

ARKADIUSZ MICHALAK*, LESZEK GARDEŁA**

**BODZIEC OSTROGI Z LUBNIEWIC.
SŁOWIAŃSKA KULTURA ELITARNA
W ZACHODNIEJ CZĘŚCI PAŃSTWA PIASTÓW**

**THE SPUR GOAD FROM LUBNIEWICE, POLAND.
SLAVIC ELITE CULTURE IN THE WESTERN PART
OF THE PIAST STATE**

Abstract. This paper focuses on a copper-alloy goad discovered in 2017 in Lubniewice in Lubuskie Voivodeship, Poland. An interdisciplinary analysis has shown that the goad was originally part of a lavishly decorated copper-alloy spur representing a type known from high-status West Slavic graves (e.g. Lutomiersk, Ciepłe) and settlement sites. Because objects of this kind are made of costly material, and because expert skills were required to produce them, it is argued that they were commissioned by a very specific group of people who used them as “material markers” of their distinct cultural and religious identity. It is not unlikely that the owners of such spurs were members of the elite retinue of the Piasts who played important roles on and off the battlefield.

Keywords: Western Slavs, Viking Age, spurs, Slavic mythology, elites, equestrian equipment

INTRODUCTION

There is no doubt that among many early medieval societies spurs were endowed with symbolic significance. For this reason, these essential elements of equestrian equipment were sometimes ornamented with intricate designs referring to the sphere of pagan beliefs. Examples of this form of artistic and ideological expression can be seen on the terminals of the Frankish spur from R. Zsille’s

* ORCID: 0000-0002-8406-8787; Muzeum Archeologiczne Środkowego Nadodrza w Zielonej Górze z siedzibą w Świdnicy, ul. Długa 27, 66-008 Świdnica, arche9@wp.pl.

** ORCID: 0000-0003-2913-4718; Institut für Germanistik, Vergleichende Literatur- und Kulturwissenschaften, Abteilung für Skandinavistik, Universität Bonn, Am Hof 1d D-53113, Bonn, Deutschland & Institut for Arkeologi, Historie, Kultur- og Religionsvitenskap, Universitetet i Bergen, Øysteinsgate 3, Postboks 7805, 5020 Bergen, Norge, leszek.gardela@daad-alumni.de.

private collection which are formed into the head of an elongated snake-like animal with bulging eyes (Zsille and Forrer 1891, p. 7, Taf. III: 6). Also the goads of the eleventh-century Anglo-Saxon spurs from Everleigh, Chevington, Race Hill, Rotherfield Grays, Soberton, Taynton and Mundford in England were formed into the heads of beasts (Williams 2002, p. 115-116; Gurney 2006, p. 120). Zoomorphic motifs also appear on the terminals of the eleventh-twelfth century spurs from Icklingham, Marnhull, Pakenham and Perth (Williams 2002, p. 116-118), as well as on the spur terminals from the German Reich dated to the eleventh-twelfth centuries (Engel 1912-1914, p. 327, Abb. 1; Jaeger 1937, p. 114, Abb. 2; Koch 1982, p. 77, Abb. 12; Schulze-Dörrlamm 1995, p. 54, Abb. 24; Kind 2001, cat. 122).

In light of the latest archaeological discoveries and interpretations, however, it appears that not only Western European spurs carried symbolic meanings. In a series of recent studies, Leszek Gardela, Kamil Kajkowski and Zdzisława Ratajczyk have argued that West Slavic copper-alloy spurs of the Lutomiersk type also had special significance (Ratajczyk, Gardela and Kajkowski 2017; Gardela 2018; Gardela 2019a; Gardela 2019b; Gardela, Kajkowski and Ratajczyk 2019).

This paper examines a new example of a copper-alloy goad, which originally belonged to a Lutomiersk type spur. A series of specialist analyses have been conducted to explore the chemical composition of this object and the methods of its manufacture, providing interesting insights into the practical applications of spurs of this kind. In addition to presenting the results of specialist analyses, this paper also seeks to shed more light on the historical and cultural context of the goad's discovery.

The artefact in focus was found on an unploughed field, northeast of Lubniewice (southwest of Gorzów Wielkopolski, Lubuskie Voivodeship), about 350 m north of the road running to Osieck, just behind the last buildings at the edge of the town (Fig. 1). This area is situated on an elevation near the Lubawka River valley. Hoping to find out more about the artefact, the discoverer of the find published it on an internet forum, and in February 2017 a photo of the object appeared on the social-network site Facebook. Thanks to the efforts of Dr. Leszek Gardela and Dr. Arkadiusz Michalak, the artefact was obtained from the finder several months later. In April 2019, a survey of the location of its discovery was undertaken, but no other portable finds or archaeological features were found. By the decision of the Provincial Conservation Office in Zielona Góra, the goad from Lubniewice was included in the collections of the Archaeological Museum of the Middle Odra River Area in Zielona Góra, based in Świdnica, Poland.

DESCRIPTION AND TYPOLOGICAL ATTRIBUTION OF THE GOAD

The goad from Lubniewice was cast from copper-alloy. It has the form of a tapered bar, oval in section, 5.6 cm long and 0.9 to 0.5 cm thick (Figs. 2-3).

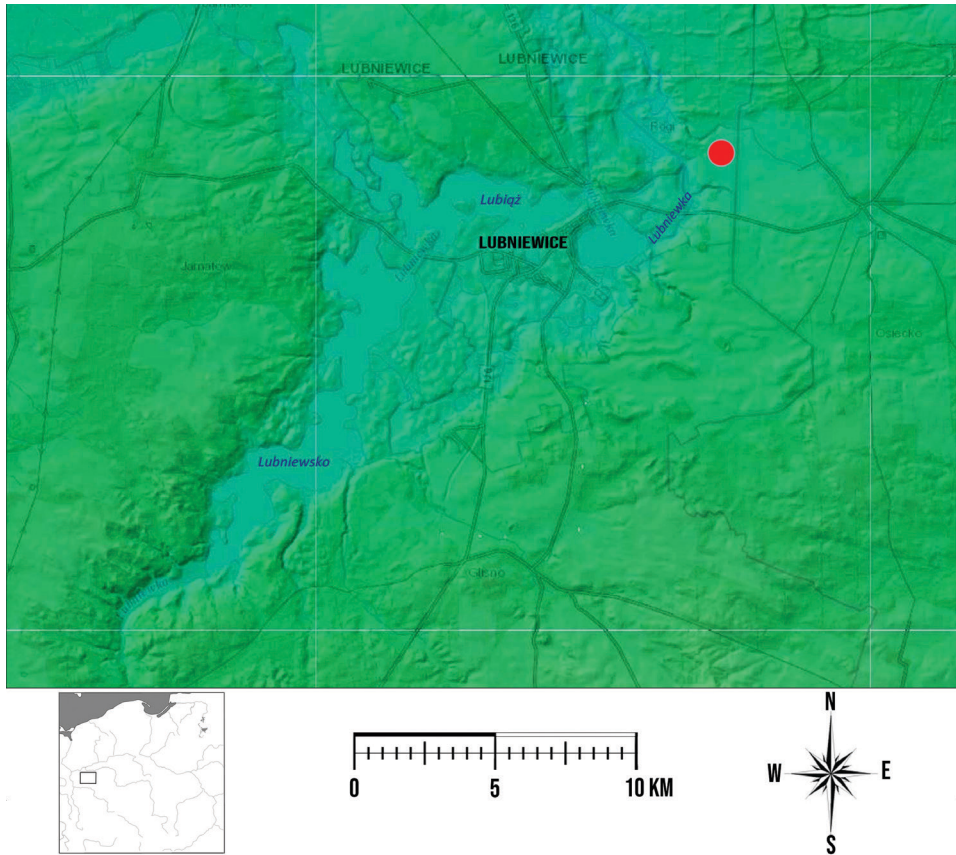


Fig. 1. The location of the find. Map by Arkadiusz Michalak

A short distance from the thicker end of the bar there is a ball-shaped knob (1.0 cm in diameter) with an interlace motif. Next to the ball, on the upper edge of the goad, a horse-like figure with the head turned backwards is depicted (1.6 cm long, 1.7 cm high). The other end of the goad is decorated with three encircling grooves. The copper-alloy goad has an iron tang by which it was originally attached to the main body of the spur; an X-ray photograph confirms that the tang/core passes through the full length of the goad (Fig. 4). Judging by the position of the thicker end of the goad, it may be surmised that it was aligned at an angle of around 15° upwards in relation to the spur's arms. The weight of the artefact is 18.652 grams.

Given the very specific constructional features and characteristic overall appearance, it is beyond doubt that the goad from Lubniewice originally formed part of



Fig. 2. Photograph of the goad from Lubniewice. By Arkadiusz Michalak

a copper-alloy spur lavishly adorned with animal motifs. As mentioned above, artefacts of this kind are labelled by some scholars as “spurs of the Lutomiersk type” (Wadyl and Skvorcov 2018) or “zoomorphic spurs” (e.g. Ratajczyk, Gardela and Kajkowski 2017; Gardela 2018; Gardela 2019a, p. 228; Gardela 2019b; Gardela, Kajkowski and Söderberg 2019; Gardela, Kajkowski, Ratajczyk and Wadyl 2019).

Examples of such copper-alloy spurs – in various states of preservation and sometimes very fragmented – are known from several graves discovered in early

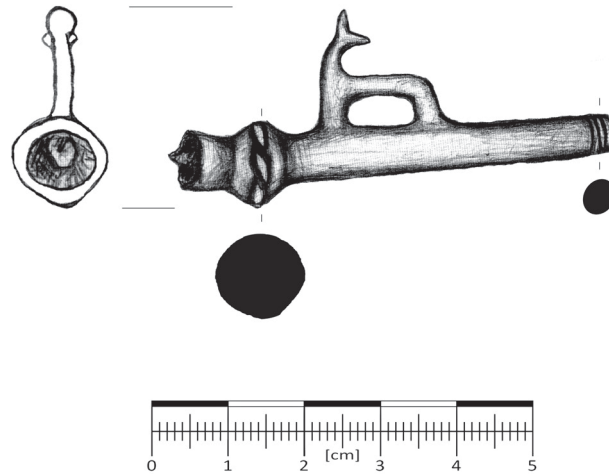


Fig. 3. Drawing of the goad from Lubniewice. By Monika Kaczmarek

medieval cemeteries located in the area of today's Poland, including Cerkiewnik, Ciepłe and Lutomiersk (Jażdżewski 1951, p. 119-120; Nadolski 1959, p. 58-59; Abramowicz 1962, p. 127; Ziemińska-Odoj 1992; Wachowski 2001, p. 158, 169; Wachowski 2006; Ratajczyk 2013a; Ratajczyk 2013b; Ratajczyk, Gardęła and Kajkowski 2017; Gardęła 2018; Gardęła, Kajkowski and Ratajczyk 2019; Gardęła, Kajkowski, Ratajczyk and Wadył 2019). Regardless of the fact that some of the contents of these graves are poorly preserved as a result of cremation or later post-depositional disturbance, it is clear that the deceased and/or the people who buried them belonged to the highest strata of society. This is implied not only by the sheer presence of the luxurious spurs within the funerary assemblages, but also by the fact that the graves in question contain weapons, elaborate riding gear (e.g. decorative bridles, stirrups, saddles), drinking vessels (buckets and ceramic pots) and various other utensils.

