

A CONTRIBUTION TO THE STUDY OF BOW FIBULAE OF WERNER'S CLASS I G

BY

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For over twenty-year long excavations in Davideni, the 1993 campaign did not after all turn out to be as promising as Ioan Mitrea, the director of excavations on the site, may have initially expected. The results of the previous campaign (1992) have been comparatively much more rewarding: seven sunken-floored buildings (nos. 47–54) with an abundance of artifacts, including a perforated bronze spoon in the filling of feature 52, which, according to Mitrea, was used for the administration of the Eucharist¹. By contrast, all that the 1993 campaign had to offer was just five sunken-floored buildings (nos. 55–60) and no artifacts relevant to either Mitrea's interpretation of the site as a missionary center in early medieval Moldavia or his equally far-fetched claims that Davideni illustrates a cultural revival of the Romanian population during the fifth and sixth centuries, before the economic decline supposedly brought by the invasions of the barbarous Slavs². The only metal artifact worth illustrating Mitrea's presentation of the site at the annual meeting of the Romanian archaeologists was a copper-alloy bow fibula from the sunken-floored building 58 in the southern area of the settlement, not far from the location of the perforated bronze spoon which had illustrated Mitrea's presentation at the previous meeting of the Romanian archaeologists. The importance attributed to this brooch in the wake of the rather uninteresting campaign of 1993 is demonstrated by its prompt publication, together with another bow fibula said to have been found in trench 79 running west of the sunken-floored building 58³. Nevertheless, both finds were ostensibly ignored by other scholars with an interest in the archaeology of sixth- and seventh-century Moldavia⁴.

Mitrea rightly compared the Davideni fibula to another found in a burial chamber of the large Crimean cemetery in Luchistoe (**10**), while referring to Joachim Werner's first classification of so-called "Slavic" bow fibulae found in Eastern Europe⁵. Werner divided his corpus into two classes (I and II), further subdivided on the basis of presumably different terminal lobes, shaped in the form of either a human face ("mask") or an

¹ Mitrea 2001, p. 148. Perforated bronze spoons were not used for the administration of the Eucharist. Instead they served as strainers for the consumption of exquisite foods, such as oysters, and signalize high social status, not Christian beliefs. This is clearly indicated by the association of such artifacts dated to the first half of the sixth century with gold coins (as in Jakovo; Dimitrijević 1960, p. 13 with pl. IV/5) or mirrors (as in Hódmezővásárhely; Csallány 1961, p. 121 and pl. 233/3). The Davideni strainer is a specimen of Tobias's class E, with good analogies in Early Avar burial assemblages such as grave 1138 in Budakalász-Dunapart and grave 89 in Szekszárd-Bogyszlói Street (Tobias 2001, p. 175).

² Mitrea 2001, pp. 11, 158, 180 with n. 9, and 201. See also Mitrea 1995–1996; Mitrea 2000; Mitrea 2002. For a critique of Mitrea's interpretations, see my review of his monograph in *Archaeologia Bulgarica* 6 (2002), no. 2, pp. 87–97.

³ Mitrea 1994–1995; Mitrea 1995. Unfortunately, given the length of trench 79 it is currently impossible to locate with any precision the find spot of the other fibula. Moreover, while Mitrea claims that his excavation did not identify any continuous layer between features, the bow fibula from trench 79 is said to have been found "in the layer attributed to the sixth- and seventh-century settlement" (Mitrea 2001, p. 162).

⁴ The Davideni fibula is not mentioned by Dan Gh. Teodor in any one of his subsequent publications (e.g., Teodor 1996 and Teodor 1999). There is no mention of it in Corman 1998, who was otherwise familiar with Mitrea's excavations at Davideni.

⁵ Mitrea 1994–1995, p. 447; Mitrea 2001, p. 162. Throughout this paper, numbers in bold are those of the specimens listed in the corpus (see Appendix)

animal head. The size and detailed ornamentation of the Davideni fibula, including the prominent *fleur-de-lys* cut of the footplate, make it relatively easy to include it into Werner's class I G, also known as the "Sarmizegetusa-Kiskőrös" group (Figs. 1–3)⁶. At the time his influential study of "Slavic" bow fibulae was published, Werner only knew six specimens of that class (found in Sarmizegetusa, Kiskőrös, Pastyr's'ke, and Tumiany), three of which had been found in the region of Eastern Prussia included within the Polish borders at the end of World War II⁷. Werner relied exclusively on visual, mostly intuitive, means for the grouping of his corpus of brooches, and subsequent authors took his conclusions for granted. Recently, his criteria for classification have been the object of criticism, but most authors continue to use Werner's categories⁸. Responsible for this remarkable resistance to criticism seems to have been Werner's interpretation of these brooches as an "index fossil" of Slavic ethnic identity. He was convinced that the migration of the Slavs was the only way to explain the distribution of such dress accessories across a vast area of Eastern Europe, from Ukraine to Greece. To Werner, "Slavic" brooches were Slavic because such fibulae were worn singly, not in pairs as the Germanic *Tracht* presumably required. Moreover, Werner argued, "Slavic" fibulae were more likely to be found in associations with cremations, the supposedly standard burial rite of the early Slavs, than with inhumations⁹. A relatively large number of Werner's "Slavic" bow fibulae had been found prior to World War II in a limited area of Mazuria (northeastern Poland, at that time Eastern Prussia), in archaeological assemblages that had nothing to do with what archaeologists commonly recognized as typically "Slavic." Aware that his theory of the Slavic migration would not work with the Mazurian brooches, Werner proposed that in this, and only in this, case, bow fibulae be interpreted as a result of long-distance trade between Mazuria and the Lower Danube region, along the so-called Amber Trail¹⁰. Endorsing a concept widely spread among archaeologists in the 1950s, according to which mortuary practices were a direct reflection of status hierarchy, Werner interpreted bow fibulae found in Mazurian graves as marking the status of the rich "amber lords" of the North. Werner's ideas are still popular with many archaeologists, who rarely questioned them¹¹. His interpretation of the "Slavic" bow fibulae is still the scholarly standard in many East European countries in which a strong undercurrent of German archaeological tradition is still apparent.

This paper examines the question of whether the distribution of "Slavic" bow fibulae can be explained in terms of migration. Were brooches found in Mazuria truly obtained from the Slavs in the Danube region by means of trade with amber? Conversely, was the presence of such brooches in the Carpathian Basin the result of migration from territories farther to the east and northeast? The emphasis will be laid on the distribution of ornamental patterns and the chronology of the archaeological assemblages in which specimens of Werner's class I G (Sarmizegetusa-Kiskőrös) were found. The traditional type-variety manner of material analysis is of little use here, because there is in fact no replica of any known fibula. Even specimens found together in pairs, such as in grave 366 in Kosewo (7–8) or in graves 74 (17–18) and 84 in Tumiany (19–20), are not in fact identical. The choice of multivariate analysis was thus based on the need to avoid making any assumptions about the distribution of variables. Such an approach was adopted as a counter-measure to Werner's largely stylistic interpretation rooted in the culture-historical paradigm¹². Instead of treating artifacts as epiphenomenal,

⁶ Werner 1950, p. 154. Following Werner's seminal publication, Kühn 1956, 88, included several brooches from East Prussian assemblages into his class I Banat, together with specimens of Werner's classes I C (e.g. Gâmbaş) or I H (e.g., Lelehskén). The Crimean specimen from Luchistoe (10) was first added to Werner's class I G by Aibabin 1990, p. 22, while the Ukrainian specimens from Liutari (9) and Pekari (14) joined that class through the work of Gavritukhin 1991, pp. 128–129. Teodor 1992, pp. 128–129 maintained Werner's classification criteria for his for his class I.4.

⁷ More brooches from Eastern Prussia were later published by Herbert Kühn. In a separate article, Werner later acknowledged Kühn's publication and its significance for his interpretation of the "Slavic" bow fibulae (Werner 1984b).

⁸ However, see the critical remarks of Menke 1990, Fiedler 1992, Curta 1994, Vagalinski 1994, and Katsougiannopoulou 1999.

⁹ Werner 1950, p. 172.

¹⁰ Werner 1950, p. 167; Werner 1984b. Although not supported by any shred of evidence, the idea of an early medieval Amber Trail is remarkably resistant: it has recently been revived by McCormick 2001, pp. 78 and 370. For a critique of this idea see Florin Curta, "The amber trail in early medieval Eastern Europe," in *Paradigms and Methods in Late Ancient and Early Medieval Studies*, edited by Celia Chazelle and Felice Lifshitz (forthcoming).

¹¹ But see Curta 2004 and Curta 2005b. Werner's ideas were taken at face value by Kulakov 1994, pp. 117–118.

¹² In his 1950 publication on "Slavic" bow fibulae, Joachim Werner in fact advocated the idea of "national costume" as a key concept for reading ethnicity in material culture. He viewed dress accessories, especially brooches, found in female burials as "national attributes" and as cultural traits particularly useful for the identification of early medieval ethnic groups. For Werner's ideas and the notion of *Tracht* in the post-war German archaeology, see Fehr 2000, 312–402.

this study takes its cue from recent discussions of dress and style¹³. Its conclusion proposes a new interpretation, arguing that bow fibulae were in fact more than just dress accessories and that they may have been used for negotiating social power.

Although he never mentioned any specific criteria of classification, the basis for Werner's intuitive definition of his class I G seem to have been a combination of several characteristics: a semicircular headplate covered either with symmetrical, chip-carved or with a radial motif; five knobs of equal size and shape; a short bow; an open-work footplate with two pairs of stylized bird-heads on either side, and two others at either end; and a terminal lobe with no decoration or in the form of an animal-head¹⁴. Several authors have pointed out analogies for one or several defining features. Some believed that the decoration of semicircular headplate derived from that of certain specimens of Werner's class I D, such as the fragment found in Garvăn¹⁵. Others compared the characteristic footplates of Werner's class I G with either Byzantine buckles of the Kis-Kassá class or with so-called *Zangenfibeln* of sixth-century assemblages in Central Europe¹⁶. Drawing such morphological parallels only suggests that fibulae of Werner's I G class were not entirely original creations. Instead, they resulted from the combination of elements of different origins and dates. The relative significance of various elements has long been debated, especially in the light of what diagnostic traits could be used to identify the "workshops" supposedly responsible for the dissemination of "Slavic" bow fibulae throughout Eastern Europe¹⁷. On the other hand, the absence of exact replicas suggests that each brooch may have been produced as required, for a single occasion. This shifts the emphasis from the "class" itself, which is in any case just an archaeological construct¹⁸, to the design elements of each individual brooch.

Werner's class I G contains three variants of headplate (1 A–C) and two of footplate (2 A–B); eleven variants of terminal lobes (3 A–K); three variants of bows (4 A–C); and three variants of headplate knobs (5 A–C) (Fig. 1). Each one of these variables appears to be independent of all others, which can explain the difficulties traditional classifications encounter when attempting to move beyond the very general characteristics of the class mentioned above. To account for such variation, each brooch in the corpus published at the end of this paper was assigned a minimal list of defining variables in the form of an alphanumeric code¹⁹. Classifying brooches on the basis of minimal elements of design and ornamentation is not a novel idea. The rubbish heap found near and below Building Group 3 at Helgö (Sweden) produced a considerable quantity of fragments of molds used for casting various parts (headplates, footplates, or bows) of relief brooches. The very nature of that body of evidence required a model of classification emphasizing the conceptual division of the brooch into design elements. John Hines and Irina Zaseckaia have recently produced classifications of square-headed and bow brooches, respectively, that are also based on dividing the designs of individual brooches into compositional elements²⁰.

The matrix of alphanumeric codes shows the incidences of all variables used in the description of brooches of Werner's class I G. The statistical method chosen to analyze that matrix is the shared near-neighbor clustering based on the Jaccard coefficient of similarity. This method was chosen because in this case category membership is based on common ornamental variables. For a certain brooch to join a cluster (category), it

¹³ For dress, see Maertens 1978; Bogatyrev 1986; DeLong 1987; Blanc 1989. For style, see Wiessner 1983; Wiessner 1989; Wiessner 1990; Earle 1990; Plog 1995.

¹⁴ Despite the fact that Werner's class I G belongs to his group of "Slavic" bow fibulae with terminal lobes in the form of a human mask.

¹⁵ Nestor 1961, pp. 441 and 444 fig. 3/1a–b.

¹⁶ Petre 1966, p. 265; Popović 1984, p. 174. For the Kis-Kassá class of buckles, see Ibler 1992, pp. 143–144. For *Zangenfibeln*, see Kühn 1974, pp. 827–840.

¹⁷ Most significant in this sense is the insistent, albeit unfounded, claim of several Romanian archaeologists (Petre 1966, Teodor 1992) that fibulae of Werner's class I G were produced in Byzantine workshops.

¹⁸ For problems associated with classification in archaeology and the perceived tendency to move away from abstract types created by archaeologists towards an "emic" approach to artifact typology, see Cowgill 1982; Cowgill 1990; Read 1989; Adams 1988; Minta-Tworzowska 1993; Minta-Tworzowska 1998.

