

**THE TRZCINIEC AREA OF THE EARLY
BRONZE AGE CIVILIZATION: 1950-1200 BC**

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Editor's Foreword

The Trzciniec Culture, Trzciniec Cultural Circle and Trzciniec Horizon are the names of a cultural area in the borderland of Western and Eastern Europe at the 2nd millennium BC. For over half a century a discussion has been going on over the taxonomic identification (chronological and spatial) and genetic and ethnic interpretation of this cultural unit.

In the debate, the 1980's and 1990's mark a significant cognitive turn caused by the growth of the corpus of sources, the use of systematic methods for the study of mobile sources and the proliferation of regional ¹⁴C datings.

The present volume of "Baltic-Pontic Studies" is an attempt to register this breakthrough and a proposal for a new fitting of the Trzciniec phenomenon into the synthesis of Early Bronze Age Europe. The records include rudiments of new regional systematizations, foundations of their chronologies based on radiocarbon datings and a discussion of the mechanisms of socio-cultural changes which gave rise to the Trzciniec cultural area and later contributed to its disintegration.

A long-term intention of this volume giving a multifaceted view of the effects of the said cognitive breakthrough is to encourage a careful scrutiny of the development mechanisms of the European Early Bronze Age Civilization, in particular the role played in them by the societies inhabiting the drainages of the Baltic and Pontic Seas.

Editorial comment

1. All dates in the *B-PS* are calibrated [see: *Radiocarbon* vol.28, 1986, and the next volumes]. Deviations from this rule will be point out in notes.

2. The names of the archaeological cultures (especially from the territory of the Ukraine) are standarized according to the English literature on the subject [e.g. Mallory 1989]. In the case of a new term, the author's original name has been retained.

3. The place names located in the Ukraine have been transliterat from the versions suggested by the author (i.e. from the Belorussian, Ukrainian, Polish or Russian originals).

Victor I. Klochko

THE ISSUE OF THE EASTERN BORDER OF THE EASTERN TRZCINIEC CULTURE (LOBOIKIVKA METALLURGY)

Metallurgical traditions of the Bronze Age have been studied insufficiently and are particularly hard to relate to individual archaeological cultures. However, detailed investigations of metal items and remainders of production provide additional data for ethno-cultural studies.

According to I.I. Artemenko [1987], the Sosnytsa Culture, or rather, the Kiev and the Sosnytsa versions of the Eastern Trzciniiec Culture, as well as the Lebedivka group of sites, according to S.S. Berezanskaya [1985], occupied the Middle and the Upper Dnieper areas. Early-stage sites date back to the 15-13th century BC*, middle-stage sites date back to the 13-11th century BC, and late-stage sites belong to 11-9th century BC [Artemenko 1987:106-113]. The Loboikivka metallurgy of the Late Bronze Age is, in a certain way, connected with that territory [Klochko 1994:123-124].

The Loboikivka metallurgical centre was first identified by E. N. Chernykh [1976:190-195] as a special Late Bronze metallurgical district with a specific selection of types of artifacts and technology, typical of the left-bank Ukraine (first referred to as Zavadovo-Loboikivka hearth). A.M. Lescov related the Zavadovo foundry workshop to the Belozerka period, and included the Holovuriv foundry workshop in the "hearth". He broadly defined its chronological and territorial boundaries, and was the first one to point out to the so-called "foundry workshops", i.e., complex finds of foundry moulds, having described them as old production centres. A.M. Lescov broadened the specific set of items from that centre and proposed a thesis about its inclusion in the Srubnaya (timber-grave) Culture [Lescov 1981], referring to it as "Holovuriv-Loboikivka". I suggested that the centre be given the name of "Loboikivka" [Klochko 1993].

N.N. Cherednichenko approached the issue of cultural affiliation of that metallurgical tradition rather cautiously (referring to it as "metal of the Srubnaya tribes of the Dnieper area"), pointing out to a substantial difference between it and metal

* Author used an uncalibrated version of ^{14}C chronology (Editor).

items of the Don and the Volga Srubnaya Culture [Cherednichenko 1986:44-82]. He quoted this difference between metal artifacts of the Dnieper area and the Don-Volga region as an argument in favor of the need to divide the Srubnaya Culture-historic community into a number of local groups which, “most probably should be called independent cultures” [Cherednichenko 1986:42].