It should be noted that in addition to the zoomorphic spurs from funerary contexts, one analogous spur (lacking the goad) was discovered during excavations of an early medieval stronghold at Wrocław Ostrów Tumski in Lower Silesian Voivodeship, Poland (Kaźmierczyk and Lasota 1979; Wachowski 2006). Furthermore, two goads, similar to the Lubniewice find and likewise detached from the spurs, have recently been found at Skegrie in Skåne, Sweden (Söderberg 2014, p. 76; Gardęła, Kajkowski and Söderberg 2019) and at Kumachevo in the Sambia Peninsula, Russia (Wadył and Skvorcov 2018). A buckle, probably belonging to

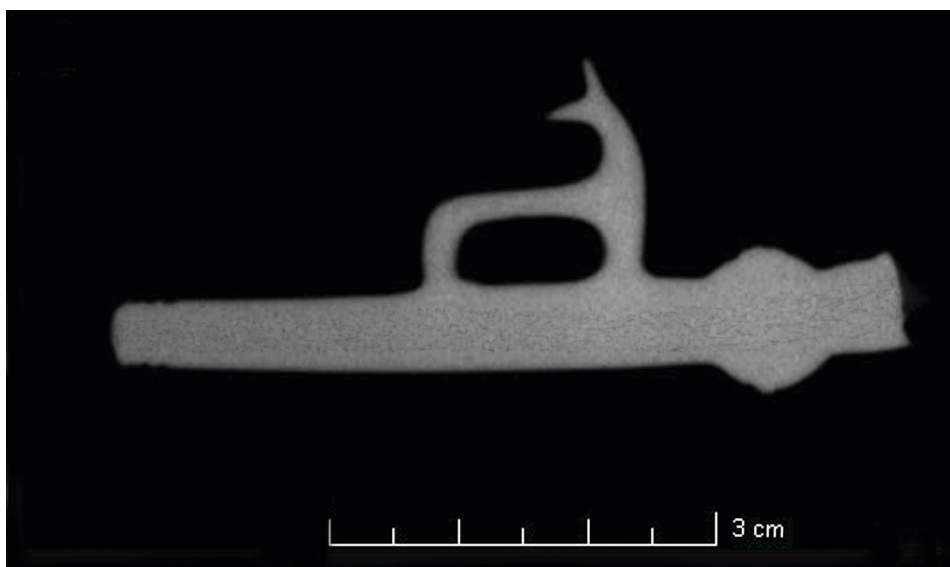


Fig. 4. X-ray of the goad from Lubniewice. By Arkadiusz Michalak

a spur of the same type was recently found at Schwerin in Mecklenburg-Vorpommern, Germany (Konze and Ruchhöft 2017).

So far, the best preserved and complete examples of the Lutomiersk type spurs have been found in the cemetery at Cieple (Fig. 5). Based on those discoveries, we know that the arms of the spurs in the top view are U-shaped. In the side view the line of the arms is straight, and the goads are raised at a circa 15° angle (a constructional feature also confirmed by the find from Lubniewice). The arms of the spurs take the form of a narrow band with an arched profile and heart-shaped terminals to which leather straps were originally fastened with two rivets (Ratajczyk 2013a); they are decorated with a narrow and convex rib with a groove on both sides. Rows of circles embedded within a wavy line are portrayed on both sides of that rib. The upper edges of the arms are ornamented with an openwork motif showing three animals facing the terminals. On the lower edge of each arm, approximately beneath the last animal (counting from the goad), there are two rectangular loops with a small suspended bell (Ratajczyk 2013b, p. 289-299)¹. The surviving decoration of the leather straps, which were used to attach the spurs to

¹ Other than the finds from Cieple and Lutomiersk, the only examples of spurs with suspended bells come from Speyer in Germany and from the collections of the Römisch-Germanisches Museum in Cologne, but the exact contexts of their discovery remain unknown (Jaeger 1937, p. 111, Abb. 2; Steuer 1979, p. 366, Abb. 4, Taf. 57:4). On typological basis, the German examples can be dated to the twelfth-thirteenth centuries.



Fig. 5. One of the complete Lutomiersk type spurs from grave 42/2009 at Ciepłe. Photo by Jarosław Strobin. Used by kind permission of Zdzisława Ratajczyk

the shoes, is also very elaborate – each strap originally had two fittings in the form of winged animals with long necks. These fittings served as fasteners for the tongueless buckle, which is also decorated with animal motifs, representing two snakes facing each other. In addition, the fastening strap has a ‘ring’ which serves as a loop holding the two ends of the strap in place. The very end of the strap also has a fitting with zoomorphic ornamentation, resembling a bird-like creature with a long beak.

The form of the spurs, although exceptionally decorative, can be classified as type I and variant 2 in Zofia Hilczerówna’s typology (1956, p. 22-34) and as variant c1 according to Krzysztof Wachowski’s classification (1984, p. 30-40), which allows dating them to the second half of the tenth century. It is probable, however, that they were used all the way into the first half of the eleventh century. Spurs of this type resemble the finds included in Anne Pedersen’s (2014, p. 102-104) group B dated to the second half of the tenth-eleventh century. In Norbert Goßler’s (1998, p. 494-510) classification, the Lutomiersk type spurs would belong to type A.I.a dated to the tenth-eleventh century.

Due to its distinct form, the goad from Lubniewice definitely stands out from the examples of spurs typical of Hilczerówna’s group I.2. In considering the constructional and decorative details of spur goads in general, it is noteworthy that various kinds of balls and knobs appear quite early in history; for example, on late Roman spurs (Zsille and Forrer 1891, Taf. II), and are common on the early

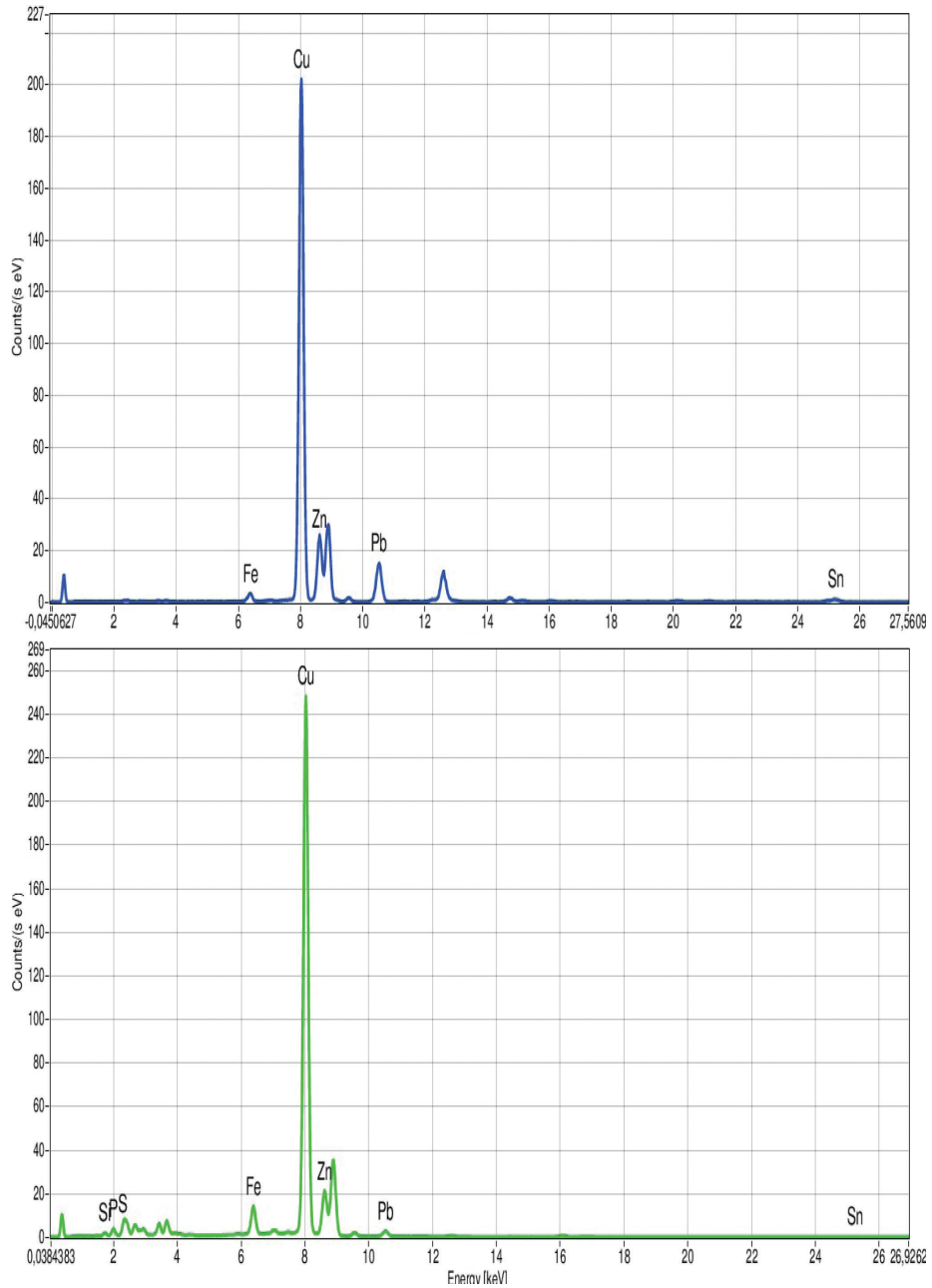


Fig. 6. XRF analysis of the goad from Lubniewice. By Patryk Bielecki and Arkadiusz Michalak

medieval spurs as well (Goßler 1998, 643, Taf. 1, Kind 2002, Abb. 3; Pedersen 2014, Fig. 4.14). Balls or knobs appear less frequently in the middle part of the goad or at its base; examples include the spur AIIIa from the stronghold Groitsch, Ldkr. Borna, Germany dated to the tenth-eleventh centuries (Goßler 1998, 643, Taf. 5:97), as well as the finds from the strongholds at Łęczycza and Moraczewo, Poland (Kara 2009, Fig. 77:4-5), and the spur from a grave from Kasmusmølle, Ullerup parish, Denmark from the tenth century (Pedersen 2014, Pl. 46:4). A 'ball' also adorns the base of a tenth-century spur goad from Varivode, Šibenik-Knin county in Croatia (Kind 2002, Abb. 3:19). This feature appears to have been a widespread motif and thus cannot play a decisive role in determining the chronology or geographical origin of a particular spur type.