¹⁹ In the absence of any reliable illustration in the available publication, there is no alphanumeric code for **13**. Identical alphanumeric codes (e.g., for **17** and **18**) were given for specimens that are very close to each other in terms of design and decoration, although close examination of even the published illustrations precludes the existence of replicas.

²⁰ Hines 1997; Zaseckaia 1997. To produce classes, Hines quantified similarity between specimens and set out the coefficients of agreement thus obtained in a Robinson matrix to produce clusters (see Hines 1997, p. 9). For a mathematical description of the Brainerd-Robinson coefficient of agreement, see Shennan 1990, pp. 191–192.

must have a specified level of similarity with members of that cluster. For two clusters to join, any brooch of one cluster must have a specified level of similarity with any brooch of the other. Because the shared near-neighbor clustering analysis represents quantitatively the influence that outer points in a set of data can have on the relative similarity of each pair of points, it is most appropriate for data with no physical measurements. In other words, this is a method most appropriate for studies in which nothing can be assumed about underlying probability functions. In theory, the Jaccard coefficient does not take into account mismatches. For example, if two brooches are the same in that they both lack a certain design element, then that similarity is not counted either as a match or in the total number of design elements. In reality, the coefficient is obtained by dividing the number of design elements common to two brooches by the sum of that number and the number of mismatches. In this way, the Jaccard coefficient has the great advantage of taking into account the variation in the number of variables among brooches²¹.

The dendrogram displaying the results of the analysis clearly shows two major clusters, one of which has two sub-clusters, and of one unique specimen, Tumiany (19) (Fig. 5). When plotting on a map of Eastern Europe the near-neighbor relations resulting from this analysis, it becomes clear that out of the two clusters, only one consists of design elements with a specific, localized distribution, while all other sub-clusters are made up of brooches found at great distance from each other (Fig. 6). Fibulae found in the Mazurian cemeteries of Bartolty Wielkie, Wiska, Tumiany, and Kosewo share compositional elements with each other, but not with brooches from outside Mazuria. By contrast, three sub-clusters contain closely related fibulae found as far from each other as Luchistoe (10) and Pekari (14), Liutari (9) and Sarmizegetusa (15), or Demianiv (5) and Caričin Grad (3). The shortest map line between nearest neighbors within any one of these three clusters is that between specimens found in the Middle Dnieper region, Pastyr's'ke (12) and Pekari (14). Two clusters contain fibulae found both outside and inside the Carpathian Basin. Outside Mazuria, contiguity does not imply similarity. Brooches found on sites located relatively close to each other, such as Sarmizegetusa (15) and Bratei (2) or Demianiv (5) and Zemplénagard (32) are in fact not related to each other. The Middle Dnieper region has the largest number of nearest-neighbor links at a considerable distance both to the south (Crimea) and to the west (the Carpathian Basin). Fibulae from sites located on the fringes of the distribution map (3 and 10) have no links to each other and are related at the remotest level of just one shared near-neighbor (Fig. 7).

Assemblages from sites on the fringes of the distribution map offer some of the most important clues for establishing the chronology of this class of fibulae. The fibula found with skeleton 4 in burial chamber 10 in Luchistoe (10) was associated with a buckle of the Trebizond class with a good analogy in the Malo Pereshchepyne assemblage, which also produced eighteen light-weight *solidi* struck for Emperor Constant II between 642 and 647 (Fig. 8)²². The fibula from grave 2 in Kiskörös was found together with a copper-alloy earring with bead pendant (Fig. 9). Luxury, golden versions of this type of earring were found in Early Avar assemblages in association with coins struck for Emperor Phocas, strainers of Tobias's class C, or belt mounts of Zabochnik's class 182²³. The evidence discussed so far seems to confirm Joachim Werner's blanket dating of all "Slavic" bow fibulae to the seventh century. But a closer examination of burial assemblages in Mazuria that have produced bow fibulae of Werner's class I G suggests a different interpretation.

The pair of brooches from grave 366 in Kosewo (7-8) was found together with a gilded fibula of the Dattenberg class (Fig. 10). Similar fibulae are known from several other Mazurian cemeteries, but particularly important for our discussion of chronology is that from grave 34 in Tumiany²⁴. A replica of the Tumiany brooch was found in Dour (Hainaut, Belgium) and has therefore been dated to the first half of the sixth century²⁵. A date within the sixth century seems to be supported by the evidence of grave 84 in Tumiany (Fig. 11).

²¹ For further merits of the shared near-neighbor analysis using the Jaccard coefficient, see Shennan 1990, pp. 203–204 and 213–214. For the history of clustering analysis and its applications, see Wilkink and Uytterschaut 1984.

²² Maculevich 1927; Werner 1984a, pl. 26. For the latest coins in the Malo Pereshchepyne assemblage, see Sokolova 1995, pp. 308–309.

²³ Kiszombor, grave 2: Garam 1992, p. 204 pl. 32/13. Várpalota, grave 192: Erdélyi and Németh 1969, p. 187 pl. 10/1 and 2. Aradac, grave 93: Nagy 1978, pl. M 93/1, 2.

²⁴ Babięta, grave 109: Kühn 1981, p. 69 and pl. 3/33. Jagielki: Kühn 1981, pp. 141–142 and pl. 30/190. Schakaulack: Kühn 1981, pp. 308–309 and pl. 72/483. Tylkowo: Kühn 1981, pp. 310–311 and pl. 73/492. Skowarcz: Kühn 1981, pp. 315–316 and pl. 74/501. Unknown location in Eastern Prussia: Kühn 1981, pp. 260–265 and pl. 62/406. For Tumiany, see Heydeck 1895, p. 49 and pl. 2/2.

²⁵ Werner 1951. See also Koch 1998, pp. 254–255; Kowalski 2000, p. 216.

The spear-shaped strap-end has good analogies in grave 23 in Leleszki, where they were associated with a sixth-century fibula of the Krainburg class, and in grave 38 in Tumiany, in which such strap-ends were found together with a late fifth- or early sixth-century crossbow brooch of the Daumen/Tumiany type²⁶. The open-work belt mount found in grave 84 has equally good analogies in several other burial assemblages of the same cemetery. In grave 147, such a belt mount was associated with two fibulae of the Montale-Weimar class dated to the third quarter of the sixth century, while grave 80 produced an open-work belt mount and a crossbow brooch of Kulakov's class 4b, dated shortly before 600²⁷. The damascened decoration on the scissors found in grave 93 together with a bow fibula of Werner's class I G in grave 93 (Fig. 12) is unique, but scissors have also been found, often in association with single-layered combs, in horse burials excavated in Tumiany in 1969 and 1970. The combs served for a general dating of those burials to the late sixth or early seventh century²⁸.

The Tumiany cemetery plays a key role in establishing the chronology of cemeteries of the so-called Olsztyn group in Mazuria. On the basis of an analysis of grave goods found in its 233 graves and following an earlier suggestion by Jerzy Okulicz, Jacek Kowalski has recently advanced the idea of two distinct burial phases, which he called E2a and E2b, following O. Tischler and H. Kemke's chronological system²⁹. According to Kowalski, phase E2a, which he dated to the mid-sixth century, can be recognized by the presence of bow fibulae of the Krainburg class and of crossbow fibulae with animal style decoration, such as those of the Daumen/Tumiany class. To the same phase can be dated spear-shaped strap ends, which appear in 29 graves, and the fibula of the Hahnheim class from grave 34 with its analogy from Dour³⁰. By contrast, Kowalski attributed bow fibulae of Werner's classes I D, I F, and I G, as found in graves 2, 3, 20, 30, 44, 58, 74, 84, and 105, to phase E2b (dated *ca.* 550-600), together with horseshoe-shaped pendants or open-work belt buckles and mounts³¹. But a thorough examination of the published burial assemblages from Tumiany shows Kowalski's interpretation to be incorrect. Using correspondence analysis, a technique allowing seriation of assemblages if the artifacts used in the analysis are time-sensitive, it becomes apparent that there is no clear-cut delineation of the supposed burial phases (Fig. 13)³². Instead of a classical parabola-shaped cluster of points, which is expected when a specific artifact has a unimodal distribution with respect to another, the scattergram in fact shows a "cloud" of assemblages not far from the intersection of axes. Most artifacts associated with the supposed phase E2a appear in that cloud together with artifacts arbitrarily assigned to phase E2b. For example, a buckle and a belt mount with open-work ornament are associated with a crossbow brooch of the Daumen/Tumiany class in grave 150, which also produced a spear-shaped strap-end. A crossbow brooch with T-shaped foot, which according to Kowalski must be dated to the mid-sixth century, was associated in grave 33 with a horseshoe-shaped pendant that cannot be dated earlier than phase E2b. The seriation by correspondence analysis suggests therefore that no solid evidence exists to support the separation of the Tumiany assemblages into two distinct burial phases. Moreover, Kowalski believed that the cemetery was abandoned after *ca.* 600, but there is some indication that later graves may be safely dated after that

²⁶ Kulakov 1989, pp. 240 fig. 23/2 and 249 fig. 33. For the Krainburg class, see Kühn 1974, pp. 758–766. For the Daumen/Tumiany class, see Bitner-Wróblewska 2001, pp. 83–87.

²⁷ Kulakov 1989, pp. 258 fig. 42/2 and 268 fig. 52. For the Montale-Weimar class of fibulae, see Kowalski 2000, p. 214. For crossbow brooches of Kulakov's class 4b, see Brather 2001, p. 482.

²⁸ Baranowski 1996. For horse burials in Mazuria, see also Jaskanis 1966, Dąbrowski 1973, and Benecke 1985.

²⁹ Kowalski 1991 and Kowalski 2000. See also Tischler 1902, Kemke 1914, Okulicz 1973, pp. 467–495. Excavated in 1894 by J. Heydeck, in 1930 by L. Fromm, and between 1969 and 1971 by K. Dąbrowski, the Tumiany cemetery was published by Kulakov 1989 on the basis of reconstructed lists of grave goods in the collections of the Prussia Museum in Königsberg (now Kaliningrad), which was destroyed by Russian bombs in 1944. However, not all assemblages are complete, and some graves lack illustrations. No forensic analysis of the cremated remains has ever been done. This makes highly dubious Kulakov's separation between male and female burials, which in fact follows an older idea of Šturms 1950, who believed that male burials had crossbow brooches and spurs, while female burials produced bow fibulae and beads.

³⁰ Kowalski 1991, p. 76; Kowalski 2000, p. 214. The crossbow fibula of the Daumen/Tumiany class from grave 38 was found together with a dagger with a bone handle decorated with concentric circles. Both artifacts have good analogies in grave 106 from the large Lithuanian cemetery in Plinkaigalis. See Kazakevičius 1983 and Kazakevičius 1993, p. 107 fig. 172.

³¹ Kowalski 1991, pp. 78–80.

³² For the correspondence analysis, see Shennan 1990, pp. 283–286; Bølviken et al. 1982. For an exemplary application to the analysis of burial assemblages, see Nieveler and Siegmund 1999.

date³³. In other words, the Tumiany cemetery, which may have begun shortly before the middle of the sixth century, was not abandoned before the first quarter of the seventh century. Can fibulae of Werner's class I G be dated to the latest burial phase? In my opinion, the answer must be negative. The goods associated with the urn graves 74 (Fig. 15) and 84 – spectacle-shaped pendants, spear-shaped strap-ends, and open-work belt mounts—strongly suggest a date before 600, perhaps during the second half of the sixth century. If we accept the idea that most, if not all, other specimens of the same class found in Tumiany and on other sites in northeastern Poland must also be dated before 600, then it becomes readily apparent that the Mazurian fibulae are in fact the earliest specimens of their kind. Whether or not the web of design links is to be given any chronological value at all, it is nevertheless significant that no Mazurian brooch has nearest neighbors outside Mazuria. Brooches found on Mazurian sites are very similar to each other in their careful execution and, *pace* Teodor, they all have a much more elaborate decoration, for which no analogy exists outside Mazuria³⁴. One can hardly avoid the conclusion that they were all worked by the same jeweler or by jewelers working after the same model. Should a blanket dating to the sixth century be accepted for all Mazurian brooches of Werner's class I G, then the lingering question is whether or not they served as source of inspiration for the manufacture of other fibulae found outside Mazuria. In other words, can we speak of a dissemination of brooch forms and design details? The lack of any finds outside Mazuria that are linked at whatever rank to Mazurian specimens suggests that specimens found in the Carpathian Basin or in the Middle Dnieper region were not imitations of Mazurian originals. The slight chronological difference between the Mazurian cluster and all other specimens of Werner's class I G substantiates the idea of disconnected networks for the dissemination of brooch forms and decoration. However, given the number of linked specimens known to have been found on sites outside Mazuria, such sites may not only have coexisted for a brief while, but also have maintained some form of contact enabling the dissemination of brooch design elements. The links to the Middle Dnieper area and the general dating to the first half of the seventh century strongly suggests that responsible for the dissemination of may have been the social and political networks associated with the Avar qaganate.