S.I. Tatarinov [1990] connects the Loboikivka metallurgy with the Donets mining-metallurgical centre of the Srubnaya Culture, though his opinion is based only on a single find, near the village of Pylypchatyno, of a foundry mould used to make a Kabakovka-type celt.

A clear difference between the Loboikivka, the Krasnyi Mayak (Noua-Sabatynovka) and the Srubnaya metal artifacts, revealed by E.N. Chernykh, as well as the territory outlined by A.M. Lescov, once allowed me to include this metallurgical tradition in the Sosnytsa Culture [Klochko 1994], though the hypothesis proved to be a wrong one.

Taking into account new finds of the Loboikivka artifacts in graves of the Srubnaya Culture, V.V. Otroshchenko and Y.Y. Rassamakin raised again the issue of the “Srubnaya” affiliation of that metallurgical tradition [Otroshchenko, Rassamakin 1997]. Meanwhile, they practically ignored the location of most of the Loboikivka foundry workshops and the finds of foundry moulds in the settlements, thus, confusing the question of cultural affiliation of manufacturers of the metal items with that of consumers of those foundry workshops’ products.

Therefore, let us consider the Loboikivka metallurgical complexes in detail.

A. METALLURGICAL COMPLEXES

1. The largest collection of foundry moulds for manufacturing items of the oldest Loboikivka types comes from the village of Holovuriv of the Boryspil district, the Kiev region (the Holovuriv foundry workshop) (Fig. 1:1). A larger part of the collection was published by I.N. Sharafutdinova [1973], and later on, five more fragments of moulds were found at the same site. Some of the new fragments were successfully glued to the old pieces. Most of foundry moulds from this workshop were cut in bars of quality light talc slate, and only one of them — for casting a single-lugged ornamented celt, hexahedral in section — was made of ceramics. The moulds are kept in the Boryspil Museum of Local History, the Kiev region. The finds of the Holovuriv foundry workshop include:

Fragments of a two-fold mould for casting spearheads (Fig. 2:1, 2). One fold is well-preserved; the other one exists only in two small fragments. This mould was

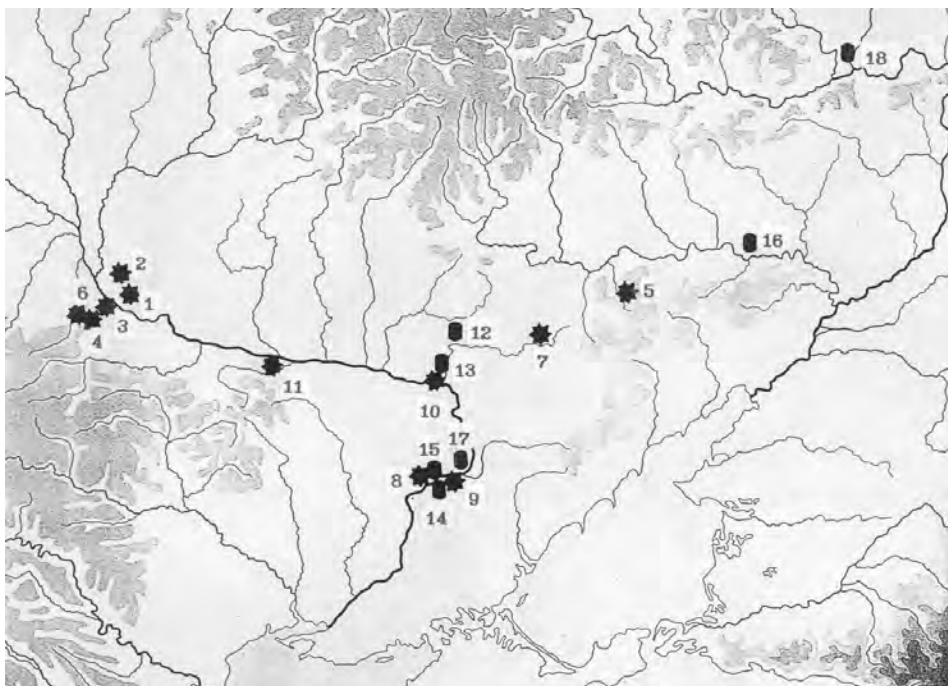


Fig. 1. The Loboikivka workshop in Ukraine. I. Foundry “workshops” and individual moulds: 1. the Holovuriv workshop; 2. the Zazymye settlement; 3. the Derevyane workshop; 4. the Mazepyntsi workshop; 5. Pylypchatyno; 6. Ivannya; 7. Vyazovok; 8. Kapulivka; 9. Zlatopol; 10. the Vovnygy settlement; 11. the Subotiv site. II. Hoards: 12. Kabakovka; 13. Loboikivka; 14. Blahovishchenka; 15. Borysivka; 16. Tryokhizbenka; 17. Nyzhnya Khortytsa; 18. Tereshkovo.