Likewise, the three encircling grooves at the end of the goad from Lubniewice is something that is commonly noted in the decoration of early medieval spurs. Among others, this motif appears on the goads of spurs from Oldenburg and Köllmichen, Germany dated to the eleventh-century (Goßler 1998, Taf. 2:29, 33).

SPECIALIST ANALYSES

In order to analyse the chemical composition of the goad from Lubniewice, a sample was taken from the lower part of the 'ball'². An XRF analysis showed that it was made of an alloy the main component of which, apart from copper (Cu – 67.9503%), was lead (Pb – 14.8736%) and zinc (Zn – 6.7872%). The total share of other elements did not exceed 10% (S – 2.0,803%, Sn – 2.8672%, P – 1.8887%, Fe – 1.4607%, Si – 2.0901%) (Fig. 6).

Because specialist studies of other Lutomiersk type spurs have not been conducted yet, we are compelled to refer to comparative analyses of copper-alloy hooked spurs from the eighth-ninth century. The material of the tested samples from Pień and Słodkówka in Poland, however, is characterised by a much larger share of copper, significantly exceeding 80% and over 10% of zinc (Janowski 2016; Janowski 2017, p. 184). In both cases, the raw material is *aurichalcum*, i.e. an alloy displaying properties of bronze, in which the source of zinc is not the metallic elements but its ore – calamine. The examples originating from the Czech Republic, Moravia and Slovakia have a lot more diverse composition (Profantová 2016, tab. 1). Most often they have 80% copper and tin (usually over 15%), but only a fraction of zinc ranging from 0.1-2.9% (most often 0.3-1.6%) (Profantová 2016, tab. 1). There are no spurs among these items with a composition similar

² The analysis was carried out by Dr. Patryk Bielecki from the Poznań Science and Technology Park of the Adam Mickiewicz University Foundation in Poznań. The surface composition of the artefact was analysed using a Bruker S1 Titan LE XRF spectrometer equipped with a rhodium anode lamp (Rh) and a silicon drift detector. The measuring instrument uses X-ray fluorescence technology with wave dispersion (WDXRF).

to the goad from Lubniewice. Moreover, the tenth-eleventh century spurs that have a chalice-like goad (Menzlin type) from Klim and Pasym (Kind 2002, Fig. 6) are made of brass containing over 80% copper and 11% of zinc as well as lead (1.6 and 4.55%), tin (2.31 and 1.28%) and about 1% iron, and so they cannot be used as parallels.

With regard to chemical composition, the most similar artefact to the goad from Lubniewice is the bronze spur from Radachówka in Masovia, Poland, dated broadly from the eighth to the eleventh century, which was made using a high-lead content tin-zinc-lead bronze containing 76.31% copper, almost 15% lead, about 6% zinc and more than 2% tin (Hensel 2003, Table 1). No direct connection between the two artefacts can be seen, however. On the other hand, the sword scabbard chape from Łekno had a very similar composition of copper alloy (67.43%), zinc (14.54%), lead (9.72%) and tin (1.01%) (Wyrwa and Janowski 2014, p. 329).

In light of the above, we feel that to be able to draw any further conclusions, it is necessary to examine the remaining examples of copper-alloy spurs of the Lutomiersk type and to intensify analyses of other early medieval elements of West Slavic equestrian equipment. Perhaps, however, one should not expect any patterns in the selection of raw material for making such objects, as has recently been suggested in the analysis of the cheek piece from Ostrów Lednicki (Banaszak and Tabaka 2017, Table I).

It is highly probable that the goad from Lubniewice was made in two stages. In the first stage the iron core was forged, and was then placed in a casting mould. The second stage of production involved pouring metal into the mould with the intention to obtain the final highly decorative form of the object. A similar technique was used in the production of iron-bronze spurs with a chalice-like goad (Kind 2002; Hensel 2003).

The use of iron (a material more flexible than bronze) to connect the goad with the main body of the spur strengthened its structure and made it more flexible, which enabled riding the horse without fear of hurting the animal. Furthermore, using a goad with an iron core covered with bronze would have given the animal a very precise signal without causing too much pain.

Specialist research on the chemical composition of the goad from Lubniewice clearly shows that we are dealing with a fully functional and technologically advanced product. This is an important counterargument to the views of earlier scholars who considered the Lutomiersk spurs to be only used in 'parades' (in fact, some scholars literally called them *ostrogi paradne* or parade spurs). It is beyond doubt that these were luxury objects of a very sophisticated form, which only individuals of exceptional status and prestige could afford to own, but our analyses show conclusively they could be effectively used in military endeavours.

The complex technological features and the remarkably broad geographical distribution of copper-alloy zoomorphic spurs (and their fragments) strongly suggest that the people to who these objects originally belonged were members of a very

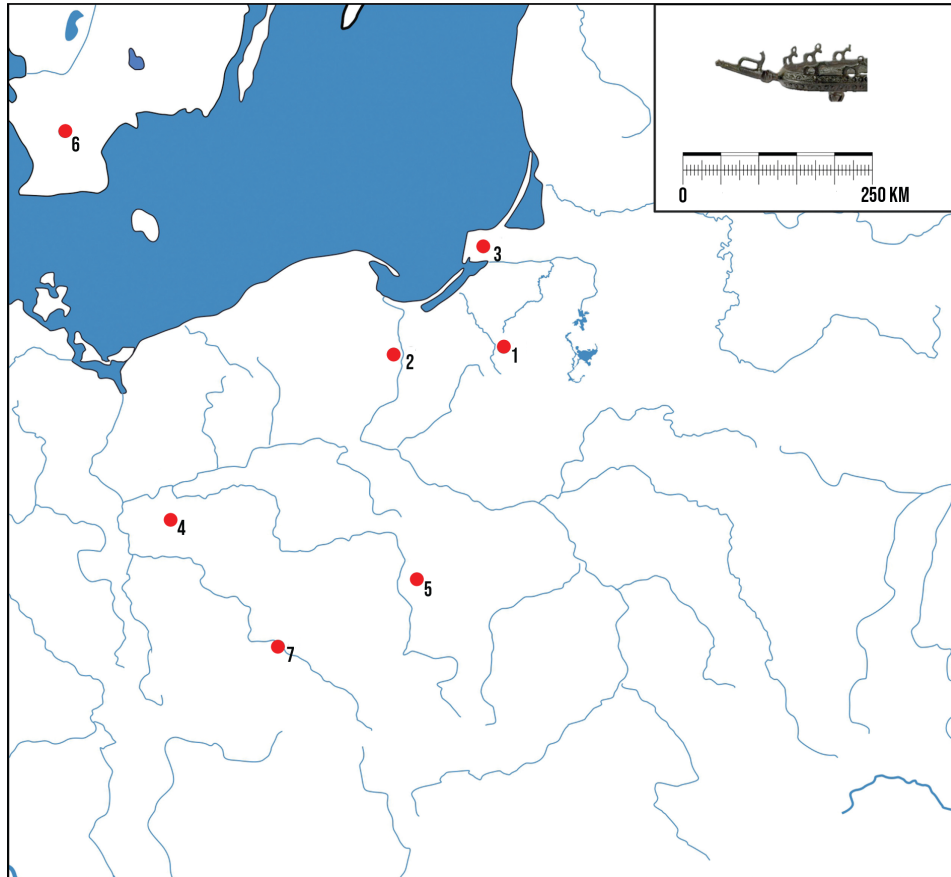


Fig. 7. Distribution of the Lutomiersk type spurs and their fragments

1 – Cerkiewnik, Olsztyn District, Poland; 2 – Cieple, Tczew District, Poland; 3 – Kumachevo, Zelenogradsky District, Russia; 4 – Lubniewice, Sulęcın district, Poland; 5 – Lutomiersk, Pabianice District, Poland; 6 – Skegrie, Skåne, Sweden; 7 – Wrocław-Ostrów Tumski, Wrocław district, Poland. The copper-alloy buckle found at Schwerin, Mecklenburg-Vorpommern, Germany, which probably belonged to a Lutomiersk type spur, is not included here. Map by Skvorcov, Wadył 2018 and edited by the authors

mobile group operating both within and outside the remits of the emerging Piast state (Fig. 7). Before we expand this thought further, however, a few remarks must to be made about the turbulent and somewhat controversial history of the spurs' interpretations.

SPURS OF THE LUTOMIERSK TYPE: A CONTROVERSIAL HISTORY
OF RESEARCH AND RECEPTION

The first four examples of copper-alloy spurs with zoomorphic decorations were found in the 1940s in two separate graves in the early medieval cemetery at Lutomiersk in Central Poland³. In view of the graves' rich contents, including weapons, equestrian equipment, drinking vessels and other small objects, many scholars interpreted them as belonging to foreigners or mercenaries who had come to the area of Poland from Eastern Europe, Asia or Scandinavia. A close and critical reading of the first publications on Lutomiersk (Jażdżewski 1951; Nadolski 1959) clearly shows the fallacy of such views, and it is now evident that the real basis for the idea of foreign provenance of the people from Lutomiersk was simply that the grave contents seemed, to the scholars who interpreted them, too unusual and too rich to have been West Slavic.

Although it is indeed true that in the late 1940s the copper-alloy spurs from Lutomiersk were unlike anything that had been discovered in Poland before, we must acknowledge the fact that at that time research on West Slavic material culture and funerary practices was still at a nascent stage. Together with the misleading conviction about the lack of animal style in West Slavic art, all this gave support to the idea that Lutomiersk was a burial ground of foreigners who were laid to rest with exotic objects which they had brought from distant places. In view of the above and in line with the principles of culture-historical archaeology, it felt natural for scholars of the 1940-1960s to look for the provenance of the spurs outside of Polish lands. In their attempts to 'prove' their foreign origin, some researchers even went as far as to suggest that the spurs were stylistically similar to objects from the Urals (e.g. Nadolski 1959, p. 59; Abramowicz 1962, p. 127).

Although all arguments linking the spurs with foreign cultural milieus were purely conjectural and without *any* solid grounding, the idea that they were non-Slavic objects (and consequently that the people they were buried with were foreigners) strongly influenced scholarly opinions on later discoveries of analogous copper-alloy spurs and other luxurious elements of equestrian equipment. The interpretations put forward by Jażdżewski (1951), Nadolski (1959)⁴, Abramowicz (1962)⁵ and Kostrzewski (1962)⁶, who linked the spurs and their owners with Varangian/Rus immigrants or mercenaries, held strong in Polish archaeology for many years, in effect casting a thick veil of misinformation over this fascinating category of finds.

³ Grave 5 was a cremation grave and grave 10 was an inhumation. For more details about their contents, see Jażdżewski 1951.

⁴ Nadolski (1959, p. 58-59) thought the spurs were made somewhere in the Eurasian steppes "probably in their western Black Sea-Ural part".

⁵ Abramowicz (1962, p. 127) thought the spurs were made in Rus or somewhere in the Urals.

