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A NEW DEPOSIT OF EARLY MEDIEVAL AXE-LIKE IRON BARS FROM A SETTLEMENT AT BRZESKO, SITE 16-17, LESSER POLAND VOIVODESHIP

ABSTRACT

Szmoniewski B. S., Lasota-Kuś A., Lach A. and Okoński M. 2024. A new deposit of early medieval Axe-like iron bars from a settlement at Brzesko, Site 16-17, Lesser Poland Voivodeship. *Sprawozdania Archeologiczne* 76/2, 341-367.

The article discusses the rare find of a deposit of 38 ax-like iron bars from Brzesko, Site 16-17 (Lesser Poland Voivodedship). Each of them was forged out of iron in the form of an oblong axe with a short blade. Lugs on a part of the items form cups. The characteristic shape of the preserved fragments allows for including them in the type of Lesser Poland bars, also called Vistula's bars. These items differ from the Greater Moravian type known from territories south of the Carpathian Mountains. They were discovered in feature 286. In the fill, only a few pottery fragments have been found.

In light of the analogy of rims and analogous finds from Lesser Poland and Great Moravia, this complex can be dated to the period between the mid-9th century and the beginning of the 10th century, or its first half.

Keywords: iron axe-liked bars, Lesser Poland, Early Middle Ages
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1. INTRODUCTION

Site 16-17 in Brzesko is located on the southern and southwestern slopes of a small elevation of the ground overlooking a minor left tributary of the river Uszwica (Fig. 1: A and B). Rescue excavation was conducted in 2023 in advance of an extension of the local road infrastructure, the work was done by the archaeological companies APB THOR sp. z o.o. together with Archeologiczny Serwis Konsultacyjno-Badawczy Mirosław Kuś. During this research, among other things, 42 features were found that on the basis of the material evidence discovered in their fills, could be dated to the so-called tribal phase of the Early Medieval Period. Apart from the ceramic material mentioned, a dozen iron items were found among which a deposit consisting of 38 axe-like iron bars (so-called grywnas) placed in Feature 286 seems to be the most important find (Fig. 1: B).

2. THE LAYOUT OF THE SETTLEMENT

An attempt to determine the layout and arrangement of features within the settlement, to explain the positioning of Feature 286 containing the deposit of axe-like iron bars is difficult at this stage. Firstly, the settlement has not yet been excavated to its full extent, so the documentation on this subject is still fragmentary. Secondly, there are no observable chronological differences regarding functioning of the particular features, especially within one phase. We must also consider complex denudation processes as well as anthropogenic processes impacting the relocation of archaeological evidence material on the surface (*cf.*, Gruszka 2015, 73). The discussed settlement was located on a slope subjected to strong denudation processes which can be indicated by a relatively deep ravine at the foot of the elevation where a small watercourse, a tributary of the Uszwica river, had its bed. All these factors have influenced the state of preservation of the features and items buried and characterized by small volumes. The layout of features in the settlement seems to suggest its linear arrangement consisting of at least two rows of features running parallel to the watercourse mentioned earlier, now hardly visible. This observed linear arrangement is typical for settlements of the Early Medieval Period (Kobyliński 1988, 122-128; Dulinicz 2001, 169, 170).

However, it is also worth mentioning that Feature 286 was located in the southern part of the settlement, somewhat aside and rather far from the centre where a concentration of dwellings and pits dated in the tribal phase has been documented (Fig. 1: B). It is perhaps connected with the purpose of the feature as a place of iron processing, and this may be the reason for placing it in a part of the settlement reserved for productive activities. Moreover, it must be stated here that since the 9th century, some settlements began to display division into two separate parts: the residential and the production ones (Gruszka 2015, 55).

