



Written in Bones

**Studies on technological
and social contexts
of past faunal skeletal remains**

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Bone, horn and antler working in medieval Wrocław

Medieval bone, horn and antler items excavated in Wrocław include toilet and textile combs, playing pieces, beads, buttons, buckles, knife handles, pins, saddle fittings, crossbow-nuts, needles, styli, sledge runners, skates and many other objects.

The remains of workshops and concentrations of waste material were discovered at more than ten archaeological sites in Wrocław dated between the 13th to the 15th centuries.

The aim of this paper is an attempt of comparison of the results of archaeological excavations with written sources and a state of the location of places producing the wares from bone, horn and antler as well as determination of the raw material preferences and sources of supply in raw material.

Key words: bone, horn, antler, medieval Wrocław, workshop

During the Middle Ages, a wide range of artefacts were made of skeletal materials (Fig. 1). Medieval bone, horn and antler items excavated in Wrocław include – but are not limited to – the following: toilet and textile combs, playing pieces (dice, counters, and chessmen), beads, buttons, buckles, knife handles, pins, saddle fittings, crossbow nuts, needles, styli, sledge runners, and skates (Jaworski 1990; 1995:145-154; 1999:70-92; 2007: 511-522; Wiśniewski 1993:319-337; Wiśniewski, Tymciów, Łaciuk 1994:379-381; Jastrzębski 1999:89-99; 2004: 245-267; Wachowski 1999:184, Fig. 1:4; Konczewska 2010a:245-252, Fig. 164, 166).

It is worth emphasizing that the raw materials used by Wrocław's late-medieval craftsmen were not determined on a purely arbitrary or expedient basis. Rather, these artisans intentionally selected sources of raw material according to task, and one may perceive a particular focus on cattle metapodial bones, cattle horn and occasionally antler. They rarely used bones of other species of animals (Jaworski 1998:73-81; 1999:71-88). Moreover, their industries were defined in terms of the products they produced, rather than the raw materials they consumed. Thus, the combmaker made combs of bone, horn, wood

and antler (MacGregor 2001:367). The choice of material was determined by the taste, preferences, and means of the consumer. Progressive urbanisation and limited forest access played a certain role in moving away from antler as a major raw material (Ulbricht 1984:73; MacGregor 2001:366-367). With this in mind, it is significant that in Wrocław the quantity of bone artefacts always seems to have surpassed the number of antler articles. For instance, only 20% of the all faunal items discovered in early medieval Ostrów Tumski were made of antler (Jaworski 1990:19, 22).

Bone and horn were available as by-products of meat consumption, and of the skinner's and tanner's trades. Thus, to the late-medieval craftsmen, bone was potentially a more accessible raw material than antler (see Müller 1992; Gręzak, Kurach 1996). Cattle bone was preferred for its year-round availability, for its (probable) low price, and for its aesthetic and physical properties: colour, shape, size and thickness (Krysiak 1987:230; Jaworski 1998:81-84). In particular, cattle metapodials, (both metatarsus and metacarpus) were used in the manufacture of a wide range of objects, including combs, beads, buttons, and dice. In addition, cattle horn (the ke-



Fig. 1. Late medieval artefacts from Wrocław: a – cattle bone and horn waste, Szewska Street, b – bone waste from bead making, Łaciarska Street, c – bone combs, Szewska/Uniwersytecka Street, d – bone/antler buckle, Szewska/Uniwersytecka Street

ratinous sheath itself) was suitable for the production of combs, but our knowledge of hornworking is confounded by the material's poor survival potential under normal burial conditions.

The development of medieval Wrocław as complicated and multipart urban structure is the subject of detailed studies of both archaeologists and historians¹. Large-scale excavations in the Old Town provide valuable material for understanding the material culture of the inhabitants of Wrocław and enable identification of the possible location of workshops, including those involved in the processing of bone, horn and antler.

¹ Results of the archaeological research on medieval Wrocław are published cyclically in the *Wratislavia Antiqua* series.