⁶ Kostrzewski (1962, p. 221) thought the spurs were made in Rus.

In agreement with the former views of Jażdżewski and Nadolski, the fragmented copper-alloy spur found in 1977 at Ostrów Tumski in Wrocław was interpreted by Józef Kaźmierczyk and Czesław Lasota (1979) as an object of foreign provenance. When over a decade later Włodzimiera Ziemińska-Odoj (1992) discovered a cremation grave with an identical copper-alloy spur at Cerkiewnik in Warmia in northeast Poland, she was likewise hesitant to associate it with Western Slavs. Although she refrained from articulating her opinion in a clear way, it may be deduced from the tone of her article that she thought the object was of foreign manufacture (Ziemińska-Odoj 1992, p. 142-143).

In 1993, the Poznań-based archaeologist Michał Kara (1993, p. 40) took a different stance and interpreted the spurs from Lutomiersk as objects originating from Sweden and, consequently, suggested that the people buried with them had come from Scandinavia, perhaps in their role as mercenaries. In 2001, Krzysztof Wachowski agreed with Kara's view that the spurs were of Scandinavian origin, but he failed to provide solid evidence to support it. Again, as in the case of earlier interpretations suggesting Varangian or Rus provenance of these finds, the arguments for the spurs origin in Scandinavia were purely impressionistic and lacked a convincing source-critical foundation. In his brief paper, Wachowski stated that similar spurs had been found in Denmark (Wachowski 2001, p. 158)⁷, but did not provide *any* references to support this claim. In another article from 2006, Wachowski referred to a spur from Denmark (again, without mentioning the exact place of its discovery) which, he claimed, was similar to the finds from Lutomiersk. Upon closer inspection, the Danish spur he probably had in mind – discovered in grave 2 from Nørre Longelse 2 in Langeland (Brøndsted 1936, no 89; Sellevold, Hansen and Jørgensen 1984, p. 92; Pedersen 2014b, p. 80 and plate 19)⁸ – does

⁷ „Dalsze okazy (fragmenty) ostróg odkryto w Polsce północno-wschodniej i w Danii, co zdaje się przemawiać na korzyść skandynawskiej genezy tych zabytków” / “Further examples (fragments) of spurs were discovered in northeastern Poland and in Denmark, which speaks in favour of the idea of the Scandinavian origin of these finds” – cited after Wachowski (2001, p. 158), translated by Leszek Gardela.

⁸ Grave 2 from Nørre Longelse in Langeland, Denmark was discovered in 1926. Unfortunately, there is no information about the position of the artefacts and the grave's construction; we only know that it was an inhumation. According to the osteological analysis of the surviving bone remains, the deceased individual was a man aged 45-50 years at death. His grave contained a sword, a pair of iron spurs, two iron stirrups (with strap mounts), an iron horse bit, fragments of another similar horse bit, an iron hook, two copper-alloy mounts and three domed gilt copper-alloy mounts, four iron harness buckles, a set of copper-alloy scales and a box, fragments of a copper-alloy bowl, fragments of a wooden bucket with iron hoops, a small iron buckle, a whetstone of slate, a bone pin, a fragment of an iron awl, casket mounts, iron fragments and four or five rivets, as well as fragments of leather, down, and silk. Given the specific contents of the grave (including a bucket and a copper alloy bowl), which have parallels among some of the rich chamber graves from the Polish area (e.g. Janowski 2015; Błaszczuk 2018), it is possible to put forward a hypothesis that this was a (chamber?) grave of a person originating from the West Slavic area. The fact that the grave was found in Langeland, an island where Slavic presence is well-attested through archaeological evidence, adds even more credence to this view. The only way to obtain further information about the provenance of the deceased person is to conduct DNA and isotopic analyses of the surviving osteological remains.

not display *any* typically Scandinavian stylistic traits and its overall design is very unusual. It might as well be the case that this particular object is actually a foreign “import”, possibly even from the West Slavic area. The hypothesis of its foreign (i.e. non-Scandinavian) provenance is further supported by the fact that none of the other goods found in this particular grave bear diagnostically Scandinavian traits.

Discussions on the Lutomiersk type spurs continued in later years but the interpretations did not change significantly; while some Polish scholars still held the opinion that the spurs were of Rus manufacture, others claimed that they originated from Scandinavia (Grygiel 2014, p. 698) or alternatively from Baltic lands (Wołoszyn 2010, p. 312). Interestingly, when the Lutomiersk spurs were discussed by scholars from other countries, they were regarded as Slavic (e.g. Brather 2008, p. 328-329; Rohrer 2012). Only Norbert Goßler (2013b, p. 176; 2014, p. 19) saw them as having Baltic traits.

The main and most glaring problem with all these interpretations is the fact that *none* of the above-mentioned Polish scholars were able to point out direct analogies to the Lutomiersk type spurs in Rus or Scandinavia. They also failed to demonstrate convincingly that the various stylistic features of these objects had parallels in Rus or Scandinavian art. This comes as no surprise, since there is absolutely *nothing* in the design or decoration of the spurs that is even vaguely reminiscent of artistic motifs typically found in Viking Age Scandinavia or Rus (on Scandinavian Viking Age art and its characteristic features, see for example, Graham-Campbell 1980; Williams, Pentz and Wemhoff 2013).

In light of the above, it is fair to say that all former assumptions regarding the allegedly foreign provenance of the Lutomiersk type spurs were purely conjectural and without solid source-critical foundations. The following facts can help illustrate the basis for these misconceptions:

- In the 1950-1960s (that is in the period when the debate on Lutomiersk type spurs was particularly heated), scholarly understanding of West Slavic material culture (especially of objects made of ferrous and non-ferrous metals) was very limited. With some exceptions (e.g. Żak 1959), Polish scholars were convinced that Western Slavs did not have zoomorphic art and this led them to seek the provenance of objects decorated with animal motifs outside of Slavic lands.
- The idea of Rus provenance of the spurs (and of the people they were buried with), advocated by several Polish scholars, was mainly based on an uncritical reading of textual sources. By forcefully trying to piece together medieval written accounts (e.g. *Povest' vremennykh let* or *Primary Chronicle*) with archaeological material, it was argued that the people buried at Lutomiersk were political refugees from Rus or mercenaries and/or foreign members of Bolesław Chrobry's retinue (*družyna*).

- Most scholars who argued for a Scandinavian origin of the Lutomiersk type spurs had only a cursory understanding of the material culture of Viking Age Scandinavia. It is evident from the works they cited that their basic (and sometimes only) source of reference was Holger Arbman's two-volume monograph on the Birka cemeteries (Arbman 1940; Arbman 1943). It is noteworthy that nothing like the Lutomiersk spurs is known from Birka or from Central Sweden generally. The punchline is the fact that Holger Arbman, who personally visited Lutomiersk in 1949 (at the time when the site was being excavated), clearly expressed the opinion that none of the finds discovered there were of Germanic provenance (Abramowicz 2010, p. 300; Gardęła 2019, p. 247-248).

Academic debates on the purpose⁹ and provenance of the Lutomiersk type spurs (and consequently on the cultural origin of the people they were buried with) started to take a new direction soon after Zdzisława Ratajczyk (2013a; 2013b) made a remarkable discovery in an early medieval cemetery at Ciepłe in Eastern Pomerania, Poland. One of the chamber graves from this site (grave 42/2009) held the remains of an adult man buried with completely preserved Lutomiersk type spurs on his feet. The man was also accompanied by a richly decorated sword (Jan Petersen's type Z), a spearhead, and a whetstone. At his feet, a large bucket had been placed, as well as a pair of stirrups and an iron horse bit, probably forming part of a bridle. In her preliminary articles concerning this spectacular discovery, Zdzisława Ratajczyk (2013a; 2013b, p. 293) was very careful in stating her opinion about the cultural provenance of the individual from grave 42/2009 and about the origin of the spurs. However, in 2017, together with Leszek Gardęła and Kamil Kajkowski, she published an article suggesting that the spurs were West Slavic and that they possessed rich symbolic undertones referring to pre-Christian cosmological ideas (Ratajczyk, Gardęła and Kajkowski 2017). These revisionist views have recently met with positive responses from other Polish and international scholars (e.g. Błaszczak 2018; Wadyl and Skvorcov 2018), and while the details of the interpretation of the spurs as "models of the Slavic cosmos" might require some revisions in the future, it now feels justified to associate these finds with the West Slavic cultural milieu (e.g. Gardęła 2018; Gardęła 2019a, p. 246-254; Gardęła 2019b; Gardęła and Kajkowski forthcoming; Gardęła, Kajkowski and Ratajczyk 2019; Gardęła, Kajkowski and Söderberg 2019).

As demonstrated above, an open-minded deconstruction of the historiographic circumstances in which previous interpretations of the Lutomiersk type spurs were

⁹ Because the examples of copper-alloy spurs from Lutomiersk, Wrocław Ostrów Tumski and Cerkiewnik were fragmentarily preserved and lacked the goads, many scholars believed these objects to have been decorative "saddle mounts" (e.g. Jażdżewski 1959; Nadolski 1959, p. 58-59; Kostrzewski 1962, p. 221; Ziemińska-Odoj 1992, p. 142; Kara 1993, p. 40; and, to some extent, Wołoszyn 2010, p. 312). This view was ultimately rejected after the discovery of the spurs from the cemetery at Ciepłe (Ratajczyk 2013b).

put forward, together with a source-critical reassessment of the contexts of the spurs discovery, additionally supplemented by a detailed survey of artefact collections held in archaeological museums outside Poland (in Denmark, Norway, and Sweden) and consultations with international scholars¹⁰, show unequivocally that there are absolutely no grounds to maintain the thesis that these objects are of foreign (i.e. non-Slavic) provenance. West Slavic origin of the spurs is additionally supported by a range of recent discoveries of other categories of objects displaying similar stylistic traits and probably referring to the same complex of ideas (Gardela and Kajkowski forthcoming).

ANIMALS IN WEST SLAVIC EARLY MEDIEVAL ART

Over the last fifty years, the rapid development of Central European archaeology has substantially nuanced our understanding of West Slavic material culture. The discoveries of new strongholds and settlements, together with detailed investigations of graves and their rich furnishings, as well as specialist examinations of stray finds made of ferrous and non-ferrous metals, all show that West Slavic material culture was far more sophisticated than the scholars of the 1940-1960s believed it to be. It is now beyond doubt that, similarly to their Germanic and Baltic neighbours, Western Slavs produced objects with intricate zoomorphic designs (Kajkowski 2017; Posselt and Szczepanik 2017; Gardela 2019b). These items often come in the form of jewellery typically made of silver and copper-alloy, but animal motifs can also be observed on high-status military and equestrian equipment (Gardela 2018; Gardela 2019b; Gardela, Kajkowski and Ratajczyk 2019; Gardela, Kajkowski, Ratajczyk and Wadyl 2019). While this is not the place to discuss the vast corpus of these finds in detail (see Gardela and Kajkowski forthcoming), it is significant to point out that the dominant species of animals employed in West Slavic art are horses, birds, cattle and snakes – these are *exactly* the kinds of animals that are depicted on the copper-alloy spurs of the Lutomiersk type discussed in the present article.