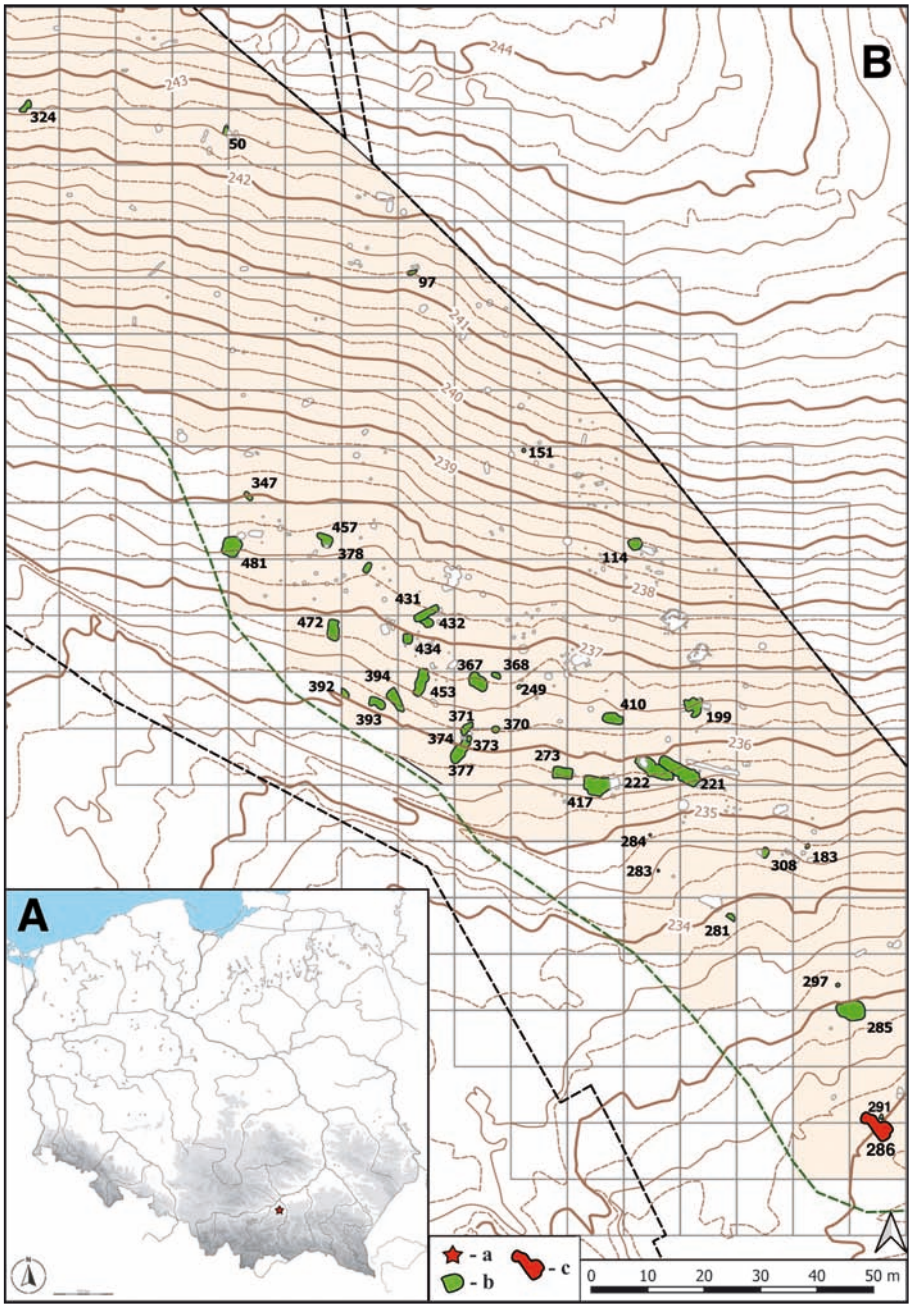

Fig. 1. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship. A – location of the site. B – general horizontal layout of the excavated area (a – site; b – features dated back to Early Medieval horizon; c – feature no 286 with the deposit of iron ax-like bars; drawing B. S. Szmoniewski and A. Lach)

3. DESCRIPTION AND INTERPRETATION OF THE FEATURE 286 (Figs 2-5)

Feature 286 was irregular in plan, of an approximately rectangular shape with a semi-circular annexin its eastern part and with a lesser annex in its northern part. The pit had the parameters of 569 × 325 cm with slightly sloped walls and a depth reaching 22 cm, positioned on the level of 30 cm below the current surface of the ground (Figs 2, 3, 5). The filling was homogeneous, of black colour, and strongly saturated with pug. In its north-eastern part, there was a deposit consisting of 38 axe-like iron bars (Fig. 4). In the pit filling, there were 13 fragments of pottery and one piece of slag.

Feature 286 inside which the deposit of iron bars was found had an atypical shape in its horizontal plan supplemented by a post near the semi-circular annex. A log cabin construction seems to be indicated by a streak left by a burned fragment of a log nested along at the eastern edge, separating the main body of the structure from the semi-circular annex. The unusual shape of the feature could have been caused by its special purpose. Considering the pattern of communication dynamics inside the chamber as well as the presence of such facilities as strip footing (earthen benches), we can assume that such fittings were mounted along the SW edge out of the earth from the centre of the chamber. They could have been used to store tools assuming that some smithing activities may have been conducted inside the feature because apart from the secondary burnt iron bars, pieces of slag were also found. If we agree to Mirosław Ciesielski's proposition that such a strip foot-

Fig. 2. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship. Horizontal layout of feature 286 (Photo A. Lach)

Fig. 3. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship. Cross-section of feature 286 with the iron ax-like bars deposit in the foreground (Photo A. Lach)

Fig. 4. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship. Deposit of the iron ax-like bars (photo A. Lach)

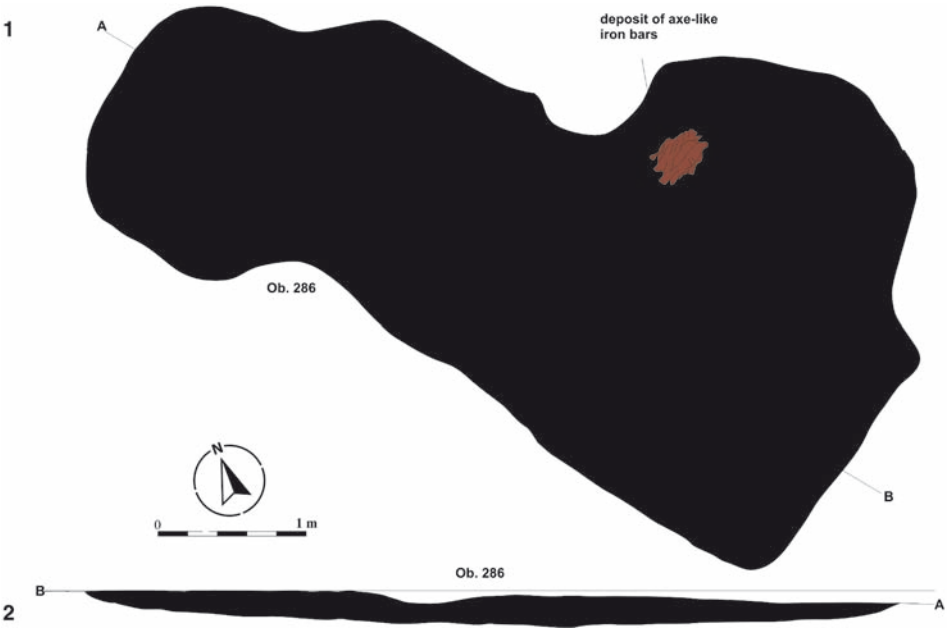

Fig. 5. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship. Horizontal layout of feature 286. 1 – horizontal layout; 2 – cross-section (drawing A. Lach)

ing was about 80 cm wide (Ciesielski 2008, 288, fig. 2), we would have to assume that the feature was as wide as 405 cm. It follows that the floor area of the interior would have been as large as 23 m² and consequently, its shape would have to be conceived as more functional than previously thought. Regarding the post hole found near the semi-circular annex (Feature 291), it can be assumed that the post could have been a structural element as well, *i.e.*, a type of pillar or element supporting the corner of a roof. In folk architecture, there are multiple buildings documented as having such corner arcades (Prokopek 1976, phot. 4, phot. 42).

Considering the shape of Feature 286 as well as the characteristics of its filling, we can include it with some probability to the so-called tub-shaped features that occur 14 times within the discussed settlement. They are characterized by a variety of shapes of their floor plans but they are absolutely no isolated phenomena (Parczewski 2003, 204). On many sites where such tub-shaped features were discovered, their fillings were intensely black, saturated with charred wood and tar, and were therefore similar to the analyzed filling from Brzesko. Due to this characteristic, it is not possible to localize potential spots of continual fires or hearths within the features, which is accentuated in the literature on the subject (see Pawlak and Pawlak 2008, 14, 15). Oval tub-shaped pits are found in early medieval settlements, especially in central and northern Poland (Ciesielski 2008). Several