The remains of workshops and concentrations of waste material were discovered at more than ten archaeological sites in Wrocław, dated between the 13th and 15th centuries (Jaworski 2007:511-512, 519, Fig. 4, 521-522). This evidence appears in the form of detached horncores with traces of sheath-removal, lower limb bones (generally of cattle, and particularly discarded proximal and distal ends of metapodials), by-products, semi-manufactures, and unfinished wares. The results of archaeological excavations were compared with written sources (Tab.1, Fig. 2, 3). It is difficult to identify in the historical records the craftsmen who may have carried out this sort of work, and for that reason archaeological studies are very important. According to documentary and archaeological evidences the workshops of combmakers, needlemakers, rosary and dicemakers

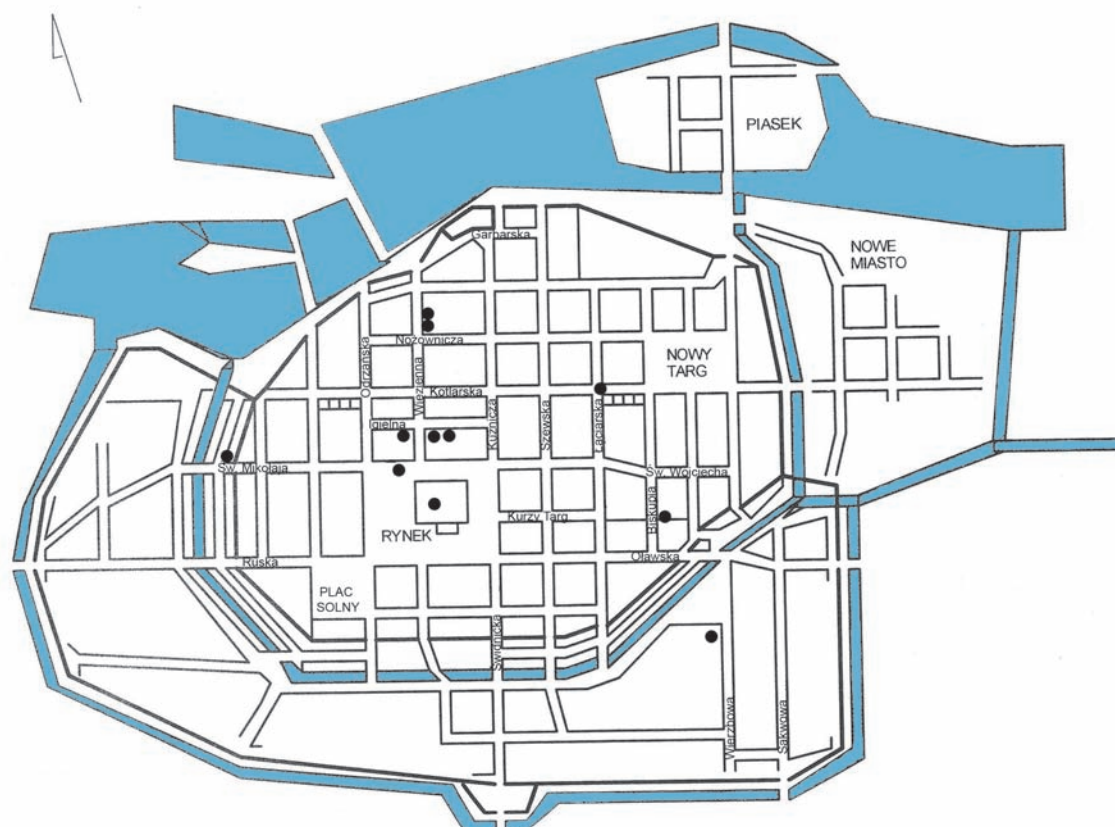


Fig. 2. Plan of Wrocław. Archaeological sites at which bone, horn and antler waste were found, and interpreted by K. Jaworski as workshops (after Jaworski 2007)