The network of links shown in Figure 6 may indicate the extent of social connections between manufacturers, clients, or wearers. It has long been accepted that linked pieces of ornamental metalworks are likely to emphasize the extent of the movement of people, and therefore of contact³⁵. Theoretically, the dissemination of a brooch form or of ornamental details may indicate one of three types of movement: of brooches (through gift-giving or trade), with or without their owners; of models of brooches, including templates for the reproduction of ornamental patterns; and of craftsmen, carrying manufactured brooches or models³⁶. Until recently, prevailing views about the organization of production in the early Middle Ages favored the third type of movement. But models presuppose two model- and mold-making pieces, while the existing evidence suggests that production of "Slavic" bow fibulae was based on a different technology than that implied by the existence of copper- or lead-alloy models³⁷. A soapstone mold for bow fibulae has recently been found in association with other molds and smelting implements in a sunken-featured building at Bernashivka, near Mohyliv-Podil'skyi, in Ukraine³⁸. A stone mold excludes the use of models, in that it implies the use of the "lost-wax" technique. The mold was designed to produce a ceroplastic work, later decorated to yield the end product. The ceroplastic work was embedded into a clay bar, which was then dried and fired in order to melt the wax and to produce the "negative" brooch. Hot metal was then poured into the hollow clay bar. Soon after the metal became cold, the bar was broken and the brooch thus obtained was further decorated and gilded. It is the stone mold used in the initial stage that allowed the production of another, similar – but never identical – brooch, by means of repeating the process³⁹. The ornamentation

³³ For example, grave 103, with a dagger with sheath mounts with ornaments that have been linked to Early Avar artifacts by Urbańczyk 1977.

³⁴ Teodor 1992, 129 believes that the Mazurian brooches are all products of workshops in the Lower Danube region.

³⁵ This assumption underlies, for example, the work of John Hines on square-headed brooches from Anglo-Saxon England (Hines 1984).

³⁶ See Leigh 1991, p. 117; Hines 1997, p. 213.

³⁷ For a description of the technology implied by the existence of lead-alloy models, see Mortimer 1994, p. 30; Arnold 1997, p. 83.

³⁸ Vinokur 1997.

³⁹ For a detailed description of the lost-wax technique of producing bow fibulae, see Franke 1987; Minasian 1997; Szmoniewski 2002, pp. 121–122.

produced in the ceroplastic work or, later, on the cast seems to have been specific to each case, although always drawn from a common, relatively easily identifiable repertoire of motifs. The absence of exact replication is a strong indication that each brooch or pair of brooches was produced as required, probably for only one occasion at a time. But was the individual working with the Bernashivka mold an itinerary craftsman? The context in which the mold was found suggests otherwise.

Both fibula and mold designs traveled across Eastern Europe, some on a north-south, others on a east-west direction. Whether or not this may also indicate movement of people, it is hardly evidence for outright migration, since the movement of ornamental patterns is not that of a unidirectional movement of people, but a two-way transfer: some brooch-forms traveled south, others moved west, perhaps at about the same time. Moreover, the analysis of Werner's class I G shows that no fibulae existed that could be ascribed to one region alone, with the exception of Mazuria. Fibulae of Werner's class I G may well have been "invented" there. However, linked specimens spread rapidly over wide distances, a phenomenon which could hardly be explained by means of itinerant specialists or transmission of models. This is further substantiated by the lack of any chain of communication between the main areas of dissemination: no area seems to have mediated the transfer of ornamental patterns from Mazuria or Crimea to the Carpathian Basin. Vast areas of East Central and Eastern Europe, to the north, east, and south of the Carpathian Mountains, which were certainly populated at the time, produced no finds at all. This suggests that ornamental patterns were not passed from one community to the next in a chain of dissemination, as confirmed by the absence of ornamental links between fibulae found on neighboring sites. Instead, the dissemination seems to have worked by great leaps, bypassing large areas of settlement and focusing on only a few regions, such as the Carpathian Basin or the Middle Dnieper region. Since the earliest fibulae of Werner's class I G are those from Mazuria, the idea that such dress accessories are either Slavic inventions or products of early Byzantine workshops is to be abandoned⁴⁰. The dissemination of the ornamental patterns of Werner's class I G from the Middle Dnieper to the Carpathian Basin is likely to indicate long-distance contacts between communities and to signal the rise of individuals having the ability both to entertain such contacts and to employ craftsmen experienced enough to replicate ornamental patterns and brooch-forms. In other words, instead of "index-fossils" for the migration of the Slavs, fibulae of Werner's class I G indicate long-distance contacts between East European elites. As such, they should be treated as symbols of social identity.

But what exactly was the identity for which fibulae of Werner's class I G served as symbols? It has long been accepted, although never demonstrated, that bow fibulae were part of the female dress. This presumption has been substantiated by rare cases, such as grave 2 in Kiskörös, in which associated skeletons have been properly sexed, or reportedly so. It has been noted that in Crimea, graves with female skeletons produced "Slavic" bow fibulae of different classes and sizes, with the fibula on the right side of the skeleton being somewhat longer than that on the left side⁴¹. Elsewhere in Europe, bow fibulae found with female skeletons, usually late adolescents or adults between 20 and 40 years of age, may indicate a "threshold of acquisition" precisely comparable with access to shields and/or swords among weapon-bearing men⁴². Despite the notorious difficulties of "reading" gender in burial assemblages as a direct reflection of social practice, these observations strongly suggest the representation, in burial, of the age of marriage. In other words, bow fibulae, including those of Werner's class I G, may have marked married women, at least in death, if not also in life⁴³. The presence of pairs of brooches on the chest or the abdomen of female skeletons, as with skeleton 4 of the burial chamber 10 in Luchistoe (10, see Fig. 8) may indicate that fibulae were used for clasping a female garment opened at the front and girdled at the waist⁴⁴. Brooches most certainly belonged to the outermost

⁴⁰ Slavic inventions: Werner 1950. Byzantine artifacts: Petre 1966, Pallas 1981.

⁴¹ Khairedinova 1999, p. 87.

⁴² Strauß 1992, p. 70; Dickinson 1993, p. 39. Studies based on microwear analysis have demonstrated a direct correlation between the degree of use and the age of the wearer, which suggests that the same brooches acquired at betrothal or marriage were then worn during the rest of the lifetime. See Martin 1987, pp. 278 and 280; Nieke 1993, p. 129. For comparable conclusions regarding other categories of artifacts, see Distelberger 1997.

⁴³ For gender identity in the archaeology of the early Middle Ages, see Sasse 1990, Vida 1996, Härke 2000, and Curta 2005b. For gender distinctions marked in burial rite (e.g., different orientation), as opposed to just grave goods, see Caune 1991, p. 263.

⁴⁴ Clauss 1987, p. 537; Martin 1991, p. 658. See also Khairedinova 2000.

layer of clothing and were thus easily visible, perhaps the most visible of all dress accessories, a particular sort of badge. They may have played an important communicative role particularly in public, “beyond-the-household” contexts of social action. On the other hand, the absence of brooches or other dress-fasteners from many other female graves within the same cemeteries that produced fibulae of Werner’s class I G, suggests that access to brooches was also dependent upon social status. If bow fibulae of Werner’s class I G were female dress accessories, then the woman buried in the burial chamber 10 in Luchistoe must have been of high status, because the chamber in which she was buried was hewn into the rock, with steps at the entrance, and contained no less than seventeen skeletons, of both young and old, associated with gold and silver artifacts. The Luchistoe grave may well have been an “aristocratic” female burial, but whether or not this suggestion may be extrapolated to other burials that produced fibulae of Werner’s class I G depends upon the relative value of the associated grave goods within each particular cemetery.

If silver or gilded silver dress accessories were badges of high social status, one important aspect of the communicative symbolism of the dress with bow fibulae was its capacity for providing locative information, referring especially to the individual’s position within the social network. The dress with bow fibulae had a distinct referent and transmitted a clear message to a defined target population (primarily members of the local communities, but also outside visitors) about conscious affiliation and identity. This dress may thus be treated as a form of “emblemic style”, a form of nonverbal communication through which doing something in a certain way communicates information about relative identity⁴⁵. Recent anthropological studies have demonstrated that emblemic styles appear at the critical junctures in the regional political economy, when changing social relations would impel displays of group identity⁴⁶. Similarly, sharp differentiation and conspicuous display of gender, especially in mortuary assemblages, is in fact the projection of an ideal image of gender roles during periods of social stress and fluctuating identities⁴⁷. Both remarks are particularly useful for the discussion of brooches of Werner’s class I G found in Mazuria and the Carpathian Basin. Very little is known about the reasons of the sudden appearance and demise of the so-called “Olsztyn group” in the region of the Mazurian Lakes where Tumiany, Smolanka, Tylkowo, Miętkie, Kielary, and Waplewo are located⁴⁸. However, the existing evidence suggests that during the second half of the sixth century, communities in Mazuria have established contacts with distant groups in Bavaria, the Middle and Lower Rhine region, as well as Scandinavia, all of which are well documented with artifacts of West or North European origin⁴⁹. At the same time, the influence of the Mazurian communities began to expand to the north into Lithuania, Latvia, and even Estonia, where such an influence coincided with dramatic social changes reflected in the abandonment of inhumation and the adoption of urn cremation⁵⁰. Whether or not this expansion can be in any way associated with the military posturing of Mazurian elites, the second half of the sixth century also witnessed the appearance of a few graves of warriors buried with their weapons and of horse burials, sometimes on top of cremations with human remains⁵¹.

Fortunately, we know a lot more about the situation in the Carpathian Basin during the first half of the seventh century. The military posturing, which is very well documented archaeologically through the deposition of weapons in Early Avar inhumations, was clearly a major component of the social relations during a period of increased social competition that witnessed the climax of qagan Bayan’s power, the brief rule of his son, the rapid decline of that power during the civil war of the early 630s, and the rise of a new power from the ashes of the shattered qaganate⁵². The qagan who quelled the rebellion may well be the aged man buried in Kunbabóny with an amazing wealth and variety of accoutrements truly comparable to

⁴⁵ For the notion of “emblemic style,” see Wiessner 1983, Wiessner 1989, Wiessner 1990.

⁴⁶ McLaughlin 1987; MacDonald 1990, p. 53; Earle 1990, pp. 74–75; Byers 1991, p. 12.

⁴⁷ Härke 2000, pp. 194–195.

⁴⁸ The rise of the “Olsztyn group” coincides in time with the abandonment of many sites in the Sambian Peninsula, which has fueled speculations about a possible migration from the north into the region of the Mazurian Lakes. See Kulakov 1994, p. 31.

⁴⁹ Wyszomirska-Werbart 1992.

⁵⁰ Sedov 1994, p. 76; Atgāzis 2001, pp. 265–266.

⁵¹ Ehrlich 1931. For horse-burials, see above, n. 28. See also Vaitkunsienė 1986.

⁵² Pohl 1988, pp. 268–169.

contemporary burial assemblages in the steppes north of the Black Sea⁵³. The increasing number of weapons, including single-edged sabres, deposited especially with horseman burials, signals a society that was geared towards warfare perhaps more than during the previous period. The martiality revealed by burial assemblages may be a reflection of Avar belligerence during the late Early and the Middle Avar periods, which is certainly responsible for the expansion of the area covered by the material culture associated with this period to southern Slovakia or the region around present-day Vienna.

The troubles at the center of the Avar power reverberated also in the East European steppes. According to Nicephorus, “Koubratos, the nephew of Organas and lord of the Onogundurs, rose against the Chagan of the Avars and, after abusing the army he had from the latter, drove them out of his land.”⁵⁴ Kubrat's revolt against the Avars that broke out in 631 or 632 could not have been better timed to serve the political and military interests of the Empire. This remark also dovetails with the archaeological evidence pertaining to the seventh-century Middle and Lower Dnieper, especially with a number of exceptionally rich burials, such as Zachepilovki, Nove Senzhary, Voznesens'ke, Kelegeia, Hlodosy, and especially (Malo) Pereshchepyne. Besides weapons, exquisite dress accessories, as well as Byzantine and Sassanian silverware, the Pereshchepyne assemblage produced three golden fingerings with monogram mentioning a certain *patrikios* Koubratos, a strong indication that, despite the absence of any skeletal remains, the Pereshchepyne assemblage may well be Kubrat's burial⁵⁵. Judging from the archaeological evidence and from that of the written sources, Kubrat may thus have been appointed by the qagan of the Avars to govern a subject tribal union in the steppes north of the Black Sea. He seems to have taken advantage of the crisis of the Avar qaganate in the aftermath of the failed siege of Constantinople (626) to strike out on his own. Moreover, as the civil war broke in *ca.* 630 within the western Türk empire (established in the Eurasian steppes in the mid-sixth century), two groups began competing for power and control over the steppes: the Bulgars, under the leadership of Kubrat, a scion of the Dulo clan, the leading group of the left division of the western Türk qaganate; and the Khazars, led by a member of the charismatic clan Ashina associated with the right division.

To judge by the existing evidence, the rise of the local elites in both the Carpathian Basin and in the Middle Dnieper region was coincidental with the dissemination of emblematic styles and it has been argued that the adoption of the dress with bow fibulae was a means by which individuals proclaim the achievement and consolidation of elite status⁵⁶. Primarily female dress accessories, bow fibulae indicate that women, particularly those associated with the elites rising to political prominence in the late sixth and early seventh century, were vehicles for the construction of the social identity of their kinsmen or husbands.