What was the meaning of West Slavic animal art? The answer to this question is not straightforward, and to discuss this topic in a comprehensive way would require much more space than is available here (see Kajkowski 2017; Posselt and

¹⁰ Papers providing arguments for the West Slavic provenance of the Lutomiersk type spurs were presented by Leszek Gardela at major international conferences in e.g. Ribe and Copenhagen (The 17th Viking Congress 2017), Caen (Norman Worlds 2017), Stavanger (Horses, Moving 2018) and Bern (EAA Annual Meeting 2019). Kamil Kajkowski presented similar arguments about the West Slavic provenance of the spurs at conferences in e.g. Szczecin (2018), Wolin (2018), Pruszcz Gdański (2018) and Wrocław (2018). The argument about the West Slavic provenance of the spurs was also sustained after a discussion with a group of Swedish, Norwegian, British, German and Danish scholars during the III International Interdisciplinary Meetings “Motifs through the Ages” organised in December 2017 at the West Cassubian Museum in Bytów, Poland.

Szczepanik 2017; Gardęła, Kajkowski and Ratajczyk 2019; Gardęła and Kajkowski forthcoming). Nevertheless, in light of extant medieval texts and ethnographic sources, there are strong reasons to believe that *all* these different animals (i.e. horses, birds, cattle and snakes) played significant roles in pre-Christian beliefs of Western Slavs.

A number of written sources inform us that horses were closely associated with the pagan gods Sventovit and Triglav; these animals were held in the gods' temples to serve prophetic roles (e.g. Urbańczyk 1991; Szyjewski 2003; Gieysztor 2006; Ruchhöft 2016). Birds were likewise connected with the supernatural and with the Slavic idea of the soul (Posselt and Szczepanik 2017). Cattle were associated with the chthonic god Weles/Triglav whose cult was widely spread all across the Slavic world (Uspieński 1985). And finally, snakes (sometimes with additional wings) seem to have been of particular importance for the Slavs, as is demonstrated by their prominent role in folklore (Perls 1937; Tomiccy 1975; Tomicki 1974). Using images of all these different creatures to decorate high-status early medieval objects may have served to manifest distinct cultural and religious identities of their owners. In this way, these items became 'material markers' of Western Slavs, distinguishing them from other cultural groups in early medieval Europe (for a comparative study of warrior identity and the formation of Viking Age warbands, see Raffield, Greenlow, Price and Collard 2016; see also Gardęła and Kajkowski forthcoming).

In view of the above, we believe it is justified to propose an argument that the people who used copper-alloy spurs with zoomorphic decoration were fully aware of their symbolic content and its wider implications. It is therefore highly unlikely that the spurs would have served as mass-produced objects intended for trade. Instead, we argue, they were very personal belongings whose elaborate form served to emphasise the wealth, status, prestige, religion and (possibly) the special function of their owners in society. Because the process of producing the Lutomiersk type spurs required expert technological skills (as demonstrated in the analyses above), and because such spurs *always* come from graves furnished with weapons, it feels reasonable to suppose that they belonged to heavily armed equestrian elites, perhaps akin to the *loricati* known from Gallus Anonymus' *Cronica et gesta ducum sive principum Polonorum* (Bogacki 2007). It is highly probable that in the emerging state of the Piasts, the people using this kind luxurious equestrian equipment had important military, administrative and political duties to perform. This idea fits very well with the geographical distribution of the finds of the Lutomiersk type spurs (or their fragments), as they come from areas both within and outside the borders of the Piast state, suggesting that their owners were part of a very mobile group. Before we further elaborate on that thought, let us first take a closer look at the cultural, political and historical background of Lubuskie land, the area where the Lubniewice goad was discovered.

REGIO BARBARORUM. LUBUSZ LAND AS PART OF THE PIAST DOMAIN

Located at the north-western border of today's Poland, Lubusz Land became an expansion zone of the Piast state in the tenth century. Slavic settlement in this area concentrated in two latitudes: the northern one lay in the Toruń-Eberswald urstromtal, along the Noteć River and the lower Warta River, and the southern one lay in the Warsaw-Berlin urstromtal, along the central and middle Warta, the middle Obra and Obrzyca rivers and along the latitudinous run of the Oder River (Kurnatowscy 2006, p. 91). The well-developed water network of the western sections of both urstromtals enabled fairly easy movement between the Oder and the Elbe basins. A characteristic form of settlement in these areas (especially in the central and lower Obra and along the central Oder) in the early stages of the early medieval period were clusters of strongholds surrounded by open settlements (Kurnatowska and Łosińska 1996, map I). Forested uplands, with very scarce settlement, divided the more densely populated areas. The axes of these settlement zones constituted natural water communication routes in the east-west and north-south directions. The Piasts exploited this environment by skilfully adjusting the main colonization activities, investments in communication, and defence to the natural landscape (Kurnatowscy 2006, p. 92). The incorporation of the western part of Greater Poland within the Piast state resulted in the liquidation of a network of tribal strongholds which had formerly served the role of local centres of power. As a result, the strongholds by the middle and lower Obra, along the central Odra, and in Lubusz Upland lost their importance and fell.

The Piast expansion affected, among others, Grodziszczce near Świebodzin, where a small stronghold might have functioned in the second half of the ninth century. Numerous fragments of clay vessels of Tornow and Menkendorf types were discovered in the remains the stronghold's rampart dating from the mid tenth century (the chronology is based on the results of dendrochronological dating). Around the middle of the tenth century, the stronghold at Grodziszczce was expanded and its area increased to about 30 ares (3280 yards / two thirds of an acre). At that time, a rampart in a layered earth and timber grid construction was erected from oak laths (the youngest tree was felled in 951) placed on a sandy loam core. On the outside the rampart was reinforced additionally by coating in the form of small stones and clay, and had an additional 1-meter wide clay pad secured with a single row of large erratic boulders with a diameter of up to 70-80cm. The discovered remains of the rampart bear traces of a fire, an event which took place after 951 (Gruszka and Michalak 2018, p. 27, Fig. 11).

The lack of cultural layers from the end of the tenth- and the beginning of the eleventh century at Grodziszczce supports the theory that the Piasts took over and strengthened with ramparts only the strongholds that oversaw the most important land and water routes. That is why the stronghold at Santok, which was under their control from as early as the first half of the tenth century, and then trans-

formed into a powerful fortress in the 60-70s of the tenth century, maintained its status (Zamelska-Monczak 2010). In addition, the stronghold at Międzyrzecz continued to play an important role; it was controlled by the Piasts from the first half of tenth century, and additionally fortified in the second half of tenth century (Banach et al. 2015, p. 92). Likewise, the stronghold at Lubusz was taken over by the Piasts at the latest at the end of the tenth century (Fiedler 1999).

The strongholds located between Obrzańskie Lakes in Pszczew and at Krosno at the confluence of the rivers Oder and Bóbr (Dąbrowski 1984; 1998) also played strategic roles. They constituted an important defensive component of the land route established by the Piasts and leading from Gniezno through Poznań to Międzyrzecz, where the route divided into three branches: to central Germany through Lubusz and Brandenburg, to Pomerania through Santok, and to Lusatia and southern Germany through Krosno (Nalepa 1961, p. 13).

The arrangement of the western borderlands of the state by the Piasts, however, did not lead to intensive colonisation. In the light of previous studies, the areas around Santok, Międzyrzecz, and Lubusz were not densely populated in this period, and only previously inhabited areas were maintained. The most likely reason for this is that the Piasts considered these areas a buffer zone, protecting the centre of their domain against potential invasions from the west. The vast upland areas, impenetrable or difficult to pass due to the dense forest cover and additionally reinforced by natural obstacles in the form of rivers and lakes, were to play significant defensive functions (Kurnatowscy 2006, p. 92).

Apart from the military role, the strongholds at Santok, Międzyrzecz, and Lubusz probably also functioned as centres of ducal power, enabling control over the surrounding areas. To maintain order, groups of warriors were deployed to nearby settlements – a strategy which was also successfully applied in the heart of Greater Poland. It is possible that one of the three graves with stone constructions found before the Second World War at Bukowiec, near Międzyrzecz (Michalak and Kotowicz 2014) is evidence of this strategic endeavour. The grave contained a T-shaped axe which can be dated from the second half of the tenth to the second half of the eleventh century. Although the burial assemblage from Bukowiec is poorly recorded, we know from other well-examined archaeological contexts that axes of this kind served as high-status West Slavic weapons probably belonging to elite warriors with some administrative functions (e.g. Dobat 2009, p. 88-89; Gardela 2014, p. 29-32; Gardela 2015; Gardela 2019, p. 234-241; Gardela and Kajkowski forthcoming).

The significance of the area in the vicinity of Santok is also confirmed by the discovery of a pair of stirrups from the town of Górki, Gorzów county, representing Świętosławski's type II D (1990, variants 17-18) and dated to the second half of the tenth-first half of the eleventh century (Knorr 1936, p. 160; Nadolski 1954, p. 210). It is noteworthy that high-status military equipment such as these objects has only been found in the areas located close to important centres of power; there are no similar finds from other parts of Lubusz Land.

After the conversion to Christianity, former power centres became part of the Church's organisation. In the area of Międzyrzecz, a community of eremite ascetics, following the rule of St Romuald, was deployed with the intention to Christianise the north-western Slavic tribes (Łaszkiewicz 2003, p. 215, 233). Probably concurrently, the missionary centres at Santok and Lubusz began to emerge (Kurnatowscy 2006, p. 94).

The results of archaeological research of major strongholds in the western part of Greater Poland do not provide clear evidence of conflict related to the crisis that affected the Piast state in the 1030s, also known as "the pagan uprising" (Borawska 2013); the traces of fire in the destruction layers of the strongholds at Międzyrzecz and Santok are dated to a later period and to the very end of the eleventh century. Nonetheless, it seems that the ecclesiastical facilities functioning in these areas fell due to the crisis of the entire Church organisation of the Piast dynasty, and were not rebuilt in the second half of the eleventh century (Kurnatowscy 2006, p. 95; Banach et al. 2015, p. 144-145). The reasons for this are probably found in the fact that these areas lay outside the Piasts' jurisdiction. Historical and archaeological sources from the second half of the eleventh century clearly indicate that Międzyrzecz and Santok, as well as their neighbouring areas, remained under the political influence of Pomerania (Kurnatowscy 2006, p. 95), something that is additionally supported by the discovery of an eleventh-century grave situated on the left-bank of Santok, containing a spur with stylistic parallels in northern Germany (Michalak and Sinkowski 2017, p. 142).

