na parcelách č. 558, 559/1 a 559/2 v místech původního areálu opavského hradu. V místě jeho západního předpolí, resp. v prostoru předhradí na straně do města, je tradičně umístována poloha původní hradní kuchyně, resp. dvoudílné kuchyně. Vysoký podíl osteologických pozůstatků, archeologických nemovitých situací a charakteristických předmětů získaných během výzkumu, tuto hypotézu jednoznačně potvrdil. Během výzkumu bylo získáno množství environmentálních dat získaných z prostoru hradní kuchyně, které byly podrobeny osteologické a archeobotanické analýze. Na podkladě

76 Its collection or targeted cultivation has been known since prehistoric times, according to M. BERANOVÁ, *Jídlo a pití*, p. 33.

77 Since they contained strongly colouring substances (anthocyanins), the fruits were also used in the past for colouring wine, dyeing leather, yarn and in the production of inks.

78 Fruit certainly could not have been missing from the duke's table, although it is not captured in the research, but it does appear in the same period among the bourgeoisie, see V. ČULÍKOVÁ, *Pozdně středověké odpadní*, pp. 11–21.

79 Its consumption (juices, direct consumption, but also in folk medicine) has been taking place in our territory since at least the Middle Hillfort Period, i.e. from the 9th century, in M. LÁTKOVÁ, *Rostliny a výživa*, p. 93.

80 M. FEYRLÍKOVÁ, *Kuchyně pozdního středověku*, p. 40.

81 The construction of castle kitchens outside the castle body was a common practice in the 15th century for safety reasons, when working with fire and preparing food.

těchto provedených analýz byla rekonstruována podoba středověké hradní kuchyně, včetně kulinářských procesů, které zde probíhaly – od bourání a zpracovávání masa chovných i divokých zvířat včetně ryb a dalších vodních živočichů, přes pečení chleba, či vaření kaší, placek, bylinných odvarů až po výrobu piva.

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