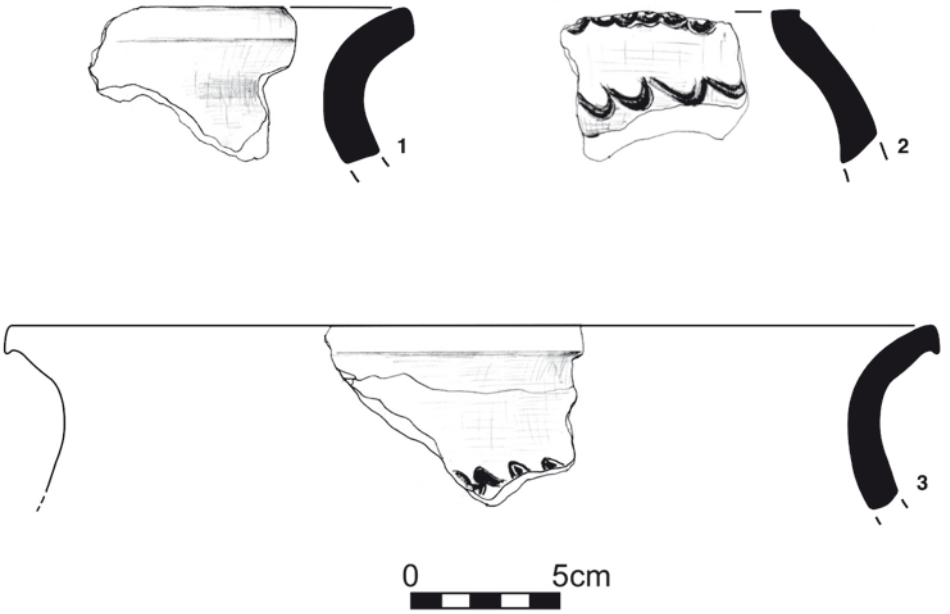

Fig. 6. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship.
Fragments of pottery from feature 286 (drawing B. S. Szmoniewski)

such pits were discovered relatively close to the analyzed settlement, in Wojnicz, Site 48, Tarnów county (Wojenka 2010, 151-153, plates. 1-14) as well as in the stronghold of Zawada, Tarnów county (Cetera 1994, 256, 257, pl. 2: 7, 8, 9). There is no consensus in the literature regarding the interpretation of the oval-hollowed features discussed here. Some researchers are inclined to associate them with lightweight architectural structures such as wattle and daub construction with posts, chalet structures with gabled roofs (Chudziak 1996, 110-112), wattlework (Cetera 1994, 256, 257), or wattlework without posts (Foltyn 1998, 42). Others interpret them as trims of log cabin constructions, sometimes also supplied with a kind of strip footing (Foltyn 1998, 42; Ciesielski 2008). One of the arguments in support of this is the fact that wattle structures provide poor protection against the cold during the autumn-winter season in contrast to solid log cabins, which seems quite valid in our opinion (Ciesielski 2008). It cannot be excluded that buildings of wattle construction were used temporarily during some seasons as outbuildings, for example for storing crops or for dwelling during the summer season (see Cetera 1994, 256).

At the moment, it is hardly possible to determine the function of such a feature. It can be assumed that it was used as a place for iron processing while the lack of a hearth can be explained by a possible re-utilization of the building material to construct a new heating facility in another housing feature (Parczewski 1988, 53).

4. THE DEPOSIT OF AXE-LIKE IRON BARS FROM FEATURE 286 (Table 1, Figs 4, 7-13)

The most numerous category of iron products found on the site is represented by the deposit of axe-like bars (commodity currency) that was found inside Feature 286. It was unearthed as an irregular block, strongly bonded and covered with a thick layer of hammer scale indicating the impact of a secondary fire on the iron material. The deposit discussed here consisted of 38 axe-like bars which, after conservation and restoration, present various grades of preservation. Each of them was forged out of iron in the form of an oblong axe with a short blade. Lugs on a part of the items form beards. The preserved length of the bars ranges from 18.2 cm and 38.2 cm, while most of the items are characterized by a length within the intervals from 20 to 30 cm (26 examples) and from 31 to 38 cm (11 examples). Their width ranges from 2.2 cm to 3.3 cm, and their height is from 2.7 cm to 5.5 cm. The weight is quite diversified ranging from 230 g to 780 g (Table 1).

The characteristic shape of the preserved fragments allows them to be classified as Lesser Poland-type bars, also called Vistula bars, variants A and B in E. Zaitz's classification (1988; 1990, 147-153, figs 5-12) and type IB according to D. Bialeková and V. Turčan's classification (2007, 155, fig. 9). They differ from both the Greater Moravian type and from the Piotrawin type (Rozmus *et al*. 2006, 109, fig. 6).

The parameters of the bars found in Brzesko are in part different from those of analogical products found in southern Poland, which are as follows: a) length from 27 to 41 cm, b) weight from 270 to 2200 g (Zaitz 1990, 161, fig. 14) but this difference must be the result of the state of their preservation and, in several cases, caused by the missing of a part of the lugs with the beards. In the light of discoveries of fragments of lugs with beards from the deposit in Szklarka near Kraków, we can see that the operation of cutting the parts off was intentional, and the bars thus prepared were directed to further processing (Szmoniewski and Rozmus 2022).

The distribution of bars of the Lesser Poland or Vistula type was limited to the Upper Vistula basin (Szmoniewski 2010; Szmoniewski and Rozmus 2022). Due to the number of items, the deposit found in the Okół region of Kraków deserves our special interest. It was laid in a rectangular pit of the parameters 108 × 210 cm and of a depth of about 100 cm which was dug in sand showing no additional anthropogenic traces. It was covered with earth obtained from a rampart built by the end of the 9th century. Into such a pit, about 510 bundles of bars were laid, the bundles including 3 to 15 examples, but most of them 7 to 9 examples. The deposit consisted of 4212 bars in total and its total weight was about 3630 kg. Most of the examples were forged out of one piece of metal whilst one-third of the total was made by welding together two pieces of iron different sizes. In some cases, items were made of several or a dozen metal pieces. Singular samples were found on Site 1 in the Nowa Huta-Mogiła district of Kraków and also, most probably, in Zwierzyniec another district of Kraków; this is indirectly suggested by a note about strange iron items discov-

Table. 1. Tabular summary of the iron ax-like bars from Brzesko, Site 16-17, Brzesko District. Lesser Poland Voivodeship