The social meaning attached to these dress accessories may have also been fixed in time. What distinguishes the area within and immediately outside the Carpathian Basin on the map showing the distribution of fibulae of Werner's class I G is the fact that a few specimens have been found in settlement, not burial assemblages⁵⁷. Unfortunately, next to nothing is known about the exact location of the Demianiv (5) and Zemlénagard (32) brooches within the respective archaeological contexts of their finding, but similar finds of fibulae of Werner's class I H have been interpreted as artifacts deliberately left behind to “mark” the house at the time of its abandonment, perhaps at the death of the household head⁵⁸. This may also apply to the Davideni fibula mentioned at the beginning of this paper. Unlike the sunken-floored building 41, which produced a bow fibula retrieved from the filling, in house 58 the I G brooch was found on the floor, by the oven. House 58 belongs to a group of sunken-floored buildings on the southern edge of the settlement that were arranged in a semicircle around an open space with a free-standing oven in the middle. Most other

⁵³ Tóth and Horváth 1992.

⁵⁴ Nicephorus, *Short History* 22, ed. and transl. by C. Mango (Washington: Dumbarton Oaks, 1990), p. 71. Nothing else is known about Organas, and the Onogundurs are otherwise not known from earlier sources.

⁵⁵ See, more recently, L'vova and Semenov 1985; Bálint 1996; L'vova 1998.

⁵⁶ Curta 2001, p. 344.

⁵⁷ By contrast, no I G fibulae are so far known to have been found on contemporary settlement sites in Mazuria.

⁵⁸ Curta 2004, p. 72. The Zemlénagard site was wrongly interpreted by its excavator as a cremation cemetery (Révész and Wolf 1993; Wolf 1996; see now Stanciu 2004). For house abandonment and its archaeological correlates, see Cameron 1991.

houses in this area produced dress accessories that may be associated with an elevated social status by virtue of their association with an otherwise well documented sixth- and early seventh-century phenomenon of cultural imitation (*imitatio Imperii*). The strainer found in house 52, the cast fibula with bent stem from house 51, and the pectoral cross from house 16 – all substantiate this interpretation⁵⁹. It is important to note in this context that both the pectoral cross and the cast fibula with bent stem were found in an archaeological context similar to that of the bow fibula in house 58, namely on the floor, by the oven. If the interpretation proves to be correct, then “Slavic” bow fibulae appear not only as markers of social identity, but also as symbols of its presence in the emptied space of social interaction. In other words, bow fibulae may have been not just symbols of social status or gender, but also badges of power. The dissemination of ornamental patterns is likely to indicate long-distance contacts between communities and to signal the rise of powerful individuals within those communities. Instead of treating “Slavic” bow fibulae as “index-fossils” for the migration of the Slavs – a concept otherwise not founded in the archaeological evidence – we should therefore regard them as a powerful means of expression of a wide range of social messages. During the second half of the sixth century, fibulae of Werner’s class I G found in Mazuria may have been primarily female dress accessories, and it is likely that high-status female burials mirrored the construction of social identity of their husbands. By 600, the kind of identity symbolized in this manner was quickly adopted by members of other, distant communities in Crimea, the Middle Dnieper region, and in the Carpathian Basin, as well as in the Balkans. During the first half of the seventh century, smaller and less sophisticated replicas of brooches first known in Mazuria were produced in present-day Romania and the neighboring territories of Ukraine and Hungary using the “lost-wax” technique already employed by local craftsmen for the production of other dress accessories, such as belt buckles and mounts, strap ends, or pendants. Beyond emulation, bow fibulae of Werner’s class I G, especially cruder specimens with simplified ornamental patterns, may have conveyed a message pertaining to group identity. Adherence to a brooch style contributed to the integration of isolated individuals – whether within the same region or widely scattered – into a group whose social boundaries broke through those of local communities. The Davideni fibula was neither the phenotypic expression of a preformed Slavic identity, nor the passport of an immigrant from Ukraine. During the first half of the seventh century, at a time of general convulsion within the Avar qaganate following the defeat under the walls of Constantinople and the ensuing civil war, producing and wearing a fibula of Werner’s class I G similar to specimens from Mazuria, Hungary, or Crimea, may have been strategies for creating a new sense of identity for local elites.

⁵⁹ Mitrea 2001, pp. 327 fig. 67/4 and 341 fig. 80/2; Mitrea 1995, p. 124 fig. 1/2. For the sixth- and early seventh-century *imitatio Imperii* in the Lower Danube region, see Curta 2005a, pp. 185–186.

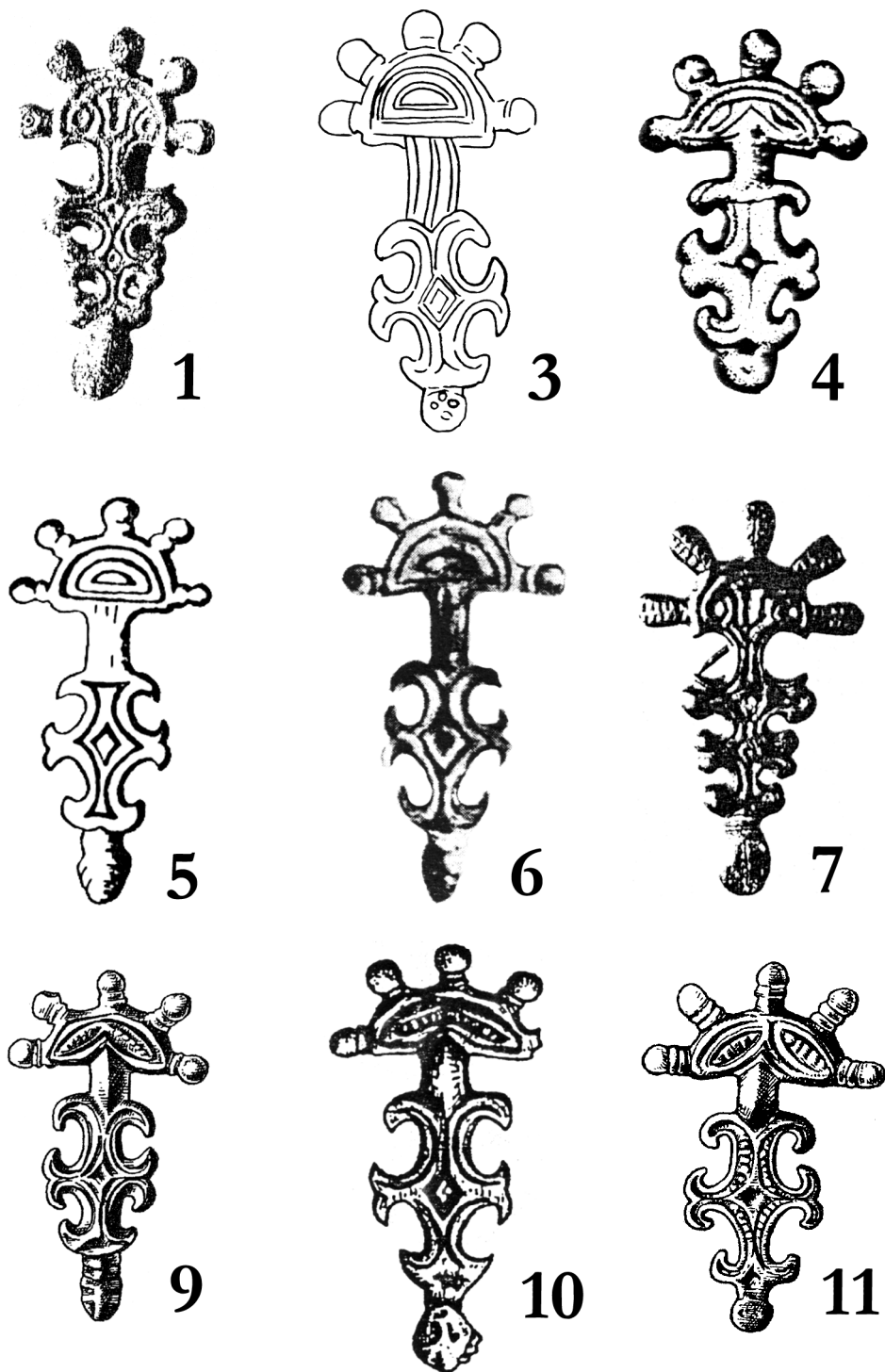
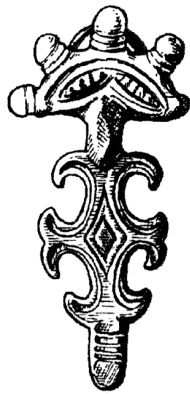


Fig. 1. Fibulae of Werner's class I G. Numbers refer to the corpus in the Appendix. Different scales.



12



14



15



16



17



19



21



22



25

Fig. 2. Fibulae of Werner's class I G. Numbers refer to the corpus in the Appendix. Different scales.

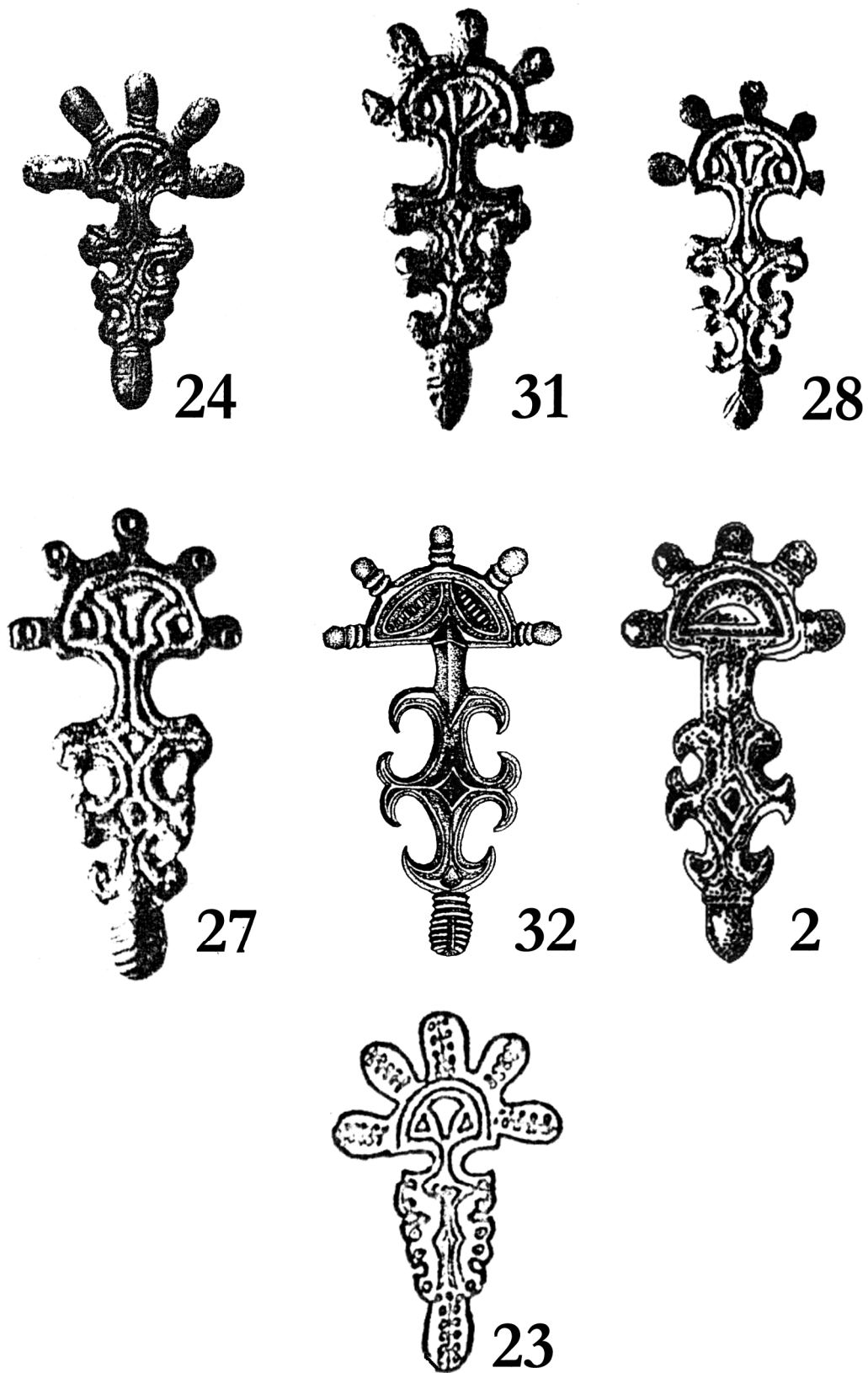


Fig. 3. Fibulae of Werner's class I G. Numbers refer to the corpus in the Appendix. Different scales.