used for making rather big socketed spearheads with lugs on sockets and sharp-leaf or leaf-shaped blades.

Fragments of a double-sided mould for making dart heads with lugged sockets on the one side, and small hatchets on the other (Fig. 2:3, 4).

A fragment of a double-sided matrix for casting hatchets and some other flat items (Fig. 2:5).

Fragments of two parts of a two-fold mould for making a single-lugged (?) celt, hexahedral in section (Fig 2:6).

Half of a ceramic two-fold mould for casting a single-lugged ornamented celt, hexahedral in section (Fig 2:7).

A two-fold fragmented mould for producing large double-lugged asymmetrical celts (Fig. 2:8-9).

Half of a ceramic two-fold mould for making daggers of the Krasnyi Mayak type with round stops (Fig. 3:1).

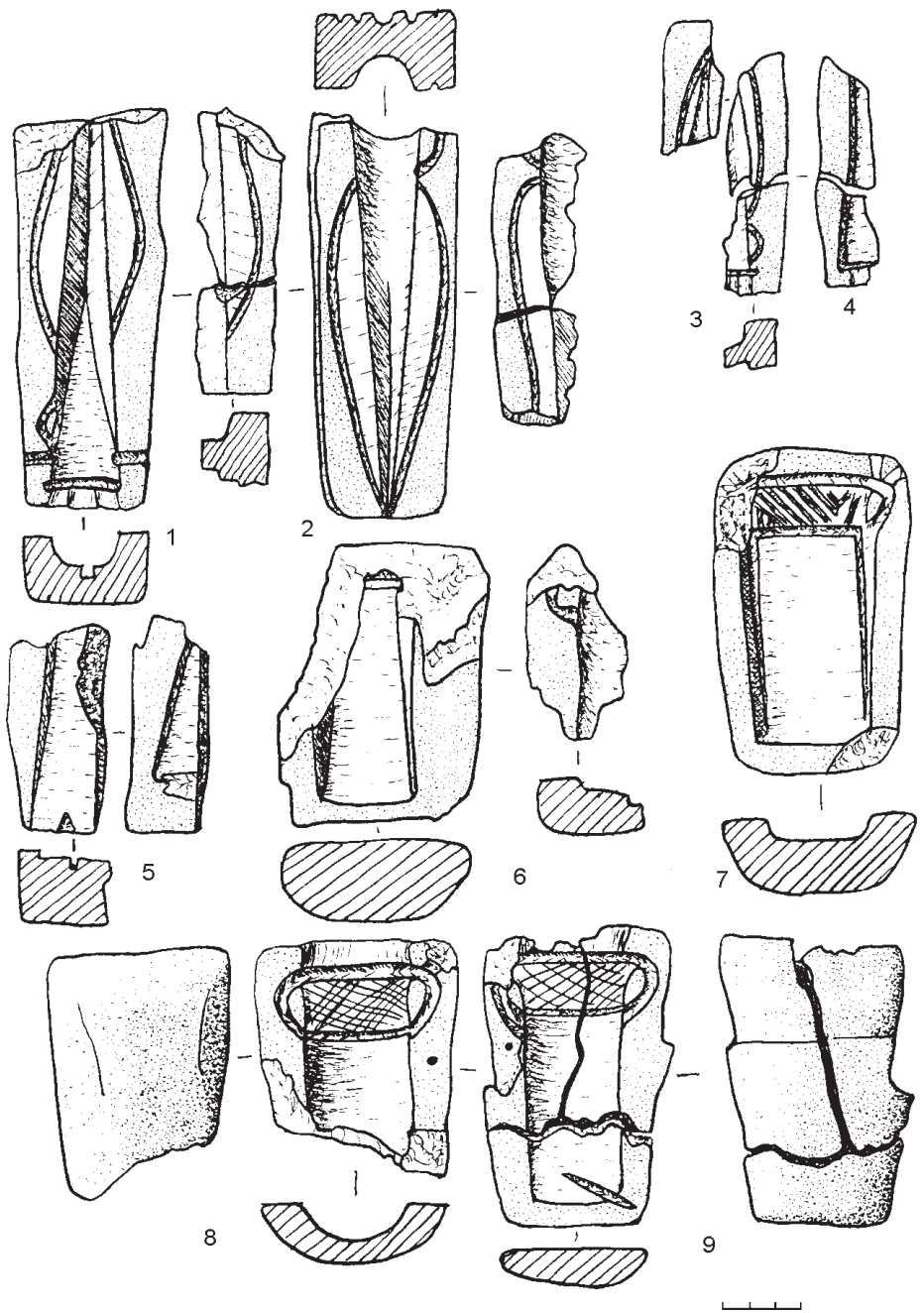


Fig. 2. The Holovuriv workshop.

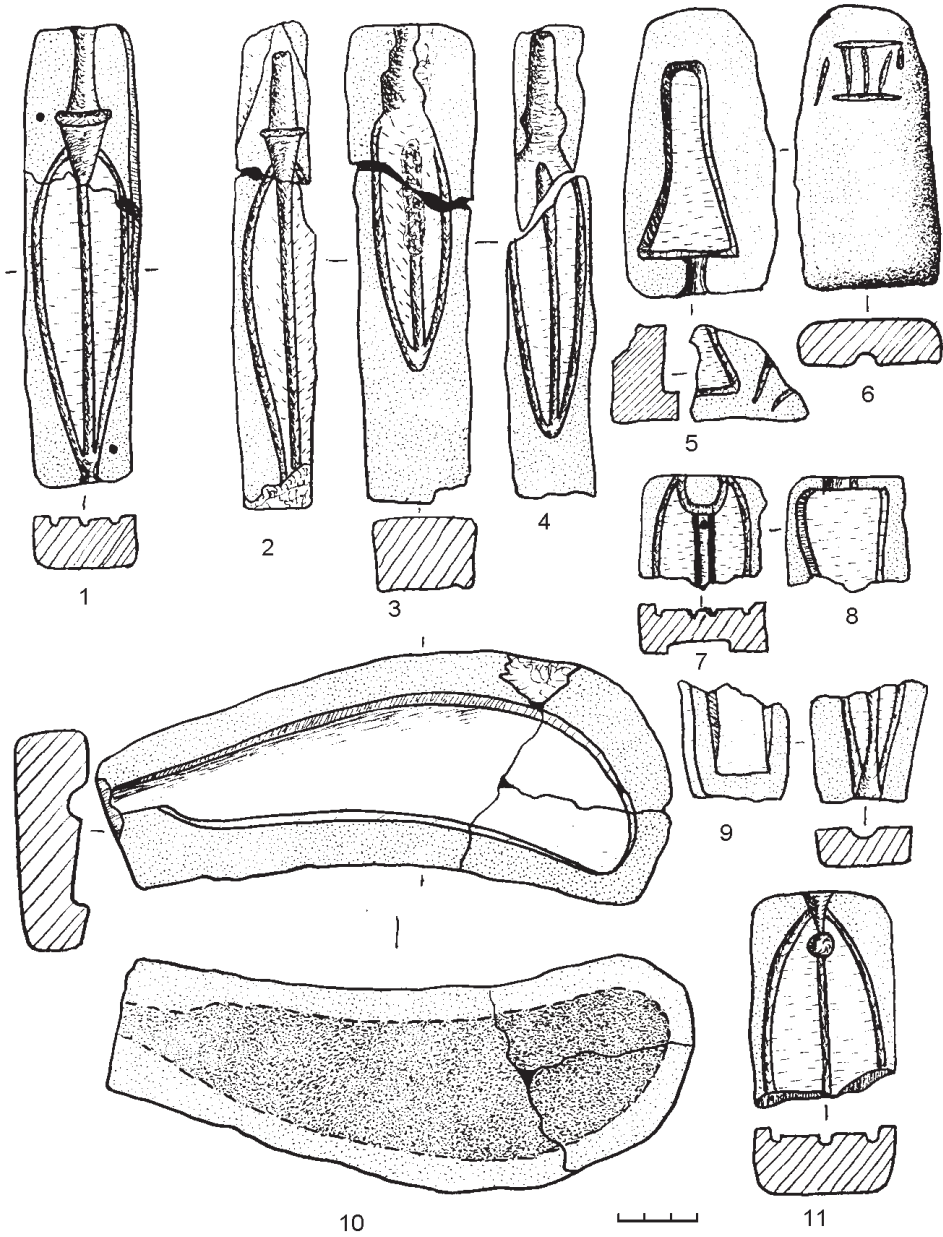


Fig. 3. The Holovuriv workshop.