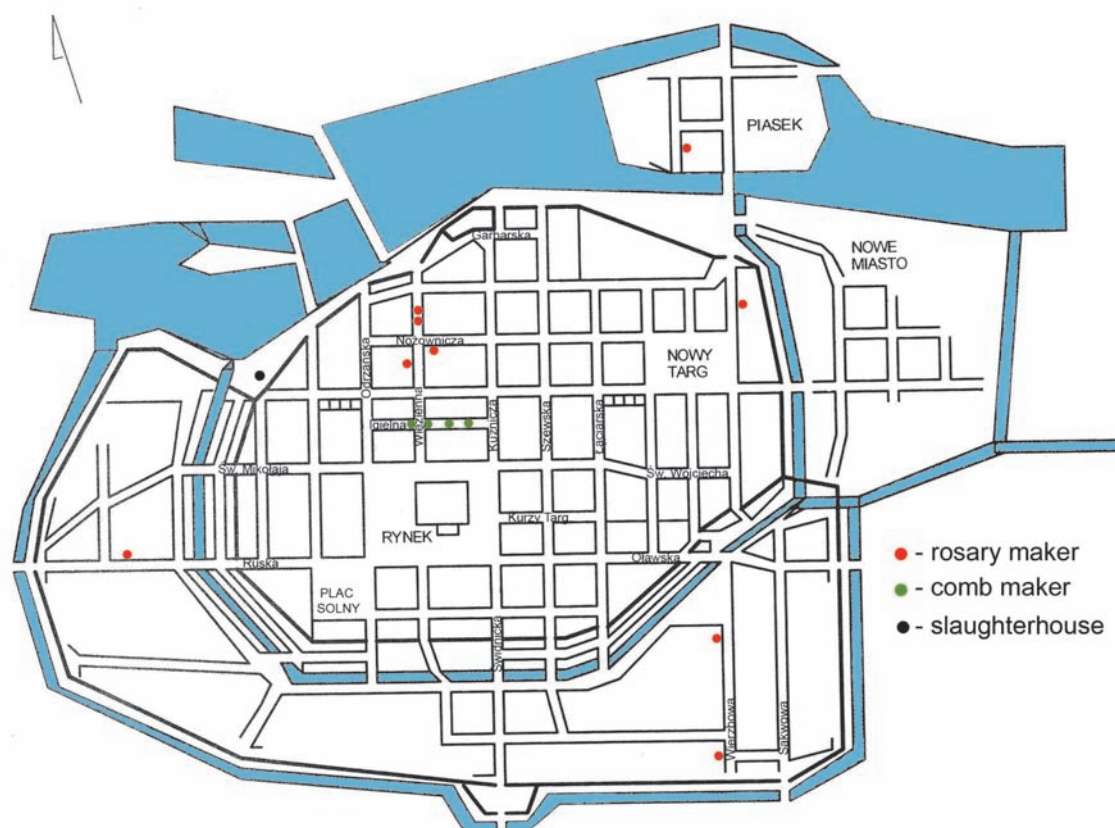


Fig. 3. Plan of Wrocław. Historically attested locations of comb and rosary-makers in 1403 (after Goliński 1997)

were located in the Butcher's Quarter, in the area to the north of the Market Square (Rynek), and its north-western part (Jaworski 2007). Bone, horn and antler could also be used by a range of other professions, including crossbow-makers, turners, belt-makers, saddlers, cutlers, and joiners. A list of lower-class tax payers working in Wrocław in the year 1403 mentions: 4 combmakers, 9 rosarymakers (paternosterer), 21 needlemakers, 60 cutlers, 7 saddlers, 33 belt-makers, 4 turners, 3 crossbow-makers, and 9 joiners (Goliński 1997:370-380; 477-480, maps 26-30).