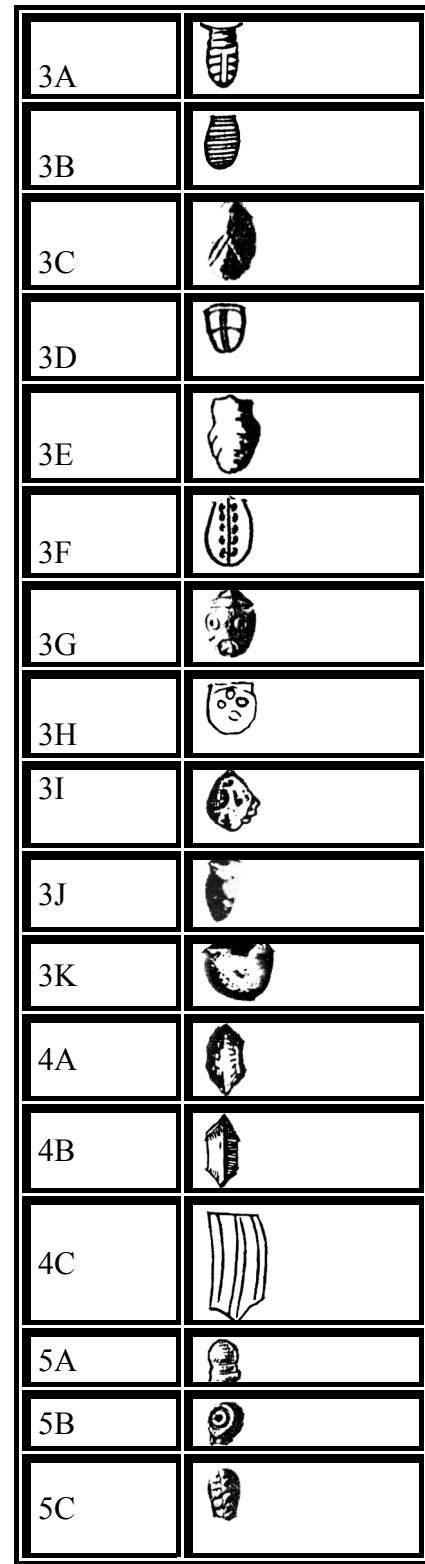
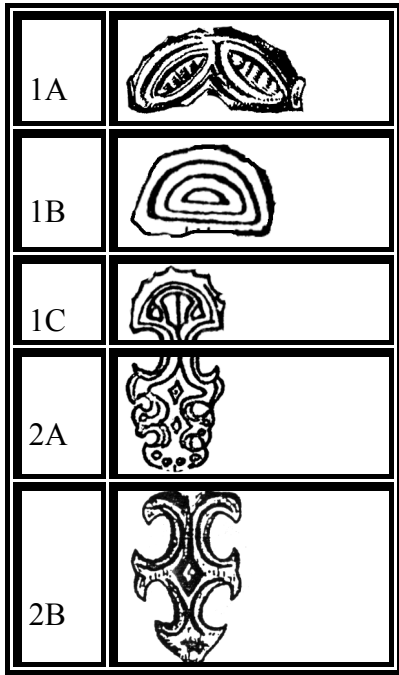


Fig. 4. Werner's class I G, brooch design parts: headplates (1 A–C), footplates (2 A–B), terminal lobes (3A–K), bows (4A–C), and headplate knobs (5A–C).

Near Neighbour Clustering of WernerIG

Similarity Coefficient: Jaccard
 Number of Neighbours considered: 5

	Number of shared near neighbours					
	5	4	3	2	1	0
Bartolty Wielkie	ÄÄÄÄÄ¿					
Eastern Prussia (no. 27)	ÄÄÄÄÄÄÄÄÄÄÄ¿					
Wiska	ÄÄÄÄÄÙ	ÄÄÄÄÄ¿				
Tumiany, grave 58	ÄÄÄÄÄÄÄÄÄÄÄÙ		3			
Tumiany (no. 25)	ÄÄÄÄÄÙ		3			
Kosewo, grave 366	ÄÄÄÄÄÄÄÄÄÄÄ¿			ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ¿		
Eastern Prussia (no. 28)	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ´					3
Tumiany, grave 74	ÄÄÄÄÄÄÄÄÄÄÄÙ		3			3
Tumiany, grave 195	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ					3
Tumiany (no. 24)	ÄÄÄÄÄÙ					3
Bratei, grave 167	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ¿					3
Liutari	ÄÄÄÄÄ¿		3			3
Sarmizegetusa	ÄÄÄÄÄÄÄÄÄÄÄ¿		3			3
Zemplenagard	ÄÄÄÄÄÙ	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ¿				3
Pastyrs'ke (no. 11)	ÄÄÄÄÄÄÄÄÄÄÄÙ		3		3	ÄÄÄ
Southern Russia (no. 30)	ÄÄÄÄÄÙ		3		3	3
Caricin Grad	ÄÄÄÄÄ¿		3		ÄÄÄÄÄÄÄ´	
Demianiv	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ				3	3
Kiskoros	ÄÄÄÄÄÙ				3	3
Davideni	ÄÄÄÄÄÄÄÄÄÄÄ¿				3	3
Ukraine (Kaniv district)	ÄÄÄÄÄÙ	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ				3
Luchistoe, burial chamber 10/4	ÄÄÄÄÄ¿	3				3
Pastyrs'ke (no. 12)	ÄÄÄÄÄÄÄÄÄÄÄÙ					3
Pekari	ÄÄÄÄÄÙ					3
Tumiany, grave 84	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ					

Fig. 5. Near-neighbour cluster analysis of 25 bow fibulae of Werner's class I G.

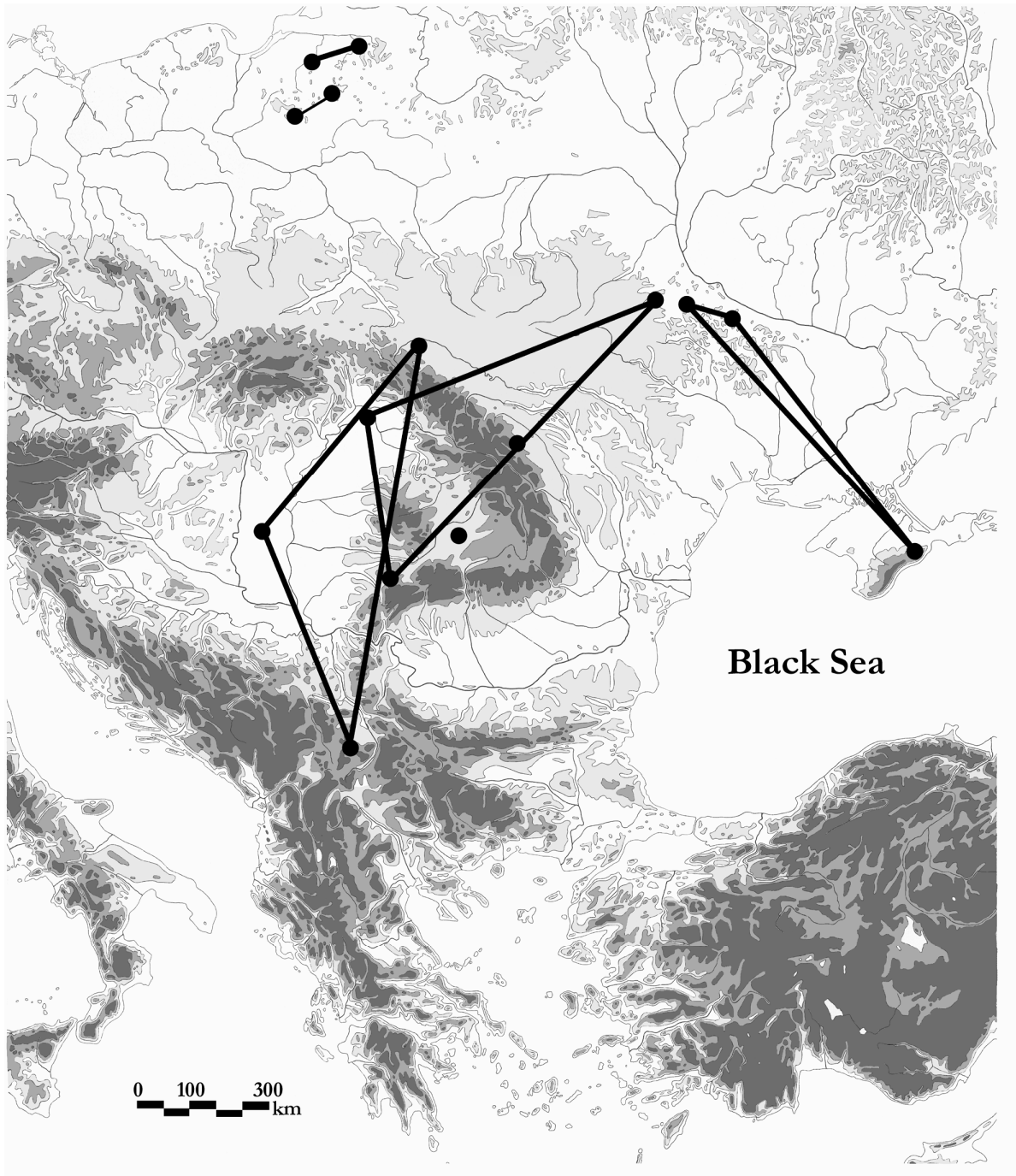


Fig. 6. Plotting of the nearest-neighbor similarity of 25 fibulae of Werner's class I D. Thick lines indicate five shared neighbors, thin lines show four shared neighbors.

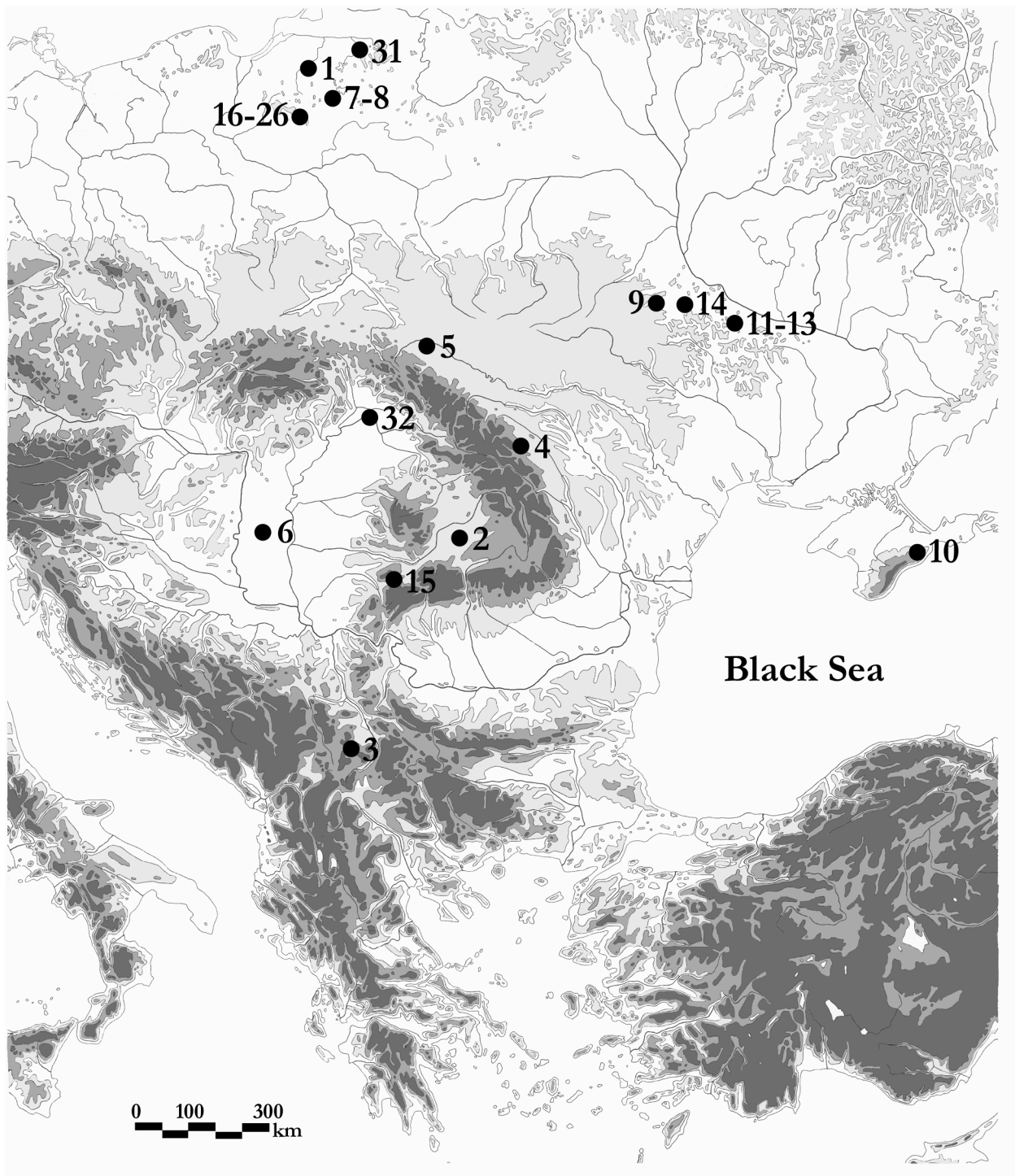


Fig. 7. The distribution of fibulae of Werner's class I G in Eastern Europe. Numbers refer to the corpus in the Appendix.