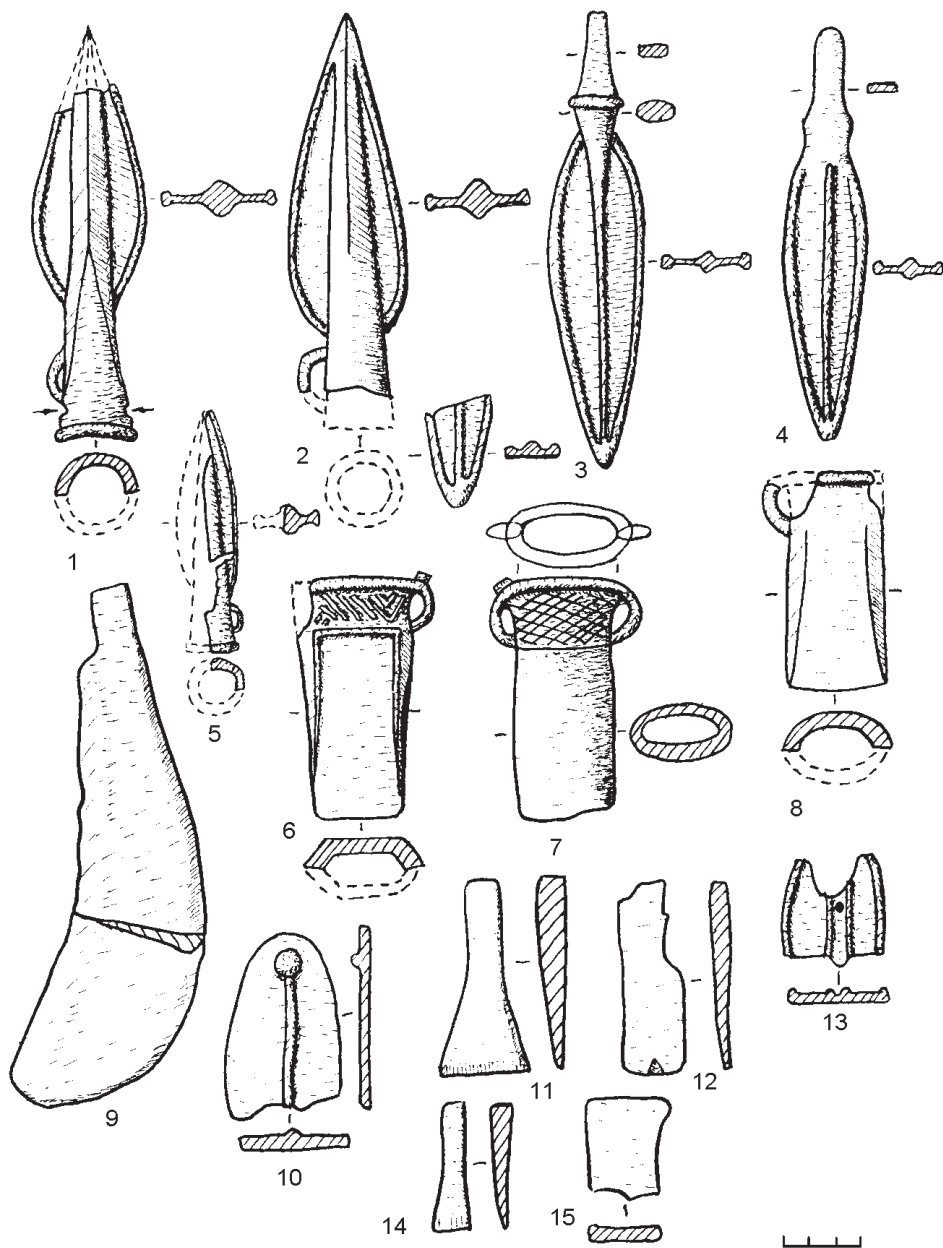


Fig. 4. The Holovuriv workshop. Reconstruction of the items.