At 6-8 Sukiennice (the Cloth Hall) two pits (no 12, 13) dated to the half of the 13th and 13/14th centuries were interpreted by explorers as workshops. Their chief outputs appear to have been dice and (probably) textile combs. The 1,500 artefacts recovered in this pits and in their neighbourhood included bone waste from dice-making, as well as semi-manufactures, unfinished and completed dice. Also present were a lead-filled first *Bos* phalanx, and several fragmentary textile combs (Wiśniewski 1993:325, 332, 337; Wiśniewski *et al.* 1994:379-381). In the younger pits – no 13, implements identified included a stone plate and stone polisher (Wiśniewski 1993: 325, 337, Fig. 12:7-9). The oldest documentary reference to Wrocław's Cloth Hall dates to 1242. Archaeological investigation in the middle of the Market Square indicates that initially the Cloth Hall simply consisted of a number of temporary wooden structures. These served as the main market, and were accompanied by workshops producing dice and other goods (see above). The brick-built Cloth Hall was constructed in the second half of the 13th century (Goliński 1991:19-25; 1997:24).

A quantity of cattle scapulae, semi-manufactures, and bone-working debris (over 1,800 bones in total) were found in the north-western part of the Market Square. These have been interpreted as saddle fittings, and associated with the workshops of saddlers. Tellingly, the stalls of saddlers in this area are recorded in written sources from the 14th century (Goliński 1997:25; Jastrzębski 1999:89-90, 96-99; Jaworski 2007:517-518).

A certain amount of handles, horn- and bone-working waste uncovered at Nicolaus Street and dated between the 14th and 15th centuries should presumably be connected with cutlers (Tab. 1). In England, the medieval Cutlers' Company of London included not only the cutlers who assembled and marketed the finished products, but also blade smiths, sheathers, and – most importantly for us – hafters. These last made handles of every material, combining work in bone, horn and ivory with metalwork (McGregor 2001:367).

Large quantities of cattle bone and horn waste (130 metapodials and 148 horncores) come from cultural layers and rubbish pits discovered at 18 Igielna (Needle Street). It is interesting that any unfinished articles and semi-manufactures were noted. Four textile combs and one double-sided toilet comb were excavated from the site, as well as four playing pieces made of sheep/goat phalanges. Krzysztof Jaworski supposes that this site housed a workshop to produce combs. Interestingly, on the basis of archival documents medieval Igielna Street was inhabited by combmakers as well as producers of needles and needle-cases (Goliński 1990: 268; Jaworski 2002:213-214).

At 14 Igielna, 47 fragments of bone and horn waste had accumulated in the oldest stratigraphic layers, associated with a wooden construction dated to the beginning of the 14th century. Most of the waste fragments relate to the production of toilet combs, but the manufacture of dice and beads was also evidenced (Buśko *et al.* 1996:261-275). At 8 Igielna, a collection of antler blanks which have been drilled with holes attests to the production of prayer beads (Piekalski 1991:151).

Waste material at Biskupia Street shows evidence of the production of dice and rosaries in vicinity of this area (Borkowski, Gierczak 1995:221-227; Jaworski 2007:518-519), while, according to Krzysztof Jaworski (1999:92), at 10-11 Więzienna there were probably three workshops active in the production of toilet combs (one existed in the 2nd half of the 13th century and the second — in 14th century) and rosary beads (in 15th century). It is thus notable that from this area come two horn double-sided simple (i.e. one-piece) combs (Jaworski 1999: Fig. 22). Such finds are very rare, as keratinous objects rapidly decay in the soil. Finally, a certain quantity of bone and horn waste material was also discovered in cultural layers during the excavations under the pavement of the Szewska and Łaciarska Streets (Konczewska 2010b:265-267, 378-380).

The oldest evidence of the craftsman's activity in Wrocław come from the 1st half of the 13th century (6-8 Sukiennice and 8 Igielna), and the youngest from 15th century (10-11 Więzienna, 3 Wierzbowa, as well as Mikołaja and Biskupia Streets). Archaeological studies confirm the presence of workshops specializing in the processing of bone, horn and antler in the places mentioned in written sources from the 14th and early 15th century. Chronology of the discovered artifacts indicates that some of them existed much earlier – in the 13th century, what may suggest long-duration of workshops in discussed area. Probably their location were influenced by neighborhood of slaughterhouses and butcher stalls, which were the

main source of raw material supply for craftsmen. The range of products manufactured in Wrocław does not differ from other well-known urban centers of the Western Europe. This is probably due to the standardization of production in this cultural tradition.