The restoration of the Piast rule in Lubusz Land took place during the reign of Bolesław Krzywousty. In his *Chronicle*, Gallus Anonymus (1965, p. 82) recounts the siege of the stronghold at Międzyrzecz, an event whose results might perhaps be seen in the burnt layers from the end of the stronghold's sixth settlement phase, and in the discovery of the skeletal remains of a man with an arrowhead in the chest found in the stronghold's rampart (Gładykowska-Rzeczycka 2015; Kozłowski 2015) dated to the end of the eleventh century. Traces of fire damage were also discovered in the layers of Santok dated from the end of the eleventh century (Zamelska-Monczak 2010, p. 47-48). These events are probably connected with the deposition of a hoard of coins in the eleventh-twelfth century cemetery at Jordanowo near Świebodzin (Felis 2008; 2009; Osypiński 2010, p. 217; Osypińska and Osypiński 2012), comprising cross-denarii of types V, VI and VII, denarii of type I and II, several denarii of German dioceses and two Anglo-Saxon coins of Æthelred II. The youngest coins had been minted at the end of the eleventh century, which suggests that the hoard was deposited around 1090 (Osypiński 2010, p. 219; Murawska and Tabaka 2010, p. 37).

In the context of Bolesław Krzywousty's expedition to restore the Piast rule over Lubusz Land, Gallus Anonymus called these areas "land of the barbarians" (Gall Anonim 1965, p. 82). It seems that the term could be related to the very particular nature of this area, representing the lands lost from the Piast state, lo-

cated far from the centre of their power and on the periphery of their domain. The ambiguous term “land of the barbarians” could also be related to the still prevailing paganism in this area reflected in an unusual form of settlement – so-called “insular central places”, dating to the period from the eighth to the eleventh century. In light of the latest research conducted by scholars from the Institute of Archaeology of the University of Nicolaus Copernicus in Toruń, at least several places of this kind were established in Lubusz Land (Przełazy, Chycina, Lubniewice), (Chudziak, Kaźmierczak and Niegowski 2011, p. 173-177; Chudziak, Kaźmierczak and Niegowski 2016, p. 31-41, 81-116).

The most remarkable results have been provided in the course of the excavations of the island on Lake Paklicko Wielkie in Nowy Dworek near Świebodzin. It has been discovered that the island was entirely artificially built, with piers running around its parameter and a 150-meter bridge connecting it with the mainland (Chudziak, Kaźmierczak and Niegowski 2016, p. 164-186). The results of dendrochronological research have revealed that the piers were used in the 60s of the tenth century, and that the island and the bridge crossing were constructed in the years 873-874. Some scholars (Chudziak, Kaźmierczak and Niegowski 2016, p. 185) have observed similarities between Polish islands of this kind and Irish crannogs, the latter being traditionally interpreted as having domestic purposes, but also serving the additional role of shelter used in times of danger. Crannogs are also seen as a means to manifest social status and inheritance, legitimising power over a particular ancestral area (O’Sullivan 2000). It seems that the island at Nowy Dworek could have had similar functions. It is noteworthy that a log boat dated to the second half of the eleventh century or the beginning of the twelfth century (Chudziak, Kaźmierczak and Niegowski 2016, p. 185, Fig. 195) was found there, implying that the island continued to be used in later times as well.

There is no doubt that the reinstatement of Lubusz Land by Bolesław Krzywousty, combined with further expansion into the areas at the Noteć River, was for the Piast rulers a prelude to re-establishing their control over Pomerania (Kurnatowscy 2006, p. 95). The restored strongholds at Międzyrzecz and Santok became once again the centres of ducal power and castellanies. The organisation of the Church was also renewed. Essentially, the period of Bolesław Krzywousty’s reign witnessed a clear tendency to rebuild the north-western part of the state so that it would resemble the shape it originally had during the time of the first Piasts.

CONCLUSIONS

The goad from Lubniewice, originally forming part of a Lutomiernik type spur, is a small but remarkable object that can substantially enhance our understanding of the turbulent history of Lubusz Land in the early Middle Ages. Because the survey of the immediate context of its discovery has not yielded any other portable

finds or archaeological features, it is possible to suggest that the goad detached from the spur during a journey on horseback. The geographical distribution of the Lutomiersk type spurs and their fragments, extending from Silesia in the south, to Mecklenburg-Vorpommern in the west, to Skåne in the north and Sambia in the east, strongly implies that this luxurious riding equipment belonged to a very mobile and militarized group of people. In view of the overall design of the spurs, which as we have argued had profound symbolic undertones referring to Slavic pre-Christian beliefs, we are compelled to suggest that they belonged to warrior elites closely associated with West Slavic aristocracy. The exact role these people played is still shrouded in mystery – they may have been political advisors, diplomats, members of elite retinues or local chieftains who the Piast rulers deployed on various errands within and outside the remits of their domain. This interpretation fits very well with the cultural and historical background of Lubusz Land, a “land of the barbarians”, where old beliefs and customs held strong long after the formal adoption of Christianity. The small bells attached to the spurs’ arms, produced a jingling sound and manifested profound symbolic meanings (Malinowski 1993; Wrzesińska and Wrzesiński 2016), announcing that the rider was nearby and evoking an unsettling feeling of fear and respect.

ACKNOWLEDGEMENTS

The authors extend their warmest thanks to Marcin Kaczmarek, Kamil Kajkowski, Ben Raffield, Zdzisława Ratajczyk, Joseph Ryder and Sławomir Wadyl.

BIBLIOGRAPHY

Primary sources

Grodecki R., Plezia M. trans. 1965, *Anonim tzw. Gall. Kronika polska*, Seria I Biblioteki Narodowe, Nr 59, Wrocław–Warszawa–Kraków, Zakład Narodowy im. Ossolińskich.

Secondary sources

- Abramowicz A. 1962, *Results of Investigations of an Eleventh Century Cemetery at Lutomiersk near Łódź*, „*Archaeologia Polona*” 5, p. 123-132.
- Abramowicz A. 2010, *Koral pamięci. Wspomnienia, pamiętniki, dzienniki, notatki i listy archeologa. Dzieciństwo i młodość*, Łódź, Oficyna Bibliofilów.
- Arbman H. 1940, *Birka I: Die Gräber. Tafeln*, Stockholm, KVHAA.
- Arbman H. 1943, *Birka I: Die Gräber. Text*, Stockholm, KVHAA.
- Banach B., Chrzanowska-Wawrzyniak I., Kościński B., Kurantowski S., Urbańska-Łosińska A., Zamel-ska-Monczak K. 2015, *Gród i podgródzie wczesnośredniowieczne*, in: S. Kurnatowski, *Międzyrzecz*.

- Gród i zamek w wiekach IX-XIV*, Origines Polonorum VIII, Warszawa, Fundacja na rzecz Nauki Polskiej, p. 63-216.
- Banaszak D., Tabaka A. 2017, *Znalezisko brązowej poboczniczy wędzidla z Ostrowa Lednickiego*, „Studia Lednickie” 16, p. 69-79.
- Błaszczak D. 2018, *Między ziemią a niebem. Groby komorowe na obszarze państwa pierwszych Piastów*, Warszawa, Instytut Archeologii Uniwersytetu Warszawskiego.
- Bogacki, M. 2007, *Przemiany w wojskowości polskiej od połowy X wieku do 138 roku. Kształt i organizacja armii*, Toruń, Wydawnictwo Adam Marszałek.
- Borawska D. 2013, *Kryzys monarchii wczesnopiastowskiej w latach trzydziestych XI wieku*, Warszawa, Wydawnictwo Naukowe PWN.
- Brather, S. 2008, *Archäologie der westlichen Slawen. Siedlung, Wirtschaft und Gesellschaft im früh- und hochmittelalterlichen Ostmitteleuropa*, Ergänzungsbände zum Reallexikon der Germanischen Altertumskunde, Band 61, Berlin–New York, De Gruyter.
- Brøndsted J. 1936, *Danish Inhumation Graves of the Viking Age. A Survey*, „Acta Archeologica” 7, p. 81-228.
- Chudziak W., Kaźmierczak R., Niegowski J. 2011, *Podwodne dziedzictwo archeologiczne Polski. Katalog stanowisk (badania 2006-2009)*, Toruń, Wydawnictwo Fundacji Amicus Universitatis Nicolai Copernici.
- Chudziak W., Kaźmierczak R., Niegowski J. 2016, *Podwodne dziedzictwo archeologiczne Polski. Katalog stanowisk (badania 2011-2015)*, Toruń, Wydawnictwo Fundacji Amicus Universitatis Nicolai Copernici.
- Dąbrowski E. 1984, *Funkcje obronne przejść w rejonie ujścia Bobru za pierwszych Piastów*, in: L. Leciejewicz (ed.), *Obronność polskiej granicy zachodniej w dobie pierwszych Piastów*, Wrocław, Prace Komisji Archeologicznej Polskiej Akademii Nauk, 1, p. 69-80.
- Dąbrowski E. 1998, *Wczesnośredniowieczny poznańsko-zaodrzański trakt tranzytowy w świetle badań archeologicznych w Pszczewie (1956-1960)*, in: H. Kočka-Krenz, W. Łosiński (ed.), *Kraje słowiańskie w wiekach średnich. Profanum i sacrum*, Poznań, Wydawnictwo Poznańskiego Towarzystwa Przyjaciół Nauk, p. 246-261.
- Dobat A. 2009, *The State and the Strangers: The Role of External Forces in a Process of State Formation in Viking-Age South Scandinavia (c. AD 900-1050)*, „Viking and Medieval Scandinavia” 5, p. 65-104.
- Engel B. 1912-1914, *Neuerwerbungen der Sammlung Engel*, „Zeitschrift für Historische Waffen und Kostümkunde” 6, p. 327-329.
- Felis M. 2008, *Kilka uwag na temat dokumentacji terenowej. Na marginesie badań cmentarzyska w Jordanowie*, in: W. Dzieduszycki, J. Wrzesiński (ed.), *Metody. Źródła. Dokumentacja*, Funeralia Lednickie. Spotkanie 10, Poznań, Stowarzyszenie Naukowe Archeologów Polskich, p. 397-401.
- Felis M. 2009, *Kim byli ludzie pochowani na wczesnośredniowiecznym cmentarzysku w Jordanowie?*, in: W. Dzieduszycki, J. Wrzesiński (ed.), *Tak więc po owocach poznacie ich*, Funeralia Lednickie. Spotkanie 12, Poznań, Stowarzyszenie Naukowe Archeologów Polskich, p. 309-319.
- Fiedler U. 1999, *Das Land Lebus in piastischer Zeit*, in: S. Moździoch, *Centrum i zaplecze we wczesnośredniowiecznej Europie*, Spotkania Bytomskie 3, Wrocław, Instytut Archeologii i Etnologii PAN, p. 207-226.
- Gardeła L. 2014, *Scandinavian Amulets in Viking Age Poland*, Collectio Archaeologica Ressoviensis, Vol. 33, Rzeszów, Instytut Archeologii Uniwersytetu Rzeszowskiego, Fundacja Rzeszowskiego Ośrodka Archeologicznego.
- Gardeła L. 2015, *Vikings in Poland: A Critical Overview*, in: M.H. Eriksen, U. Pedersen, B. Rundberget, I. Axelsen, H.L. Berg (ed.), *Viking Worlds: Things, Spaces and Movement*, Oxford & Philadelphia, Oxbow Books, p. 213-234.
- Gardeła L. 2017, *Bad Death in the Early Middle Ages: Atypical burials from Poland in a Comparative Perspective*, Collectio Archaeologica Ressoviensis, Vol. 36, Rzeszów, Instytut Archeologii Uniwersytetu Rzeszowskiego, Fundacja Rzeszowskiego Ośrodka Archeologicznego.
- Gardeła L. 2018, *Lutomiersk Unveiled. The Buried Warriors of Poland*, „Medieval Warfare” 8/3, p. 42-50.