A bar of talc slate, rectangular in section, with a partially preserved negative of a Krasnyi Mayak type dagger on one side, and a partially ground off, old Holovuriv-type knife with a “belted” tange, and another Holovuriv knife, cut on one of the wide sides (Fig. 3:2-4).

A half and a fragment of the other half of a two-fold mould for making small hatchets (or probably, chisels (?). The back side of the mould bears a carved sign (Fig. 3:5, 6).

A fragment of a double-sided mould for making razors and chisels (Fig. 3:7, 8).

A fragment of a double-sided mould for making chisels and daggers (Fig. 3:9).

A single-sided mould for casting choppers of the Kabakovska type: a part of a multicomponent set, in which every mould's back side was a cover for the next one. The set was fixed with a scale on the back side of the matrix (Fig. 3:10).

A fragment of a two-fold mould for making items of unknown purpose (Fig. 3:11).

The following tools were reconstructed with the help of the Holovuriv negatives:

Spearheads, with leaf-like blades, rhombic in section, with a lug and a rim on the socket — the Holovuriv-type spearheads (Fig. 4:1, 2).

The Holovuriv-type spearheads are the oldest in the Loboikivka metallurgical tradition. They are close to spearheads of the Borodino hoard, the Seima burial sites and the Pokrovka burial mounds (spearheads of the Seima type). Their common features include general shapes and forms of feathers/blades and lugs on their sockets. However, the Holovuriv spearheads have different proportions, shorter sockets and rims on their sockets. Later on, this line of development brought about spearheads with cuts on their blades (which helped save metal without reducing the size of items, and also served to strengthen the spearhead) — spearheads of the Zlatopol type [Klochko 1993:59-61].

Leaf-like dart heads with a lug and a rim on the socket are the Holovuriv-type dart heads (Fig. 4:5). I do not know of any other similar heads which in general represent smaller copies of the spearheads.

A tanged dagger with a leaf-like blade, enhanced, rhombic in section, and with a ring stop on the tange — a dagger of the Krasnyi Mayak type (Fig. 4:3).

Daggers of the Loboikivka tradition are represented predominantly by versions of the Krasnyi Mayak dagger that differs from similar southern tools by its more flattened top and a broader and shorter tange. These features appear the in clearest way in relatively late items (Derevyane, Mazepyntsi). Daggers from the oldest Loboikivka site, the Holovuriv workshop, are practically identical to the Krasnyi Mayak (Old Sabatinovka) items — a fact that allows to trace the borrowing of this type of tools from the Krasnyi Mayak centre to Loboikivka at the early stage of their development.

A tanged knife (a dagger?) with a flattened tange, a leaf-like blade, an enhanced oval section and a “belt” on the tange is the Holovuriv knife (Fig. 4:4). Such

knives were found in the Loboikivka hoard and in several sub-mound, so-called “late Srubnaya”, graves at the left-bank Ukraine.

Edges of dagger blades and spear- and dart-heads are enhanced with rims that were flattened during the founding process — a typical technique of founding specialists of Ukraine’s Late Bronze Age. The technique was used for riveting the tool blades in order to strengthen the bronze [Klochko 1994].

Single-lugged celts, hexahedral in section, with oval sockets, one of them decorated with an ornament under the socket (Fig. 4:6, 8). Rather similar to the oldest Sabatinovka celts, (for instance, the Mali Kopani workshop) [Klochko 1993:37, 55] from which they differ by the absence of a “cavity”.

A double-lugged asymmetric celt, oval in section, ornamented with oblique cuts (Fig. 4:7) — the Holovuriv-type celt, the prototype of the Kabakovka celts. These celts, alongside with cut spearheads, are the most characteristic types of the Loboikivka weapons. Early celts of these types display similarity to the Seima and early Kardashynka forms, while later ones (in fact, the Kabakovka forms) are close to the Bondarykha and the Zavadovo celts of the Belozerka period, which represent a further development of this line.

A chopper of the Kabakovka type (Fig. 4:9). Sometimes such tools are called sickles, but their blades are almost straight, and, therefore, in terms of use, these definitely agrarian tools were, most probably, close to small scythes and choppers.