The oldest and most complete list of the guild's organizations in Wrocław are *iura omnium mechanicorum et operariorum ciuitati Wratislaviae* dating back to around the year 1300, and contained in a wider statute book known as the charters of Wrocław craft (Goliński 1991:62-63). The first references to the needle-case makers – the producers of bone, antler and wood containers designed to hold needles – occur in this register. Mateusz Goliński suggests that at the time of this edition of the guild's act, the term needle-case makers also encompassed combmakers and manufacturers of a range of other articles: the styli used in writing on wax tablets, knife and tool handles, pins, playing pieces, and pendants (Goliński 1991:98-99). Presumably then, the production of needle-cases and combs had a pedigree as part of one of the oldest of the craft specialisms involving the processing of bone, horn and antler. The evidence for bone, horn and antler working at the Nowy Targ (New Market) between the 12th century and the first half of the 13th is testimony to domestic handicraft (producing toggles, pins, sledge runners, skates, and simple combs) and to the manufacture of items by and for the use of craftsmen of other specialities (e.g. awls, needles, and handles). In the late Middle Ages, producers of needle-cases were recorded together with combmakers, and their workshops were located in the present Igielna (Needle Street). In 1390, this street appears in historical sources as Nadelnergasse (Needle Street), and in 1398 as Kemmergasse (Comb Street) (Goliński 1990:268, 1997:373, tab. 47, 53). On the basis of archival documents, such as the 1389



Fig. 4. Coffin cartouche of the comb, rosary and needlemaker's guild from Wrocław, 1603 (after Marcisz 2002)

and 1420 lists of guilds we know that combmakers and needlemakers organized themselves as parts of a single guild (Fig. 4), while in 1420 both professions are mentioned together with rosary-makers (paternosterer), wire-makers, hook and eye-makers and melters of tin (Goliński 1997:462, Tab. 120). We should also remember the importance of domestic handicraft, which in 13th-15th century Wrocław, was responsible for the production of sledges, skates, toggles, pins and other simple articles, according to the maker's own needs.

Table. 1. Late medieval archeological sites in Wrocław with evidence for bone, horn and antler processing

Archeological site	Waste			Unfinished product	Profile of the manufacture	Chronology
	Bone	Horn	Antler			
North-western part of the Market Square	+	+	+	+	Linings, toilet combs, playing pieces	The end of the 13 th – 14 th
Więzienna 10-11 (Prison Street)	+	+	–	+	Toilet combs Rosary beads	The second half of the 13 th 14 th 15 th
Sukiennice 6-8 (Cloth Hall Street)	+	+	?	+	Dice, textile combs	The half of the 13 th and 13/14 th
Igielna 18 (Needle Street)	+	+	–	–	Combs?	The second half of the 13 th – the first half of the 14 th

Igielna 8	–	–	+	–	Rosary beads	The first half of the 13 th
Igielna 14	+	+	?	–	Toilet combs, rosary beads, dice	The beginning of the 14 th
Mikołaja 23 (Nicolaus Street)	+	+	–	–	Processing of cattle horn sheath	14 th -14/15 th
Mikołaja 24	+	+	–	–	Knife handle Rosary beads	14 th -14/15 th 15 th
Mikołaja 25	+	+	–	–	Processing of cattle horn sheath	15 th
Mikołaja 26	+	+	–	–	Rosary beads, dice	15-15/16 th
Biskupia (Episcopal Street)	+	–	–	–	Dice, rosary beads	15 th – the beginning of the 16 th
Kotlarska (Coppersmith Street)	+	?	?	+	Textile combs	13 th (?)
Wierzbowa 3 (Willow Street)	+	–	+	–	Rosary beads?	14-15 th

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