- Gardela L. 2019a, *Czy w Polsce są groby wikingów? Skandynawskie praktyki pogrzebowe na ziemiach polskich we wczesnym średniowieczu*, in: A. Janowski, M. Bogucki, L. Kaczmarek (ed.), *Wikingowie w Polsce?*, Collectio Catalogorum Gnesnensium 1, Gniezno, Muzeum Początków Państwa Polskiego.
- Gardela L. 2019b, *Gegenseitige Einflüsse. Skandinavien und Westslawen*, in: J. Staecker, M. Toplak (ed.), *Die Wikinger. Entdecker und Eroberer*, Berlin, Propyläen, Ullstein Buchverlage, p. 237-251.
- Gardela L., Kajkowski K. forthcoming, *Slavs and Snakes: Identity, Group Cohesion and Militarised Elites in Viking Age Poland*.
- Gardela L., Kajkowski K., Ratajczyk Z. 2019, *Ostrogi zoomorficzne z Ciepłego. Zachodniosłowiański model kosmosu?*, „Pomorania Antiqua” 28, p. 65-152.
- Gardela L., Kajkowski K., Ratajczyk Z., Wadyl S. 2019, *Oporządzenie jeździeckie i elementy rzędu końskiego*, in: Z. Ratajczyk, S. Wadyl (ed.), *Cieple. Elitarna nekropola na Pomorzu Wschodnim*, Gdańsk, Muzeum Archeologiczne w Gdańsku, p. 49-74.
- Gardela L., Kajkowski K., Söderberg B. 2019, *The Spur Goad from Skegrie in Skania, Sweden*, „Fornvännen” 114/2, p. 57-74.
- Gieysztor A. 2006, *Mitologia Słowian*, Communicare: Historia i Kultura, Warszawa, Wydawnictwa Uniwersytetu Warszawskiego.
- Gładkowska, Rzeczycka J. 2015, *Wojownik z wczesnośredniowiecznego Międzyrzecza*, in: S. Kurnatowski (ed.), *Międzyrzecz. Gród i zamek w wiekach IX-XIV. Wyniki prac wykopaliskowych*, Origines Polonorum VIII, Warszawa, Fundacja na Rzecz Nauki Polskiej, p. 377-388.
- Goßler N. 1998, *Untersuchungen zur Formenkunde und Chronologie mittelalterlicher Stachelsporen in Deutschland (10.-14. Jahrhundert)*, „Bericht der Römisch-Germanischen Kommission“ 79, p. 479-659.
- Goßler N. 2013a, *Zur Deutung von Gräbern mit Sporenbeigabe im westslawischen Raum*, in: F. Biermann, T. Kersting, A. Klammt (ed.), *Soziale Gruppen und Gesellschaftsstrukturen im westslawischen Raum Beiträge der Sektion zur slawischen Frühgeschichte der 20. Jahrestagung des Mittel- und Ostdeutschen Verbandes für Altertumsforschung in Brandenburg (Havel), 16. bis 18. April 2012*, Langenweissbach, Beier & Beran. Archäologische Fachliteratur, p. 77-94.
- Goßler N. 2013b, *Die mittelalterlichen Steigbügel aus dem Berliner Bestand der Prussia-Sammlung (ehemals Königsberg/Ostpreußen) – Studien zur Typologie, Chronologie und Kulturgeschichte*, „Acta Praehistorica et Archaeologica” 45, p. 109-215.
- Goßler N. 2014, *Wikingerzeitliche Waffen- und Reitzubehörfunde aus dem Berliner Bestand der Prussia-Sammlung (ehemals Königsberg/Ostpreußen) und ihre Beziehung zu Skandinavien*, „Acta Praehistorica et Archaeologica” 46, p. 1-26.
- Graham-Campbell J. 1980, *Viking Artefacts. A Select Catalogue*, London, British Museum Publications Ltd.
- Gruszka B., Michalak A., 2018, *Badania interdyscyplinarne wczesnośredniowiecznego zespołu osadniczego w Grodziszczu, stan. 1, pow. Świebodziński*, in: G. Urbanek (ed.), *Dziedzictwo militarne Świebodzina i okolic. Ochrona i badania*, Świebodzin-Międzyrzecz, Świebodziński Dom Kultury, Towarzystwo Historyczne Ziemi Międzyrzeckiej, p. 21-38.
- Grygiel R. 2014, *Cmentarzysko wareskich drużynników w Lutomiersku*, in: R. Grygiel, T. Jurek (ed.), *Początki Łęczycy. Tom II. Archeologia o początkach Łęczycy*, Łódź: Muzeum Archeologiczne i Etnograficzne w Łodzi.
- Gurney D. 2006, *Archaeological finds in Norfolk in 2005*, „Norfolk Archaeology” 45, p. 120.
- Hensel Z. 2003, *Badania materiałoznawcze ostróg stalowo-brązowych z Radachówki, Klim i Pasymia*, in: M. Dulnicz (ed.), *Słowianie i ich sąsiedzi we wczesnym średniowieczu*, Warszawa-Lublin, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, p. 115-116.
- Hilzerówna Z. 1956, *Ostrogi polskie z X-XIII wieku*, Wydział Historii i Nauk Społecznych, Prace Komisji Archeologicznej, t. 2, z. 2, Poznań, Państwowe Wydawnictwo Naukowe.
- Jaeger E. 1937, *Mittelalterliche Waffenfunde aus der Pfalz*, „Zeitschrift für Historische Waffen und Kostümkunde”, N.F. 6, p. 113-116.
- Janowski A. 2015, *Groby komorowe w Europie środkowo-wschodniej. Problemy wybrane*, Szczecin, Instytut Archeologii i Etnologii Polskiej Akademii Nauk, Ośrodek Archeologii Średniowiecza Krajów Nadbałtyckich.

- Janowski A. 2016, *Brązowa ostroga z ramionami haczykowato zagiętymi do wnętrza ze Słodkówka pow. stargardzki*, „Stargardia” 10, p. 407-413.
- Janowski A. 2017, *Chronology and Evolution of Early Medieval Hooked-spurs in the Light of New Finds and Analyses*, „Fasciculi Archaeologia Historicae” 30, p. 181-191.
- Jązdrowski K. 1951, *Cmentarzysko wczesnośredniowieczne w Lutomierniku pod Łodzią w świetle badań z r. 1949*, „Materiały Wczesnośredniowieczne” 1, p. 91-191.
- Kajkowski K. 2017, *Mity, kult i rytuał. O duchowości nadbałtyckich Słowian*, Wszechnica Triglava, vol. 1, Szczecin, Triglav.
- Kara M. 1993, *Siły zbrojne Mieszka I. Z badań nad składem etnicznym, organizacją i dyslokacją drużyny pierwszych Piastów*, „Kronika Wielkopolska” 62 (3), p. 33-47.
- Kara M. 2009, *Najstarsze państwo Piastów – rezultat przelomu czy kontynuacji? Studium archeologiczne*, Poznań, Instytut Archeologii i Etnologii PAN.
- Kaźmierczyk J., Lasota Cz. 1979, *Badania wykopaliskowe na Ostrowie Tumskim we Wrocławiu w 1977 r.*, „Śląskie Sprawozdania Archeologiczne” 20, p. 83-89.
- Kind T. 2001, *Ein Reitersporn aus Midlum, Ldkr. Cuxhaven, und seine Beziehung zu den salierzeitlichen Prachtsporen*, „Probleme der Künstenforschung im Südlichen Nordseegebiet” 27, p. 301-323.
- Kind T. 2002, *Archäologische Funde von Teilen der Reitausrüstung aus Europa und ihr Beitrag zur Kultur- und Sozialgeschichte der Ottonenzeit*, in: J. Henning (ed.), *Europa im 10. Jahrhundert. Archäologie einer Aufbruchzeit*, Mainz am Rhein, Philipp von Zabern in Wissenschaftliche Buchgesellschaft, p. 283-299.
- Knorr T. 1936, *Die Hacksilberfunde Hinterpommerns, der Grenzmark und der Neumark*, „Mannus” 28/2, p. 160-229.
- Koch R. 1982, *Stachelsporen des frühen und hohen Mittelalters*, „Zeitschrift für Archäologie des Mittelalters” 10, p. 63-83.
- Konze M., Ruchhöft F. 2017, *Funde aus der Burg Schwerin – Masse und Klasse*, in: *Zvarin-Schwerin. Von der Inselburg zur Residenz*, Fred Ruchhöft, Schwerin, Landesamt für Kultur und Denkmalpflege Mecklenburg-Vorpommern, p. 93-100.
- Kostrzewski J. 1962, *Kultura prapolska*, Warszawa: Państwowe Wydawnictwo Naukowe.
- Kozłowski T. 2015, *Analiza porównawcza czaszki oraz przeżyciowej wysokości ciała „wojownika z Międzyrzecza”*, in: S. Kurnatowski (ed.), *Międzyrzecz. Gród i zamek w wiekach IX-XIV. Wyniki prac wykopaliskowych*, Origines Polonorum 8, Warszawa, Fundacja na Rzecz Nauki Polskiej, p. 389-393.
- Kurnatowscy Z. i S. 2006, *Piastowskie „urządzenie” kresów północno-zachodnich państwa*, in: M. Dworaczek, A.B. Kowalska, S. Moździoch, M. Rębkowski, *Świat Słowian wczesnego średniowiecza*, Szczecin–Wrocław, Wydawnictwo Instytutu Archeologii i Etnologii PAN, p. 91-99.
- Kurnatowska Z., Łosińska A. 1996, *Perspektywy badań nad wczesnym średniowieczem Ziemi Lubuskiej*, in: L. Leciejewicz, E. Gringmuth-Dallmer (ed.), *Człowiek a środowisko w środkowym i dolnym Nadodrze. Badania nad osadnictwem pra- i wczesnodziejowym*, Spotkania Bytomskie 2, Wrocław, Instytut Archeologii i Etnologii PAN, p. 161-176.
- Łaskiewicz T. 2003, *Kwestia lokalizacji opactwa Mezerici w świetle badań archeologicznych Świętego Wojciecha k. Międzyrzecza*, in: ks. R. Tomczak (ed.), *Męczennicy z Międzyrzecza. 1003-2003. Materiały z sympozjów: 9-10.11.2001, 8-9.11.2002*, Paradyż, Wydawnictwo Diecezji Zielonogórsko-Gorzowskiej, p. 207-225.
- Malinowski T. 1993, *O wczesnośredniowiecznych dzwoneczkach z ziem polskich*, „Archeologia Polski” 28/1, p. 95-120.
- Michalak A., Kotowicz P.N. 2014, *Wczesnośredniowieczne cmentarzysko z okolic Bukowca w powiecie międzyrzeckim, czyli o pewnym odkryciu w archiwum w Wünsdorfie*, „Wielkopolskie Sprawozdania Archeologiczne” 15, p. 107-124.
- Michalak A., Sinkowski S. 2017, *An Ottonian Spur from the Early Medieval Cemetery in Santok in Western Poland*, „Acta Militaria Mediaevalia” 13, p. 133-147.
- Murawska A., Tabaka A. 2010, *Skarby średniowiecznej Wielkopolski*, Lednica, Muzeum Pierwszych Piastów na Lednicy.
- Nadolski A. 1954, *Studia nad uzbrojeniem polskim w X, XI i XII wieku*, Łódź, Zakład im. Ossolińskich we Wrocławiu.