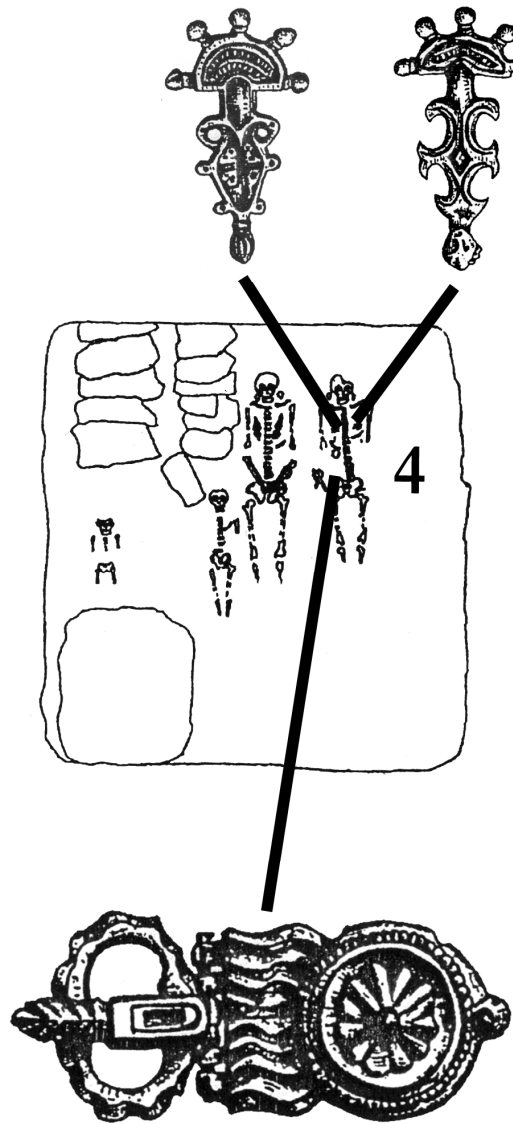


Fig. 8. Luchistoe, burial chamber 10 with grave goods associated with skeleton 4: (left) bow fibula of Werner's class I D, (right) bow fibula of Werner's class I G, and (below) belt buckle of the Trebizond class.

After Aibabin 1994, pp. 142 fig. 3 and 151 fig. 7.



Fig. 9. Kiskörös, grave 2, selected grave goods: earring (upper row), silver mount, brooch, and spindle whorl (middle row), fragments of bone case and knife (lower rows). After Horváth 1935, pl. 23.

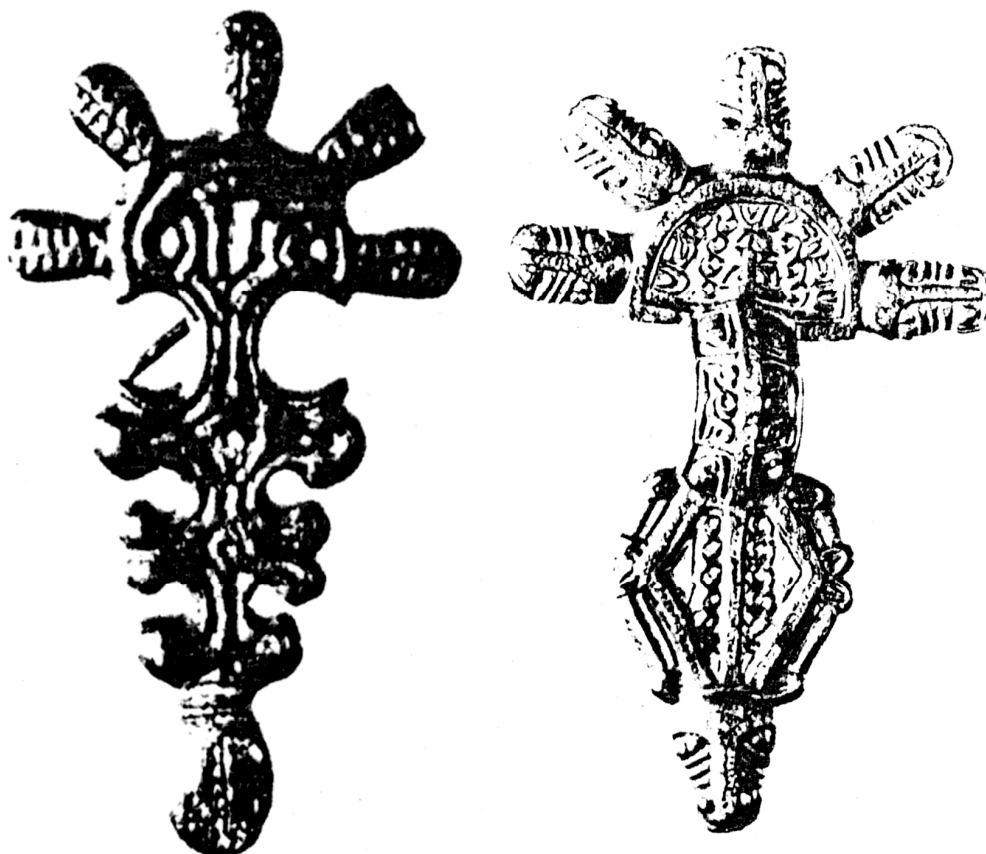


Fig. 10. Kosewo, grave 366: bow fibulae of Werner's class I G (left) and Dattenberg class (right).
After Kühn 1981, pls. 2/13 and 5/11.

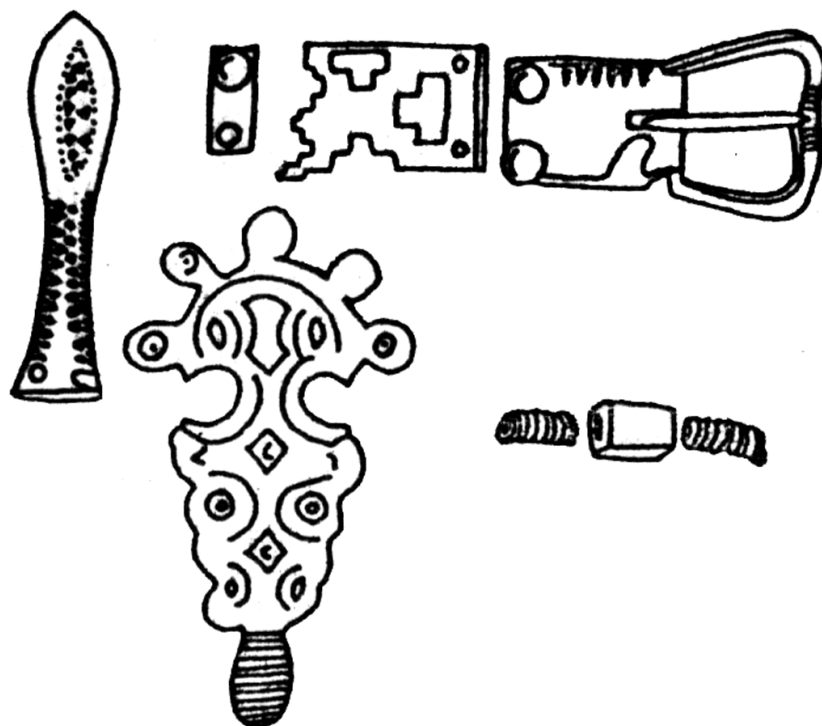


Fig. 11. Tumiany, grave 84: spear-shaped strap-end, an open-work belt mount, a belt buckle with embossed decoration, the bow fibula of Werner's class I G, and copper-alloy wire and glass beads. After Kulakov 1989, p. 257 fig. 41.

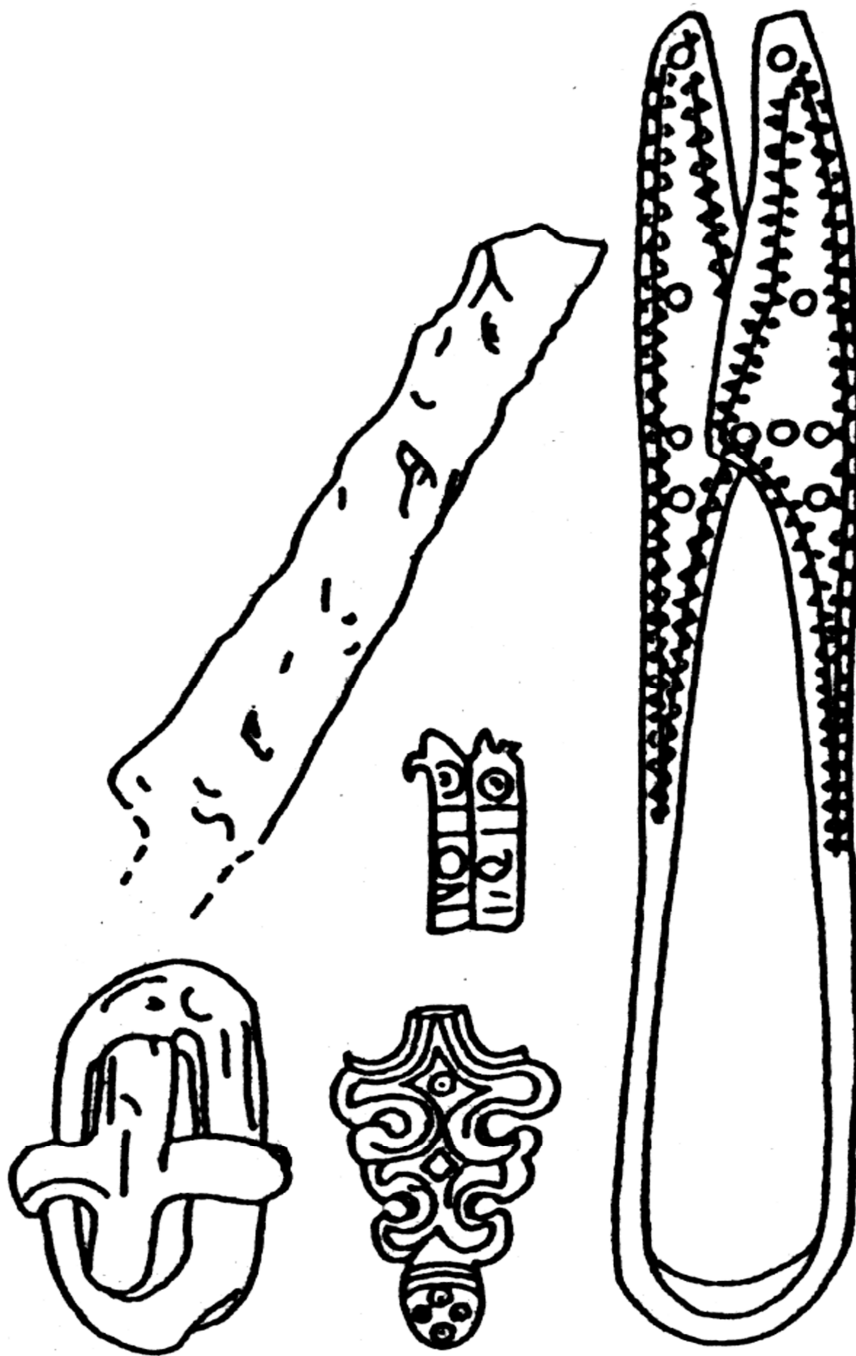


Fig. 12. Tumiány, grave 93: knife, belt buckle, belt mount, a fragment of a bow fibula of Werner's class I G, and scissors with damascened decoration. After Kulakov 1989, p. 260 fig. 44.