Inventory number	Dimensons (cm)			Weight (g)	Figure
	Length	Width	Height		
BRZ16/286/2/1	26.4	3.3	4.6	580	7: 1
BRZ16/286/2/2	38.2	2.6	5.5	760	7: 2
BRZ16/286/2/3	34.7	2.9	4	550	7: 4
BRZ16/286/2/4	27	2.8	5	510	7: 5
BRZ16/286/2/5	22.5	2.3	3.4	310	7: 3
BRZ16/286/2/6	30	2.9	4.5	640	7: 6
BRZ16/286/2/7	27.6	2.7	3.5	320	8: 1
BRZ16/286/2/8	34.2	2.2	4.5	430	8: 2
BRZ16/286/2/9	25.7	2.2	5	410	8: 4
BRZ16/286/2/10	25.7	2.3	3.5	520	8: 5
BRZ16/286/2/11	32.7	3	4	710	8: 3
BRZ16/286/2/12	25.4	2.3	3.5	350	8: 6
BRZ16/286/2/13	24.1	2.5	3.2	350	9: 1
BRZ16/286/2/14	27.1	2.4	4.7	330	9: 2
BRZ16/286/2/15	31.5	3	3.7	530	9: 4
BRZ16/286/2/16	18.2	2.4	2.7	230	9: 5
BRZ16/286/2/17	33.6	3.1	4	560	9: 3
BRZ16/286/2/18	34	3	4.3	780	9: 6
BRZ16/286/2/19	28.9	3	3.9	690	10: 1
BRZ16/286/2/20	30	2.9	3.4	440	10: 2
BRZ16/286/2/21	26.4	3	3	590	10: 4
BRZ16/286/2/22	26.4	3	3.3	490	10: 5
BRZ16/286/2/23	29	2.7	4	350	10: 3
BRZ16/286/2/24	29.4	3.2	4.5	480	10: 6
BRZ16/286/2/25	28.4	2.8	4	520	11: 1
BRZ16/286/2/26	32	3.1	4.5	590	11: 2
BRZ16/286/2/27	33.5	2.8	3.3	600	11: 4
BRZ16/286/2/28	28.2	2.4	4.1	470	11: 5
BRZ16/286/2/29	28	3.2	3.3	590	11: 3
BRZ16/286/2/30	22.2	2.6	3	410	11: 6
BRZ16/286/2/31	26.6	2.9	3.7	410	12: 1
BRZ16/286/2/32	31.2	3.3	4.4	660	12: 3
BRZ16/286/2/33	27.5	2.3	3	290	12: 4
BRZ16/286/2/34	28.8	3.1	3.7	670	12: 5
BRZ16/286/2/35	31.4	3	3.7	600	12: 2
BRZ16/286/2/36	29.6	2.8	3.6	550	12: 6
BRZ16/286/2/37	27	2.5	3.7	400	13: 1
BRZ16/286/2/38	29.5	3	2.8	586	13: 2

Fig. 7. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship.
1-6 – iron axe-like bars (photo M. Okoński)

Fig. 8. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship.
1-6 – iron axe-like bars (photo M. Okoński)

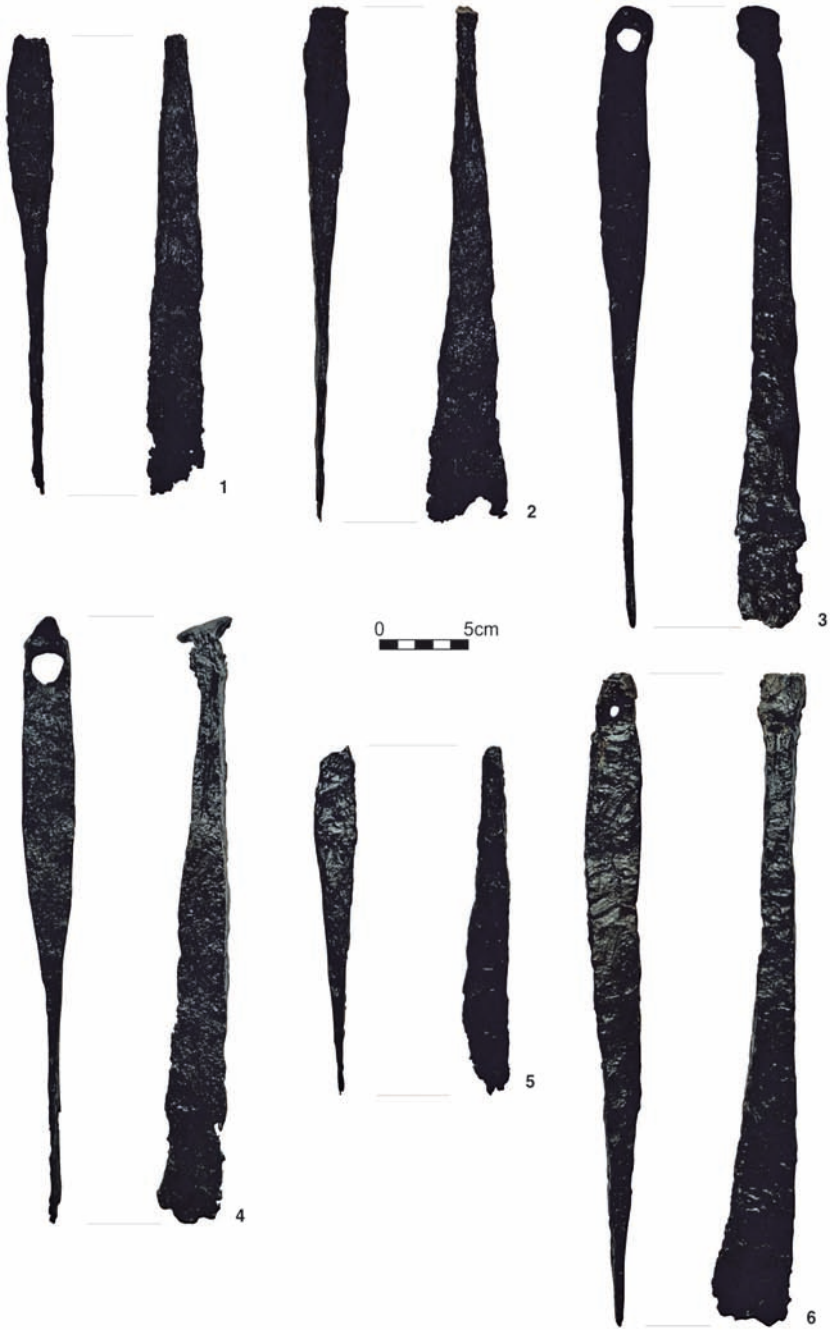

Fig. 9. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship.
1-6 – iron axe-like bars (photo M. Okoński)

Fig. 10. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship.
1-6 – iron axe-like bars (photo M. Okoński)

Fig. 11. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship.
1-6 – iron axe-like bars (photo M. Okoński)

Fig. 12. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship.
1-6 – iron axe-like bars (photo M. Okoński)