- Nadolski A. 1959, *Wyposażenie grobów. Uzbrojenie*, in: A. Nadolski, A. Abramowicz, T. Poklewski (ed.), *Cmentarzysko z XI wieku w Lutomiersku pod Łodzią*, „Acta Archaeologica Universitatis Lodziensis”, nr 7, Łódź, Łódzkie Towarzystwo Naukowe, p. 42-69.
- Nalepa J. 1961, *Międzyrzecz do roku 1793*, in: S. Kurnatowski, J. Nalepa, *Z przeszłości Międzyrzecza*, Poznań, Wydawnictwo Poznańskie, p. 11-59.
- O’Sullivan A. 2000, *Crannogs: Lake Dwellings of Ireland, Dublin, Irish Treasure Series*.
- Osypiński P. 2010, *W cieniu Paradisus Matris Dei – zapomniane dziedzictwo*, „Z Otchłani Wieków” 65/1-4, p. 211-219.
- Osypińska M., Osypiński P. 2012, *Pochówek konia i szczątki zwierząt z wczesnośredniowiecznego cmentarzyska w Jordanowie, woj. lubuskie*, „Archeologia Polski” 57/1-2, p. 247-256.
- Pedersen A. 2014, *Dead Warriors in Living Memory. A Study of Weapon and Equestrian Burials in Viking-Age Denmark, AD 800-1000*, “Studies in Archaeology & History” 20/1, Copenhagen, University Press of Southern Denmark, National Museum of Denmark.
- Perls H. 1937, *Wąz w wierzeniach ludu polskiego*, Lwów, Drukarnia Naukowa.
- Posselt N., Szczepanik P. 2017, *Zoomorphe Applikationen und Darstellungen auf slawischen Schläfenringen im nördlichen westslawischen Raum*, in: F. Biermann, T. Kersting, A. Klammt, *Religion und Gesellschaft im nördlichen westslawischen Raum. Beiträge der Sektion zur slawischen Frühgeschichte der 22. Jahrestagung des Mittel- und Ostdeutschen Verbandes für Altertumsforschung in Chemnitz, 29.-31. März 2016*, Langenweissbach, Beier & Beran. Archäologische Fachliteratur, p. 193-220.
- Profantová N. 2016, *Ostruhy jako doklady přítomnosti elity v 8. a 9. století v Čechách*, „Archaeologica Historica” 41 (2), p. 7-40.
- Raffield B., Greenlow C., Price N., Collard M. 2016, *Ingroup Identification, Identity Fusion and the Formation of Viking War Bands*, „World Archaeology” 48 (1), p. 35-50.
- Ratajczyk Z. 2013a, *The Cemetery in Cieple – Current Research Results*, in: S. Moździoch, B. Stanisławski, P. Wiszewski (ed.), *Scandinavian Culture in Medieval Poland*, Interdisciplinary Medieval Studies II, Wrocław, Institute of Archaeology and Ethnology Polish Academy of Sciences, p. 323-351.
- Ratajczyk Z. 2013b, *Jednak ostrogi – brązowe okucia typu lutomierskiego w świetle najnowszych badań na cmentarzysku w Cieplem, gm. Gniew*, „Slavia Antiqua” 54, p. 287-305.
- Ratajczyk Z., Gardela L., Kajkowski K. 2017, *The World on a Spur. Unravelling the Cosmology of the Pagan Slavs*, in: L. Gardela, K. Kajkowski (ed.), *Animals and Animated Objects in Past Societies. III International Interdisciplinary Meetings “Motifs through the Ages”. Book of Abstracts*, Bytów, Muzeum Zachodniokaszubskie w Bytowie, p. 31-42.
- Rohrer W. 2002, *Wikinger oder Slawen? Die ethnische Interpretation frühpiastischer Bestattungen mit Waffenbeigabe in der deutschen und polnischen Archäologie*, Studien zur Ostmitteleuropaforschung 26, Marburg, Verlag Herder-Institut.
- Ruchhoft F. 2016, *Die Burg am Kap Arkona. Götter, Macht und Mythos*, Archäologie in Mecklenburg-Vorpommern 7, Schwerin, Abteilung Landesarchäologie im Landesamt für Kultur und Denkmalpflege Mecklenburg-Vorpommern.
- Schulze-Dörflam M. 1995, *Das Reichsschwert. Ein Herrschaftszeichen des Saliers Heinrich IV. Und des Welfen Otto IV*, Sigmaringen, Thorbecke.
- Sellewold B.J., Hansen U.L., Jørgensen J.B. 1984, *Iron Age Man in Denmark. Prehistoric Man in Denmark*, Vol. 3, Nordiske Fortidsminder. Serie B. Bind 8, København, Det Kongelige nordiske oldskriftselskab.
- Söderberg B. 2014, *Väg E6 Trelleborg-Vellinge: Område 6:1. Järnåldersgårdar i dösmiljö. Skåne, Trelleborgs kommun, Skegrie socken, Skegrie 39:1, fornlämning Skerige 39*, UV Rapport 2014:57. Arkeologisk undersökning 2008 Lund, Riksantikvarieämbetet.
- Steuer H. 1979, *Mittelalterliche Stachelsporen in den Historischen Museen der Stadt Köln*, „Archäologische Korrespondenzblatt” 9, p. 363-369.
- Szyjewski A. 2003, *Religia Słowian*, Kraków, Wydawnictwo WAM.
- Tomiczy, J. and R. 1975, *Drzewo życia. Ludowa wizja świata i człowieka*, Warszawa, Ludowa Spółdzielnia Wydawnicza.

- Tomicki, R. 1974, *Żmij, Żmigrody, Wały Żmijowe. Z problematyki religii przedchrześcijańskich Słowian*, „Archeologia Polski” 19 (2), p. 483-508.
- Świętosławski W. 1990, *Strzemiona średniowieczne z ziem Polski*, Łódź, Polska Akademia Nauk, Instytut Historii Kultury Materialnej.
- Urbańczyk S. 1991, *Dawni Słowianie. Wiara i kult*, Wrocław–Warszawa–Kraków, Zakład Narodowy im. Ossolińskich, Wydawnictwo Polskiej Akademii Nauk.
- Uspieński B. 1985, *Kult Św. Mikołaja na Rusi*, Lublin, Wydawnictwo Katolickiego Uniwersytetu Lubelskiego.
- Wachowski K. 1984, *Militaria z grodu na Ostrówku w Opolu*, in: *Studia nad kulturą wczesnopolskiego Opolu. Militaria – wyroby bursztynowe*, Wrocław, Prace Komisji Archeologicznej, Polska Akademia Nauk, Oddział we Wrocławiu, p. 11-112.
- Wachowski K. 2001, *Elementy rodzime i obce w uzbrojeniu wczesnośredniowiecznym na Śląsku*, „Acta Universitatis Lodzianensis. Folia Archaeologica” 23, p. 153-176.
- Wachowski K. 2006, *Funkcja okuć typu lutomierskiego*, „Archeologia Polski” 51/1-2, p. 155-161.
- Wadył S., Skvorcov 2018, *Nowoodkryta ostroga typu lutomierskiego z półwyspu sambijskiego. Przyczynek do studiów nad kontaktami słowiańsko-bałtyckimi*, „Przegląd Archeologiczny” 66, p. 1-11.
- Williams D. 2002, *Two Late Saxon Spur Fragments from Sussex and Hampshire*, „Medieval Archaeology” 46, p. 115-118.
- Williams G., Pentz P., Wemhoff M. 2013, *Viking*, Copenhagen, Nationalmuseet.
- Wołoszyn, M. 2010, *Obecność ruska i skandynawska w Polsce w X-XII w. – wybrane problemy*, in: M. Salamon, J. Strzelczyk (ed.), *Wędrowniacy i etnogeneza w starożytności i w średniowieczu*, Kraków, Uniwersytet Jagielloński, Towarzystwo Wydawnicze „Historia Iagiellonica”, p. 299-334.
- Wrzesińska A., Wrzesiński J. 2016, *Zawieszki dzwoneczkowate z cmentarzyska w Dziekanowicach oraz z Ostrowa Lednickiego*, „Materiały Zachodniopomorskie”, Nowa Seria 12, p. 363-380.
- Wyrwa A., Janowski A. 2014, *Dolne okucie pochwy miecza z przedstawieniem ludzkiej twarzy z Łekna (stan. Ł5)*, „Fontes Archaeologici Posnanienses” 50/2, p. 323-346.
- Zamelska-Monczak K. 2010, *Santok – badania archeologiczne w 2007 i 2008 roku. Stan i perspektywy*, in: W. Popek (ed.), *Santok „Strażnica i klucz królestwa”. 30 lat Muzeum Grodu w Santoku*, Gorzów Wielkopolski, Muzeum Lubuskie w Gorzowie Wielkopolskim, p. 47-62.
- Ziemlińska-Odoj E. 1992, *Materiały do cmentarzyska wczesnośredniowiecznego ze stanowiska XI w Cerkiewniku gm. Dobrze Miasto*, „Zeszyty Muzeum Warmii i Mazur. Archeologia” 1, p. 111-149.
- Zsille R., Forrer R. 1891, *Die Sporn in seiner Formenentwicklung*, Berlin, Verlag von Paul Bette.
- Żak J. 1959, *Uwagi o stylu zwierzęcym w sztuce wczesnośredniowiecznej na ziemiach polskich*, „Archeologia Polski” 4/1, p. 7-27.