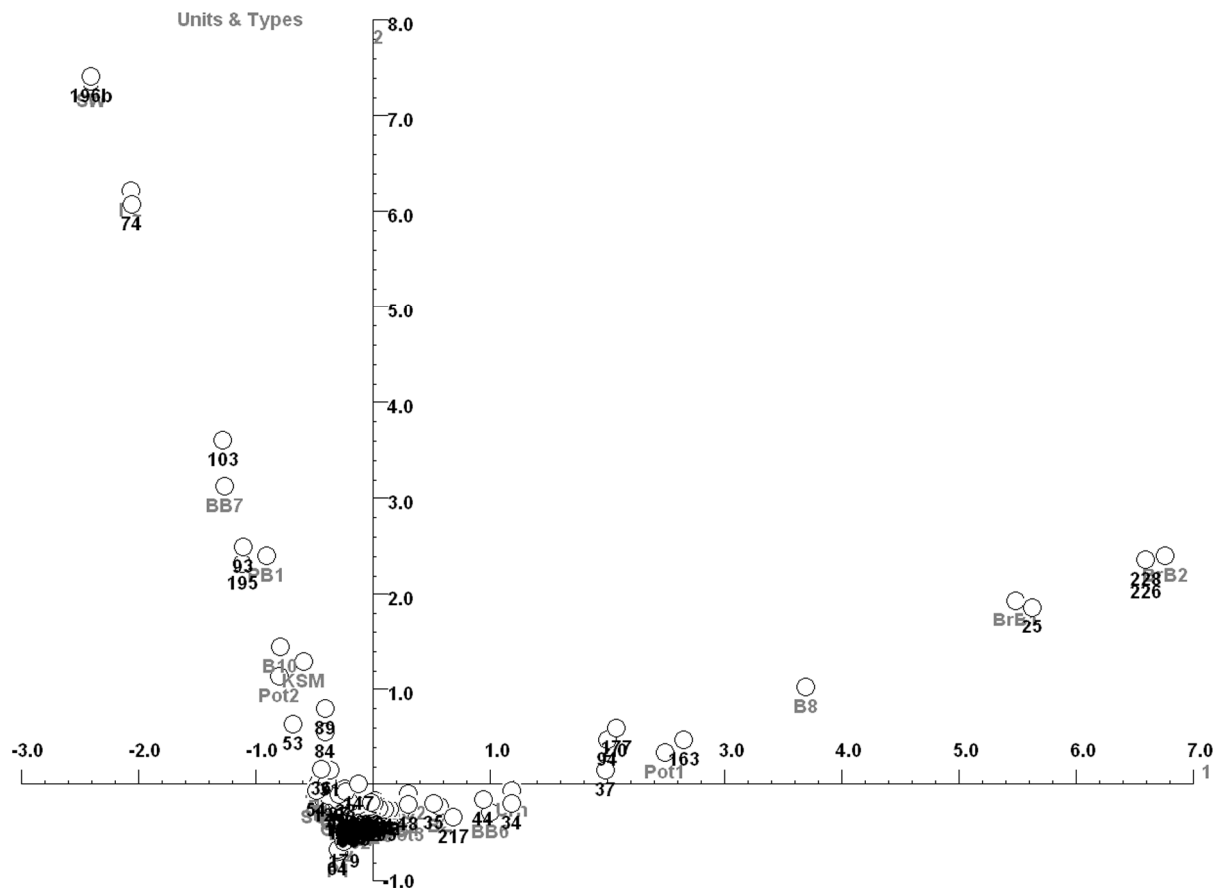


Fig. 13. Plot of the correspondence analysis of 76 graves from the Tumiany cemetery, with 54 associated grave goods. Abbreviations: B1: buckle, rectangular plate, cross-shaped tongue; B2: buckle, rectangular plate, 2 rivets; B3: buckle, rectangular plate, punched ornament; B4: buckle, no plate; B5: buckle, rectangular plate, open-work; B6: buckle, oval plate, 3 rivets; B7: buckle, triangular plate, 3 rivets; B10: buckle, no plate, cross-shaped tongue; B 11: buckle, oval plate, open-work, 4 rivets; B12: buckle, triangular plate, open-work; BB1: bow fibula, Munich-Aubing class; BB2: bow fibula, Weinheim class; BB3: bow fibula, Mühlhofen class; BB5: bow fibula, Werner's class I F; BB7: bow fibula, Werner's class I G; Be1: beads, amber; Be2: beads, glass, eye-shaped inlays; Be3: beads, glass, polyhedral; CBB1: crossbow fibula, double T-shaped foot, widened head; CBB2: crossbow fibula, rings on bow and foot; CBB3: crossbow fibula, animal-style ornament; CBB4: crossbow fibula, widened head and foot; CBB5: crossbow fibula, simple T-shaped foot; CBB6: crossbow fibula, double T on head and foot; DB1: disc brooch, cross-shaped ornament; DB2: disc brooch, concentric circles; DB4: disc brooch, lobes on the margins; FR1: finger-ring, spiral wire; FR2: finger-ring, widened middle section; JO1: jingling ornaments, chains, rectangular pendants; JO2: jingling ornaments, chains, horseshoe-shaped pendants; KSM: knife-sheath mounts; M1: mount, two incised lines, 2 or 4 rivets; M2: mount, 4 rivets, punched ornament; M3: mount, rectangular, 4 large rivets; M4: mount, T-shaped, 3 large rivets; M5: mount, rectangular, open-work; M6: mount, double T, open-work; P1: pendant, bronze, *au repoussé* ornament; P2: pendant, bronze, spectacle-shaped; PB1: plate brooch, 8 rivets; SCIS: scissors; SE1: strap-end, simple, 1 rivet; SE3: strap-end, spear-shaped, punched ornament; SH: strap holder; SP1: spurs, bronze; SP2: spurs, bronze, plate with 6 rivets; SP3: spurs, bronze, plate with 2 rivets; SW: spindle-whorl; T1: torc, hook-shaped ends; T2: torc, twisted wire revetment; Tw: tweezers; Urn: urn, "soul window" perforation; W: whetstone. All numbers refer to graves.

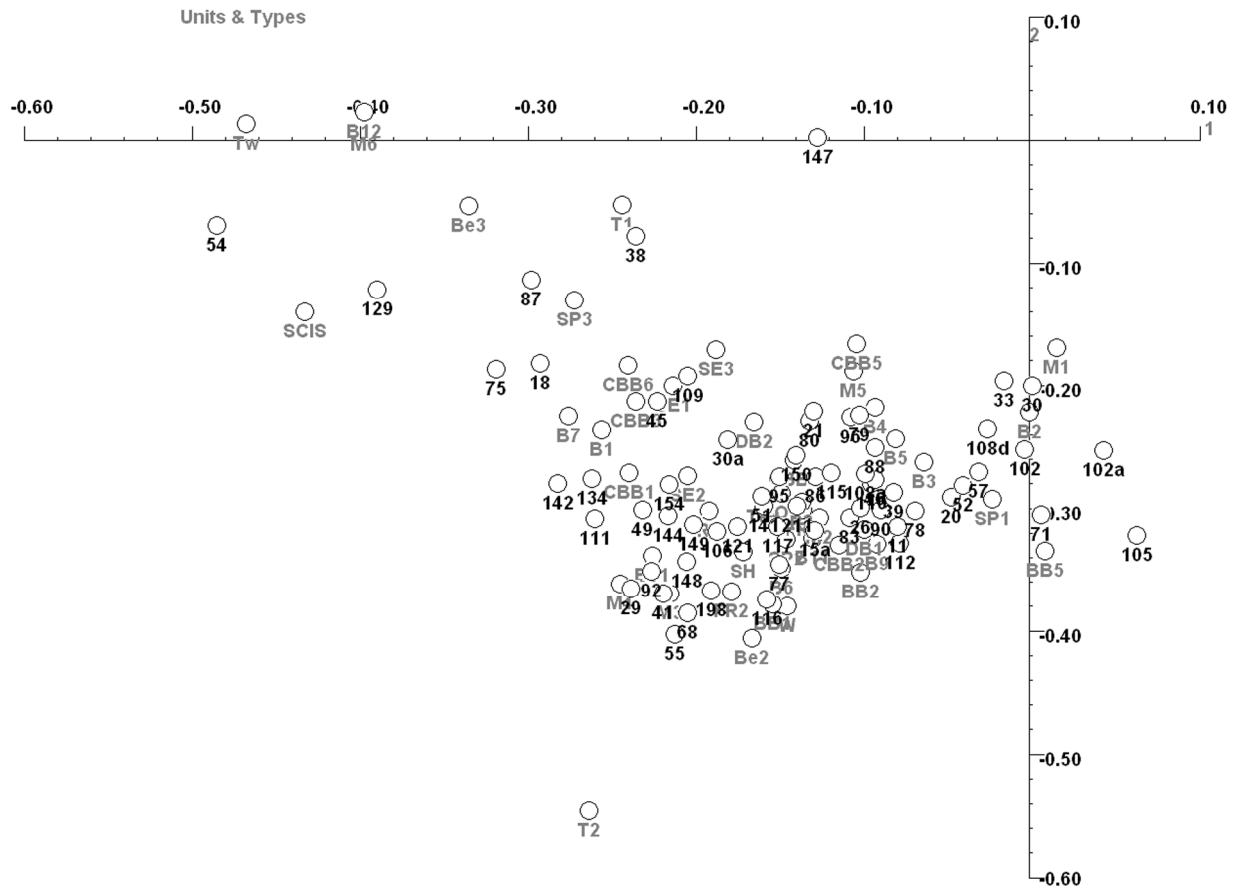


Fig. 14. Zoomed detail of the correspondence analysis plot of 76 graves from the Tumiany cemetery, with 54 associated grave goods. For abbreviated artifact names, see Fig. 12. All numbers refer to graves.

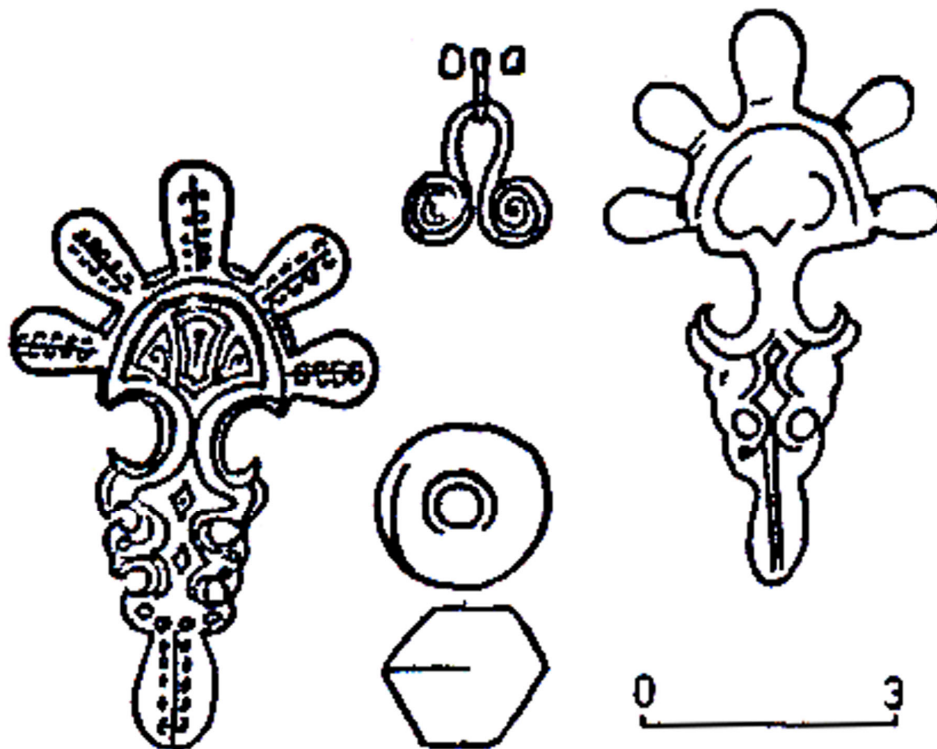


Fig. 15. Tumiany, grave 74: bow fibulae of Werner's class I G, spectacle-shaped pendant, and spindle-whorl. After Kulakov 1989, p. 256 fig. 40.

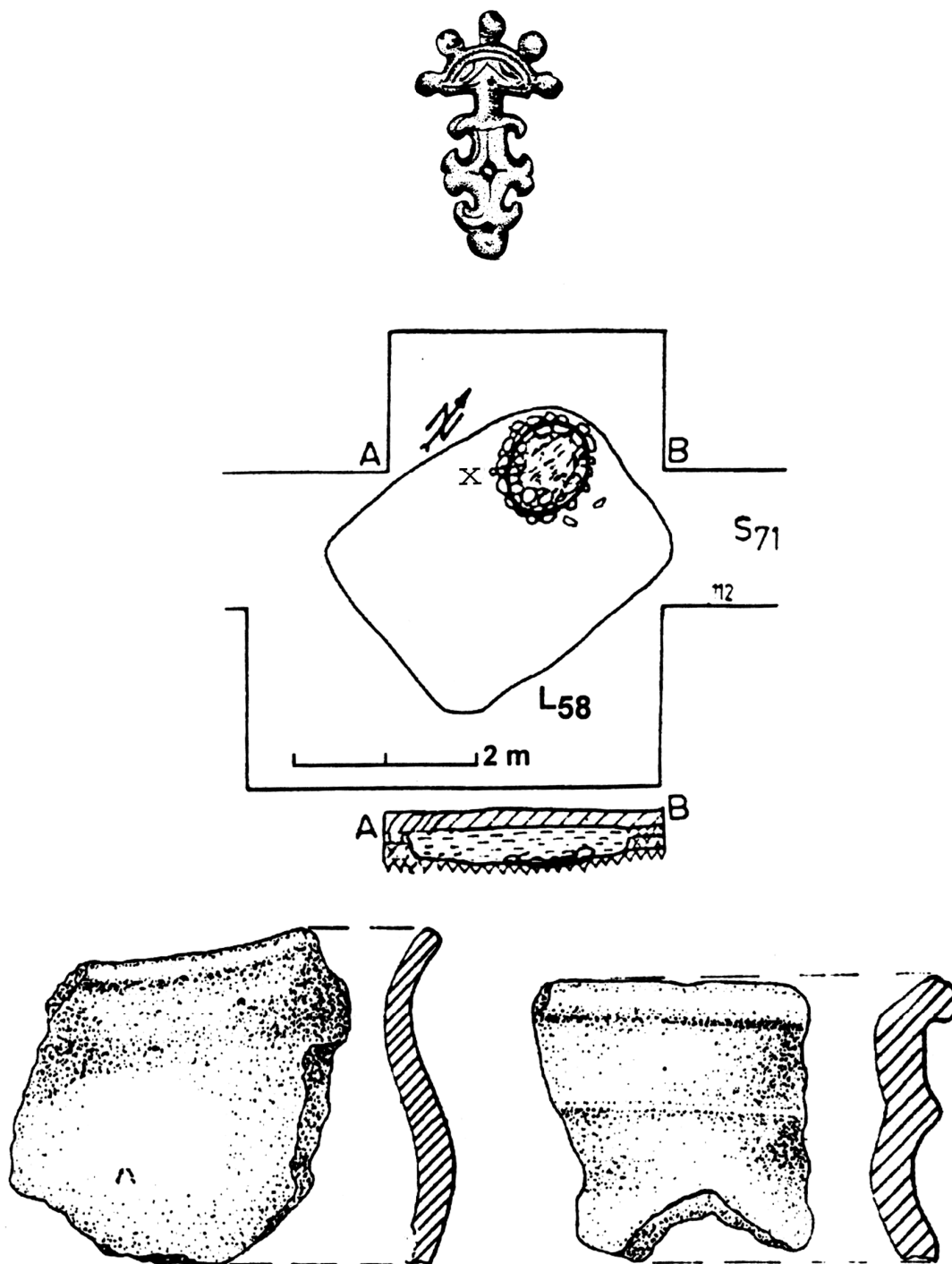


Fig. 16. Davideni, sunken-floored building no. 58. Plan with associated finds: bow fibula, hand-, and wheel-made pottery. After Mitrea 2001, pp. 304 fig. 44, 329 fig. 68, and 381 fig. 120.