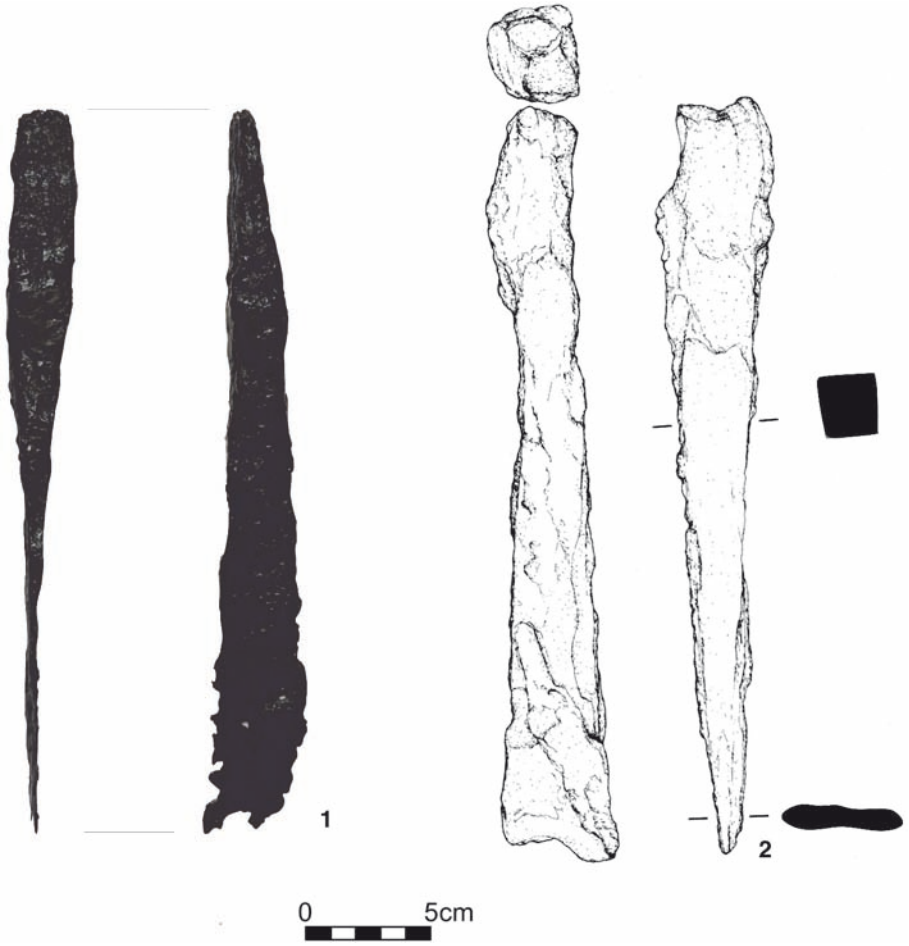

Fig. 13. Brzesko, Site 16-17, Brzesko District, Lesser Poland Voivodeship.
1-2 – iron axe-like bars (photo M. Okoński, drawing A. Lach)

ered in 1845 during construction work of a road leading up St. Bronisława Hill (Szmoniewski and Rozmus 2022, 51)

Regarding the number of fragments found in Brzesko, this is also quite unusual among the material from Lesser Poland because (apart from the deposits in Okół and the Szklarka valley) axe-like bars are mostly found in numbers ranging from 1 to 12 examples (Szmoniewski and Rozmus 2022, figs 1 and 2).

Undoubtedly, the discovery in Brzesko can serve as yet another piece of evidence for a high potential and equally high level of skills in processing iron by the inhabitants of Lesser Poland during the tribal phase of the Early Middle Ages.

5. AN ATTEMPT TO DETERMINE THE CHRONOLOGY OF FEATURE 268

Apart from the deposit of axe-like bars, Feature 268 revealed fragments of 13 pottery sherds of which three were the fragments of two vessels (Fig. 6: 1 and 3) and one fragment was decorated with two bands of multiplied curved lines (Fig. 6: 2). The remaining fragments were not decorated. Traces of top turning were observed in several cases within zones 2 (rim and neck) and 3 (rim-neck-collar) according to U. Maj's classification (1990, fig. 5). For the rest of the fragments, due to their degree of preservation and the lack of any distinguishing features, it is difficult to determine the extent of surface finish. According to the author's categorization (Szmoniewski 2024), mostly the earthenware type of group IV of raw material was used (hard structure, colour approximating to light brick-red, monochrome fractures, a medium temper of sand of grain size ranging from 0.1 cm to 0.2 cm, occasionally to 0.3 cm), a smaller quantity of examples of group II (hard structure, surface coloured dark brown to brick-red, bi-coloured and tricoloured fractures, temper of chamotte, sand and crushed stone of the grain ranging 0.3 to 0.4 cm). The least represented was group I (various grades of hardness, rough surfaces, grey-brown and brown colouring, monochrome and sometimes bicoloured fractures, tempers of crushed stone and thick grained sand reaching the grain size of 0.2-0.3 cm, less frequently grog, and silicates/mica).

Two rims found in the analyzed pit are not good landmarks for dating due to the considerably long timespan of their occurrences among early medieval artefacts from Lesser Poland. Because of this, in the documentation of the pottery evidence from the Brzesko site, they have been included in Type B5 – straight rims with the outer edges cut straight, and in Type D13 – rims indistinctly formed with the lower edge profiled (Szmoniewski 2024). Analogical rims are discovered in Lesser Poland with various frequencies. They display similarities to the rims of the ceramic vessels known from Kraków, especially to Type 4 included in the group of indistinctly profiled examples, and to Type 9 consisting of examples with edges that are not intensely profiled, with outer cuts. They are found in the layers dating from the middle of the 9th to the middle of the 10th century, up to its second half (Radwański 1968, 61, 62, figs 38, 39). In areas closer to the analyzed settlement, similar rims are known from features in the hillfort in Zawada near Tarnów, where such slightly profiled rims resembling those of Type 4 are discovered mainly in the complexes dated to the phase I of the hillfort's existence (2nd half of the 9th-1st half of the 10th century) as well as being sporadically found in phase II (2nd half of the 10th-10/11-1st half of the 11th century) while those analogical to Type 9 are found both in phase 1 and 2 (Okoński 1995, 59, fig. 7). On the other hand, in the settlement of Wojnicz, Site 48, similar rims have been included in Groups A (A4) and B (B4) (Wojenka 2010, fig. 139, 142 fig. 15). The period of functioning of this settlement is assigned to the 8th and maybe also to the beginning of the 9th century (Wojenka 2010, 148).

Summing up, in this complex archaic traits such as the lack of surface decoration, rims of group B5, the ceramic material of groups I and II, and more progressive traits such as the type of the rim belonging to group D13, the ceramic material of Group IV and surface decoration, are both present. Considering the analogy of the rims, this complex can be dated in the time between the middle of the 9th century to the beginning of the 10th century or its first half.

It should be stressed here that in the case of Lesser Poland, there is a lack of documented complexes that would contain axe-like bars along with any independent chronological indicators other than ceramics. Only in one problematic instance, in Pit 61/58 in the Mogiła settlement in the Nowa Huta district of Kraków, was a fragment of an iron item found that is interpreted as a part of an axe-like bar together with a spur similar to Type VB according to Darina Bialeková, so as a consequence of this, Jacek Poleski assumes that any finds of axe-like bars from Lesser Poland should be dated in line with Great Moravian analogies, namely in the time between the beginning of the 9th century and the middle of the 10th century (Poleski 1992, 37; Poleski 2019, 231).

6. EARLY MEDIEVAL SETTLEMENT AROUND SITE 15-16 IN BRZESKO (Fig. 14)

Settlement activities contemporary to the analyzed site where the deposit mentioned above was found had not been very intense. The earliest traces of settlement from the tribal phase of the Early Medieval Period are dated to the time as late as the 9th century. To map the distribution of settlements in the closest area, those contemporary to the analyzed early medieval settlement, a circle was drawn with a diameter of about 12 km, inside which the data from four sheets of the AZP survey maps were taken into account, namely from the sheets 104-62, 104-63, 105-62, 105-63). In the presented cartographic visualization, an aggregation of sites from the tribal phase is visible to be concentrated on the right bank of the Uszwica River and especially on two of its tributaries, the Grodna and the Jastwianka. In Okocim, *i.e.,* between the Uszwica and the Grodna, remnants of two settlements were documented (Sites 10 and 13) where numerous pottery fragments with simple, indistinctly formed rims and with the surface decoration of ornament of a multiplied curved line were found (Cetera and Okoński 1993a, plates 4 and 5). The hamlets together with the rest of the settlements localized around the hill of Bocheniec, Jadowniki Podgórne, Brzesko county (Sites 63, 64, and 65) presumably constituted a microregional settlement complex. Its centre was at the hillfort (Site 1) set atop the hill; the hillfort had the form of two segments on the plan of an elongated oval on the E-W line, with the parameters of 380 × 220 m and a surface area of about 6.8 ha (Jodłowski 1968; Żaki 1969; Leńczyk 1983, 20; Poleski *et al.* 2019). The chronology of the site is based on the analysis of a rather modest collection of pottery discovered during some small-scale excavations made in the last century, it is assigned to the 9th and 10th centuries (Poleski *et al.* 2019, 62).

On the left bank of the Uszwica and in the direct surroundings of the analyzed site, there are significantly fewer remnants of settlements from the later phases of the Early Medieval Period. Such remnants were documented in Jasień, Brzesko county (Sites 2, 3, and 9) as well as in Łazy, Brzesko county (Sites 29 and 54). Considering the finds of ceramic fragments, the functioning of these settlements can be assigned to the tribal phase

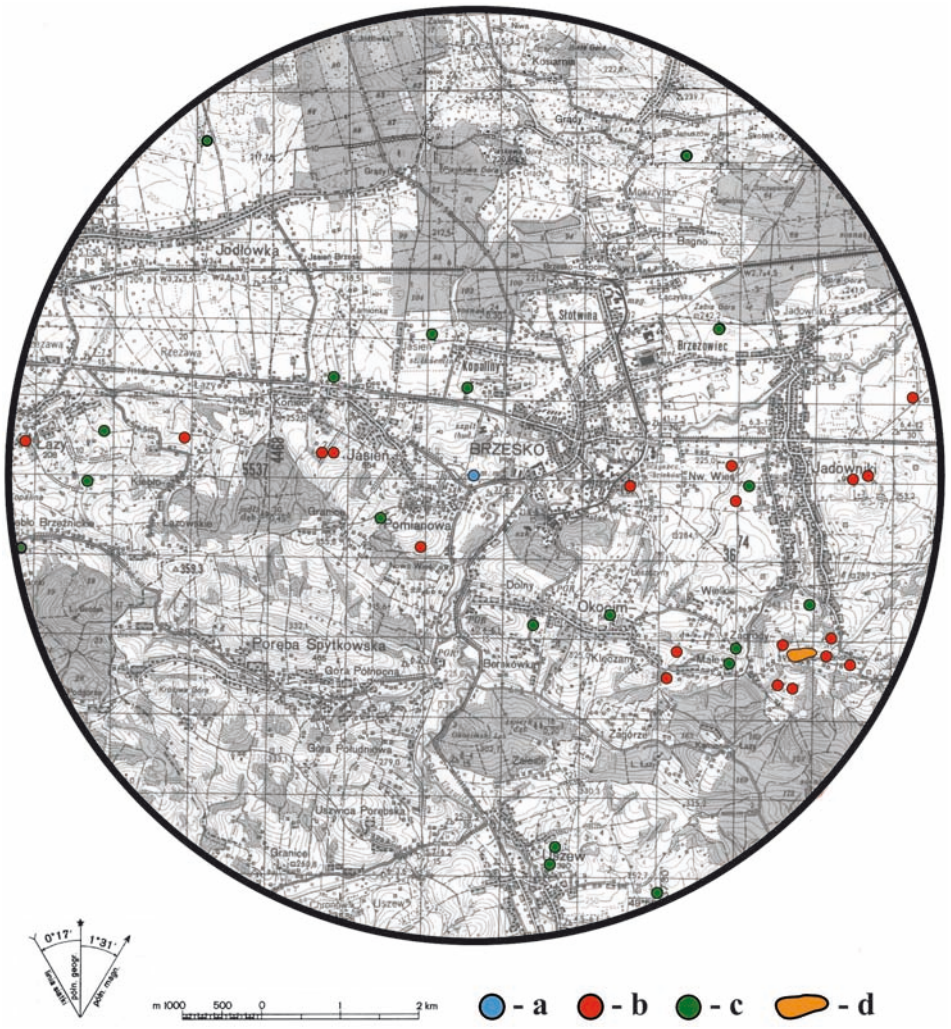

Fig. 14. Settlement pattern in the vicinity of the settlement in Brzesko, Site 16-17 (9th-11th century). A – Brzesko, Site 16-17, Brzesko District; b – the settlement; c – a single trace of the settlement; d – hillfort 'Bocheniec', Jadowniki Podgórne, Site 1. Polish Archaeological Record (AZP) sheets: 104-62, 104-63, 105-62, 105-63 (after Cetera *et al.* 1992; 1994; Cetera and Okoński 1993a and 1993b; drawing B. S. Szmoniewski)

and the early stage of state formation (9th-11th centuries) (Cetera and Okoński 1993a; Cetera *et al.* 1994).