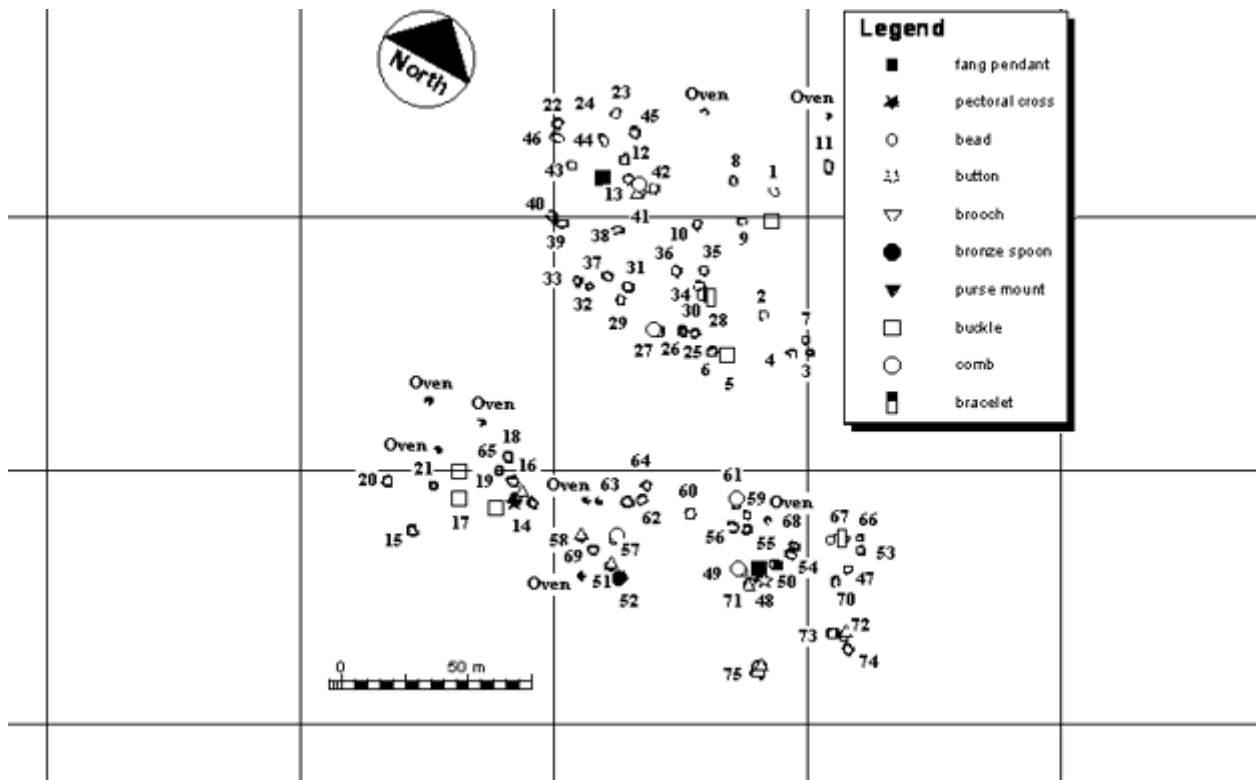


Fig. 17. Davideni, intrasite distribution of dress and personal accessories. Data after Mitrea 2001.

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FIBULAE OF WERNER'S CLASS I G: A CORPUS

1. Bartolty Wielkie (former Gross-Bartelsdorf, Olsztyn district, Poland); found in the cremation burial no. 15; copper-alloy; L=7; 1C2A3C4C5B; Kühn 1981:149 no. 198 and pl. 32/198.
2. Bratei (Sibiu district, Romania); found in the inhumation burial no. 167, together with a wheel-made pot; copper-alloy; L=5.6; 1b2B3K4B5A; Teodor 1992:138 no. 1 (where L=5.5).
3. Caričin Grad (Lebane district, Serbia); stray find; copper-alloy; 1B2B3H4C5A; Mano-Zisi 1954–1955:178 fig. 38; Vinski 1958:28 and pl. 18/3; Nestor 1961:445 fig. 4/3; Čorović-Ljubinković 1972:47 and fig. ½; Popović 1984:174 and 175 fig. 187; Ercegović-Pavlović and Kostić 1988:47.
4. Davideni (Neamț district, Romania); found in the sunken building no. 58, together with handmade pottery; copper-alloy; L=6.8; 1A2B3K4A5A; Mitrea 1994–1995:446 and fig. 1; Mitrea 1995:128–129 and 126 fig. 2/2; Mitrea 2001:100 and 329 fig. 68/4.
5. Demianiv (Ivano-Frankivs'ke district, Ukraine); settlement find; 1B2B3E4C5A; Baran 1972:161–162 and 52 fig. 18/9; Baran 1975:129 and 133 fig. 33/3.
6. Kiskörös (Bács-Kiskun county, Hungary); found in the inhumation burial no. 2 (female burial), together with fragments of an iron bracelet (to which it was stuck), two silver earrings, glass beads, two bone needle case, a spindle-whorl, a knife, and two gilded copper-alloy mount; copper-alloy; L=5.5; 1B2B3J4C5A; Horváth 1935:35 and pl. XXIII/3; Csallány 1961:230 and pl. 272/8.
7. Kosewo (former Alt-Kossewen, Mrągowo district, Poland); found in the cremation burial no. 366, together with an identical fibula and another bow fibula (Kühn's Dattenberg class); 1C2A3D4C5C; Kühn 1981:57 and pl. 5/11; Kulakov 1989:183.
8. Kosewo (former Alt-Kossewen, Mrągowo district, Poland); found in the cremation burial no. 366, together with an identical fibula and another bow fibula (Kühn's Dattenberg class); 1C2A3D4C5C; Kühn 1981:57.
9. Liutari (Cherkasy district, Ukraine); stray find; 1A2B3E4B5A; Gavritukhin 1991b:128 and 143 pl. I/8; Korzukhina 1996:367–368 and 669 pl. 79/7.

10. Luchistoe (Bakhchesaray district, Crimea, Ukraine); found in the burial chamber no. 10, skeleton no. 4, together with a bow fibula (Werner's class I D) and a buckle of the Trebizond class; copper-alloy; L=6.5; 1A2B3I4A5A; Aibabin 1990:22 and 199 fig. 20/2; Aibabin 1994:133 and 151 fig. 7/1.
11. Pastyrs'ke (Cherkasy district, Ukraine); copper-alloy; 1A2B3K4B5A; Aberg 1919:77 and 75 fig. 82; Werner 1950:154 and pl. 30/36; Kudlaček 1964:15 and pl. 3/6; Prikhodniuk 1994:71 and fig. 7/5; Korzukhina 1996:378 and 618 pl. 28/3.
12. Pastyrs'ke (Cherkasy district, Ukraine); copper-alloy; 1A2B3B4A5A; Korzukhina 1996:378 and 618 pl. 28/2.
13. Pastyr'ske (Cherkasy district, Ukraine); copper-alloy; Korzukhina 1996:379.
14. Pekari (Cherkasy district, Ukraine); stray find; 1A2B3B4A5A; Gavritukhin 1991b:128 and 143 pl. I/9; Korzukhina 1996:356 and 669 pl. 79/6.
15. Sarmizegetusa (Hunedoara district, Romania); copper-alloy; L=7.0; 1A2B3A4B5A; Téglás 1897:288; Horedt 1956:106 and 107 fig. 2/2; Popa 1988:46 and fig. 6; Teodor 1992:138 and 146 pl. 5/6.
16. Tumiany (former Daumen, Olsztyn district, Poland); found in the cremation burial no. 58, together with two glass beads; 1C2A3G4C5B; Kühn 1981:107 no. 118 and pl. 19/118; Kulakov 1989:192 and 254 fig. 38/2.
17. Tumiany (former Daumen, Olsztyn district, Poland); found in the cremation burial no. 74, together with a similar fibula, a spindle-whorl, a spectacle-shaped pendant, and two glass beads; 1C2A3F4B5C; Kühn 1981:108 no. 120 and pl. 19/120; Kulakov 1989:192 and 256 fig. 40/2.
18. Tumiany (former Daumen, Olsztyn district, Poland); found in the cremation burial no. 74, together with a similar fibula, a spindle-whorl, a spectacle-shaped pendant, and two glass beads; 1C2A3F4B5C; Kühn 1981:108 no. 120 and pl. 19/122.
19. Tumiany (former Daumen, Olsztyn district, Poland); found in the cremation burial no. 84, together with an identical fibula, a belt buckle, a tongue-shaped strap end, perforated copper-alloy mounts, spiralic copper-alloy beads, and glass beads; 1C2A3B4A5B; Kulakov 1989:193 and 257 fig. 41/3.
20. Tumiany (former Daumen, Olsztyn district, Poland); found in the cremation burial no. 84, together with an identical fibula, a belt buckle, a tongue-shaped strap end, perforated copper-alloy mounts, spiralic copper-alloy beads, and glass beads; 1C2A3B4A5B; Kulakov 1989:193.
21. Tumiany (former Daumen, Olsztyn district, Poland); found in the cremation burial no. 93, together with an iron belt buckle, a knife, and scissors with damascened decoration; copper-alloy, fragment; 2A3H5A; Kühn 1981:109 no. 124 and pl. 20/124; Kulakov 1989:194 and 260 fig. 44/1.
22. Tumiany (former Daumen, Olsztyn district, Poland); found in the cremation burial no. 195, together with an identical fibula; 1C2A3D4C5A; Kulakov 1989:200 and 273 fig. 57/5.
23. Tumiany (former Daumen, Olsztyn district, Poland); found in the cremation burial no. 195, together with an identical fibula; 1C2A3D4C5A; Kulakov 1989:200 and 273 fig. 57/5.
24. Tumiany (former Daumen, Olsztyn district, Poland); found in a cremation burial, together with the fragment of another bow fibula (Werner's class II C); 1C2A3A4C5A; Kühn 1981:114 no. 151 and pl. 24/151.
25. Tumiany (former Daumen, Olsztyn district, Poland); allegedly found in the cremation burial no. 42 (which in fact only produced a bow fibula of Kühn's Munich-Aubing class) together with an identical fibula; 1C2A3G4C5B; Kühn 1981:106 and pl. 19/114.
26. Tumiany (former Daumen, Olsztyn district, Poland); allegedly found in the cremation burial no. 42 (which in fact only produced a bow fibula of Kühn's Munich-Aubing class) together with an identical fibula; 1C2A3G4C5B; Kühn 1981:106.
27. Unknown location (Eastern Prussia); copper-alloy; 1C2A3C4C5B; Kühn 1981:263 no. 407 and pl. 63/407.
28. Unknown location (Eastern Prussia); copper-alloy; 1C2A3G4C5C; Kühn 1981:263 no. 408 and pl. 63/408.
29. Unknown location (Kaniv district, Ukraine); copper-alloy; 1A2B3K4A5A; Kazanski 1999:108.
30. Unknown location (southern Russia); 1A2B3K4B5A; Kühn 1981:pl. 95/649.
31. Wiska (Suwałki district, Poland); copper-alloy; L=6.1; 1C2A3E4C5B; Okulicz 1973:477 fig. 243/d; Kühn 1981:410 no. 639 and pl. 94/639.
32. Zemplénagárd (Szabolcs-Szatmár district, Hungary); settlement find; copper-alloy; 1A2B3A4B5A; Wolf 1996:51 and 53 fig. 2/5.