This disproportion between the number of the right bank settlements and the number of the left bank settlements on the Uszwica can probably be explained, leaving the state of research aside, by the presence of a nearby defence structure – the hillfort of Bocheniec. This was the central place with other settlements surrounding it. The population inhabiting the settlements was probably obliged to raise, repair, and above all, to defend the hillfort in times of trouble. The hillfort was a part of the fortification system of the Vistulans' community, a tribal organization known from documents written in the 9th century, by the so-called 'Bavarian Geographer' among others.

7. THE AXE-LIKE BARS IN CENTRAL EUROPE DURING THE EARLY MEDIEVAL PERIOD – AN ISSUE OF POSSIBLE FUNCTIONS

The functions of axe-like iron bars are the subject of continuing discussions leaving the researchers specializing in Central Europe of the Early Medieval Period without any definite solution to date (*cf.*, Hájnik 2019). Initially, the bars were ascribed the role of household tools (*e.g.*, for splitting clay) (Hrubý 1955, 276-278), however, due to their shape and the poor quality of iron they were made of, this interpretation was later refuted (Pleiner 1963). Some researchers interpreted them also as semi-finished products for further processing to form tools (Piaskowski 1964, 133-140; 1980, 299, 300) or, as intermediate products being also a kind of currency or tokens, *i.e.* a medium of exchange (Sejbal 1960, 73-82; Pleiner 1961, 405-446; Adamczyk 2004). Additionally, they have ascribed some special magic properties (Novotný 1973, 275-280), and even thought to fulfill a similar ritual function as the obol of the deceased (Sejbal 1960, 73-82). More recent interpretations constitute a kind of compromise by which an axe-like bar had the function of part-processed material and at the same time served the function of being a social currency – the axe-like bar (commodity money) originated in the process of transforming an axe into a metal bar (Adamczyk 2004, 220).

In the case of Great Moravian axe-like bars, it is assumed that they were a kind of regional variant of primitive money – pre-coin currency, which could have been in circulation as a medium of exchange as credit tokens. Thus, the intrinsic value of axe-like bars must have been equal to, or higher than, the value of the iron commodity of which they were made (Hlavica and Bárta 2021, 12, 19). According to some, their prototypes can be seen in the pre-Christian ritual behaviour which had suppressed their practical use and replaced it with a symbolic role for the semi-finished axes, which then evolved into massive elongated axe-like bars. During subsequent stages, the increasing need to spare the material due to iron scarcity resulted in the gradual shrinking of their parameters, regard-

ing both their length and their weight, and finally, the stage of miniature bars was reached. Semi-finished axes, apart from their practical functions as tools and weapons, also served ritual functions as votive/consecrate deposits or as grave goods. Along with the evolution of the forms of the bars, their purposes also evolved. Thus, the big and the medium ones functioned within the sphere of social exchange where they could serve in many ways: as a gift, payment of bride-wealth, a bride token, or a wergild (blood money), while the small-sized ones functioned in the sphere of commercial exchange as element trade or payments. In the latter, due to the size reduction and, consequently, the decreasing value of the iron material used, their value was arbitrarily established and guaranteed by the issuing authority; at this stage, they started to be used as substitute tokens of general-purpose money within the Great Moravian economy (Hlavica *et al.* 2022, 327-331, figs 1 and 2).

Regarding their circulation in the territory of Lesser Poland, it must be stated that apart from one small axe-like bar of the Great Moravian type (lost) from Stradów, Kraków, a far-reaching standardization during the whole period of their usage can be observed (Figs. 15 and 16). In consequence, their interpretation must be rather different from the ones applied in the case of examples from Great Moravia. In Lesser Poland, their function should be associated with the sphere of social exchange; according to this, they should be seen as a kind of gift or offering being a semi-product but at the same time having a considerable value, both of the symbolic and of a material nature. Being so, the redistribution of axe-like bars started from a central place which in this case was located in Okół, Kraków, where the largest deposit of such items was placed as was already mentioned. Considering the accumulation of finds of axe-like bars in and around today's Kraków as well as the presence there of areas rich in bog iron and replete with forests supplying wood required for smelting, we can easily point to these areas surrounding Kraków and located in the upper Vistula basin as the most probable region of the production of the standardized axe-like bars. The process of their production was strictly controlled by persons in the ruling position at the central borough. Having been produced, the axe-like bars were subsequently taken away from the workshops where they had been stored. Representatives of smaller centres brought some local products to the central borough as a tribute to the person in charge, most certainly receiving something in exchange – and in this case, it must have been an axe-like bar, or bars (Szmoniewski and Rozmus 2022).

The settlement in Brzesko is located within a circle of a 65 km radius with Kraków's Okół in its centre as it has been determined based on the occurrence of deposits of axe-like bars (Szmoniewski and Rozmus 2022, 63, 64, fig. 2); this circle overlaps with the regions occupied by the Vistula, and according to the new perspective it stretched from the northwest to the southeast (Liwoch and Szmoniewski, in print). Additionally, south of Brzesko, in the hillfort in Zawada Lanckorońska dated in the time between the 8th to 10th centuries, several axe-like bars were found (Poleski 2013, nr kat. 55 CD, 142), therefore it is more than probable that the Brzesko settlement can be regarded as one of the important points in the network of exchange between the northwest and the south, a network including the

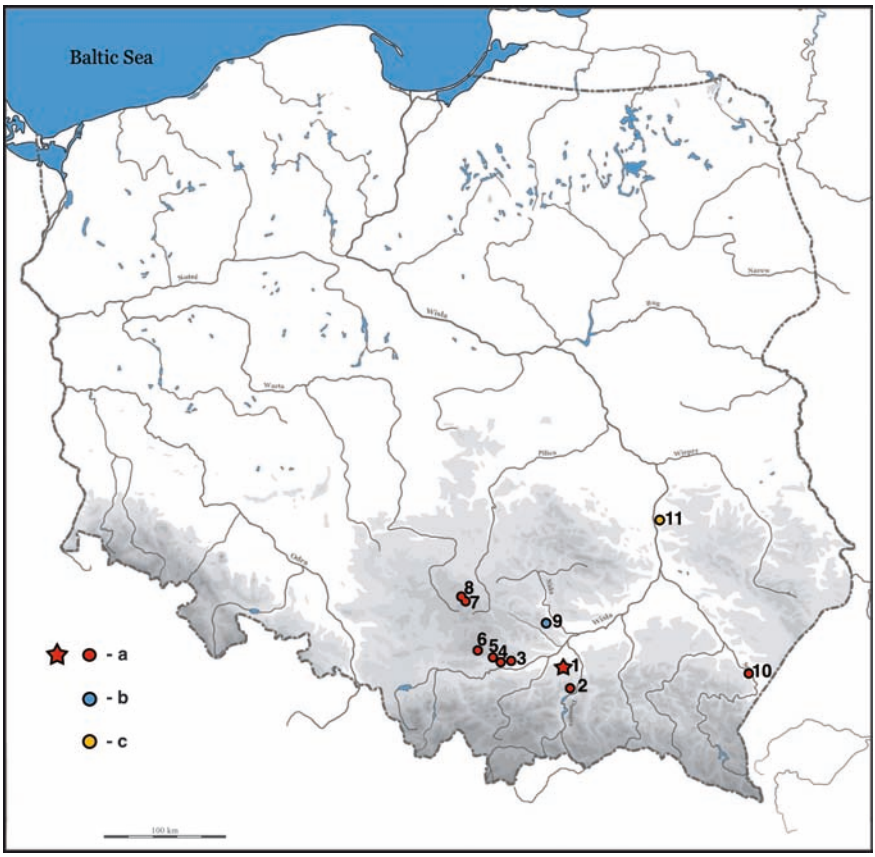

Fig. 15. Distribution of Iron axe-like bars from Poland: 1 – Brzesko, Brzesko District; 2 – Zawada Lanckorońska, Tarnów District; 3 – Cracow-Nowa Huta – Mogiła, Cracow District; 4 – Cracow, suburbium Okół, Cracow District; 5 – Modlnica, Cracow District; 6 – Szklarka Stream valley, Cracow District; 7 – Kroczyce (unpublished); 8 – Kostkowice, Góra Słupsko, Zawiercie District; 9 – Stradów, Kazimierza Wielka District, Poland; 10 – Radymno, Jarosław District; 11 – Piotrawin, Lublin District, a – Lesser Poland/Vistulan type; b – Great Moravian type; c – Piotrawin type (drawing B. S. Szmoniewski)

Vistula and the Dunajec rivers (Szmoniewski and Rozmus 2022, 64). Consequently, we cannot exclude that the axe-like iron bars alongside iron bowls and blades were the traditional form of raw material portions or units in which iron was traded (Urbańczyk 2001, 52).

It is worth mentioning here that the finds of axe-like bars inside any dwelling place or outbuildings are extremely rare. One deposit consisting of 101 such items was discovered above a damaged inhumation grave (3/62) dug into one of the corners of a sunken-floored building (3/62) excavated in Bíňa, southwestern Slovakia (Habovštiak 1966, 454, fig. 17). The deposit is assigned to the time horizon when hillforts in southwestern Slovakia were already disappearing due to the invasion of Hungarians by the end of the 9th century and

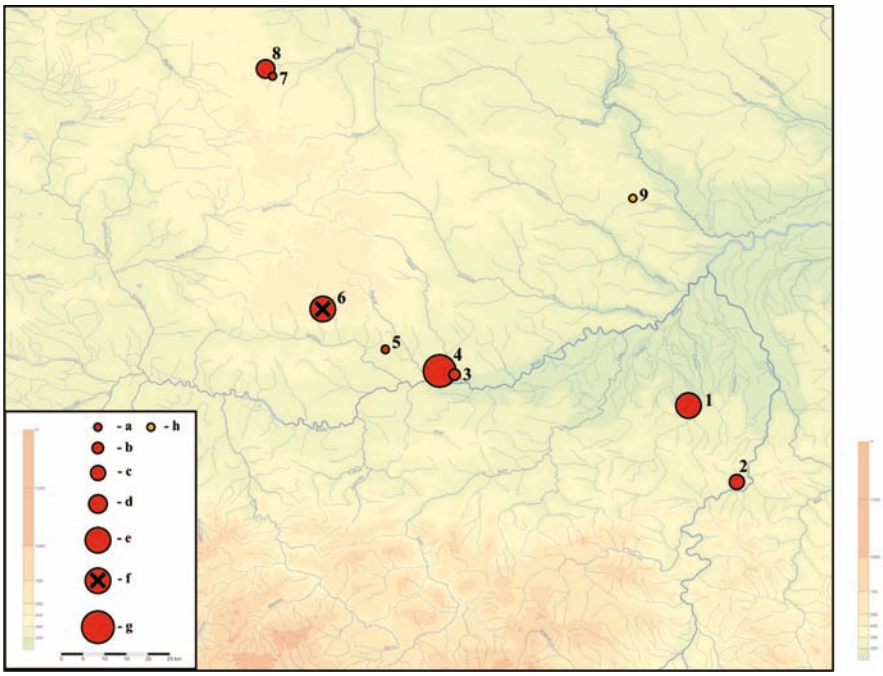

Fig. 16. Distribution of Iron axe-like bars in Lesser Poland (Numbers as Fig. 14): a-e and g – Lesser Poland/Vistulan type; f – the assemblage of intentionally cut axe-shaped bars of Lesser Poland/Vistulian type; h – Great Moravian type; a – 1 pc; b – 2 pcs; c – more than 5 pcs; d – more than 10 pcs; e and f – more than 35 pcs; g – 4212 pcs. (drawing B. S. Szmoniewski)

in the beginning of the 10th century. However, in this case, it was most probably deposited after the sunken-floored building had ceased to function as a dwelling place. In recent times, on the hillfort of Bojná-Valy also located in southwestern Slovakia, a hoard has been found inside a furnace cleaned from ashes in another sunken-floored building (Feature 44); the hoard includes 37 axe-like bars and it is interpreted as 'possessions hidden in times of trouble'. The point of time of its deposition is determined to be after the year 908 which corresponds to the time when the hillfort of Valy was sacked and burnt (Robak 2021, 52, 57, fig. 5; Pieta and Robak 2023, 107, 108, fig. 44: 3-6).

8. CONCLUSIONS

The settlement in Brzesko, which can be dated to a period between the 9th and the first half of the 10th century, constitutes an important point on the map of the early medieval settlement in this part of Lesser Poland. The uncovered features revealed, and especially the tub-like ones, correspond to similar discoveries known from the nearby areas, namely

to those in the settlement in Wojnicz of a somewhat earlier but still overlapping chronology, and with those from the Zawada hillfort. Special importance can be given to the discovery of the deposit of axe-like iron bars made at the end of the 1970s in Kraków's Okół. Earlier finds of axe-like bars such as the find from the hillfort of Zawada Lanckorońska located south of Brzesko represented the cluster type of finds or were just stray finds. The second deposit find made after the one from Kraków was discovered in the Dunajec basin in Brzesko, a site to the north of Veľká Lomnica on the Poprad River in Slovakia. These locations can indicate an important communication trail which at the same time could have been the commercial route connecting the Vistulans' community with their southern neighbours. Despite its apparent peripheral character within the tribal region of the Vistula, the settlements in Brzesko, were, therefore, a significant element in the net of contemporary settlement structures.

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