Small hatchets or chisels (?) (Fig. 4:11, 14).

A razor, with a thin double section and a deep groove in the upper part — the Loboikivka type (?) (Fig. 4:13).

Artefacts of indefinite purpose (Fig. 4:10, 12, 15).

2. The mould from the Zazymye settlement of the Brovary district, the Kiev region (Fig. 1:2) dates back to approximately the same period [Berezanskaya 1985:Fig. 119:11]. It represents a four-sided matrix made of talc slate, with carved moulds of a celt, a flat axe (or a hatchet), a socketed chisel and a half-finished bar, rather large in diameter (Fig. 5). The celt, carved in the mould, is the oldest celt in the Kardashynka metallurgical tradition (which existed in the Middle Dnieper area practically synchronously with the Loboikivka tradition) [Klochko 1994]. It is a double-lugged celt, hexahedral in section, with two widely-set rollers on the socket and an ornament in the form of lowered “moustache” cords (Fig. 5:4), similar in form and proportions to the Seima celts [Chernykh 1970]. The assumed early dating of the Zazymye celt is supported by the Seima appearance of the celt and the items carved on other sides of the mould: a socketed chisel and a flat axe-hatchet (Fig. 5:2, 3). A similar socketed chisel was carved on a foundry mould from the Early Sabatinovka foundry workshop Mali Kopani which I refer to the 16th century BC. Flat axes, similar to the Zazymye item, come from the Odaili-Podari hoard in Romania, which was dated by A.M. Lescov to the 16-15th century BC [Lescov 1981]. He based his argument on a rather large, strongly curved hooky sickle of the “early

Srubnaya” type, which actually is the prototype of the Kabakovka sickles. A flat axe, very similar in form and size to the axe found in Zazymye, was discovered in the tolos grave in Zafer Papoura, Knoss, on Crete, dated back to the 15th century BC [Müller-Karpe 1980:Taf. 199:4]. The latter complex is particularly important for determining absolute dates of those artifacts because its dating is based on the historical Egyptian chronology.

Finds of prototypes of the Kardashynka celts in the Middle Dnieper area allow us to identify that region as the centre of their origin and, hence, as the centre of origin of the whole Kardashynka metallurgical tradition which requires a special study. However, the find of the mould in the Zazymye settlement (i.e. rather close to the Holovuriv workshop) explains the relation between these two metallurgical traditions that is reflected in a rather large number of common features in the forms of items and technologies.

3. A workshop in the village of Derevyane, Obukhiv district, Kiev region (Fig. 1:3) [Tallgren 1926; Bochkarev, Lescov 1979:Taf. 1:14, 16; 2:15, 17]. All moulds were made of quality light talc slate. Currently, they are kept in the Ukrainian National History Museum (Kiev). The site contained the following finds:

Part of a cut half of a two-fold mould of a dagger with a leaf-like blade and a flattened stop at the tange. Two pendants — “ducks” are carved at the back side of the bar (Fig. 6:1). A part of the cut other half of the same two-fold mould for making daggers displays part of a dagger blade and half-finished item; a negative of a flat hatchet is carved on the back side (Fig. 6:2).

Half of a two-fold mould for making tanged razors. There is a carved groove on the back side of the matrix, the purpose of which is unknown (Fig. 6:3).

A fragment of a single-sided mould for two choppers of the Kabakovka type (Fig. 6:4).

Half of a two-fold mould for casting double-lugged celts of the Kabakovka type (Fig. 6:5).

The moulds found at the Derevyane workshop may be used to reproduce the following items:

A flat hatchet with a slightly widened blade; choppers, most likely, of the Kabakovka type; a double-lugged celt, oval in section, of the Kabakovka type (Fig. 6:6); a tanged razor with a ring stop — the “Derevyane” version of the Loboikivka type, which differs from the Loboikivka razors by the absence of a groove at the top of the blade (Fig. 6:7); a dagger with a leaf-like blade; a flattened stop; a flattened short tange and a thin rhombic section — the “Derevyane” version of Krasnyi Mayak daggers (Fig. 6:8).

4. A workshop in the village of Mazepyntsi of the Velyko-Polovetsky district, Kiev region (Fig. 1:4) [Tallgren 1926; Bochkarev, Lescov 1979:Taf. 2:20, 21], currently kept in the Museum of Archaeology in Kraków, Poland. The moulds are made

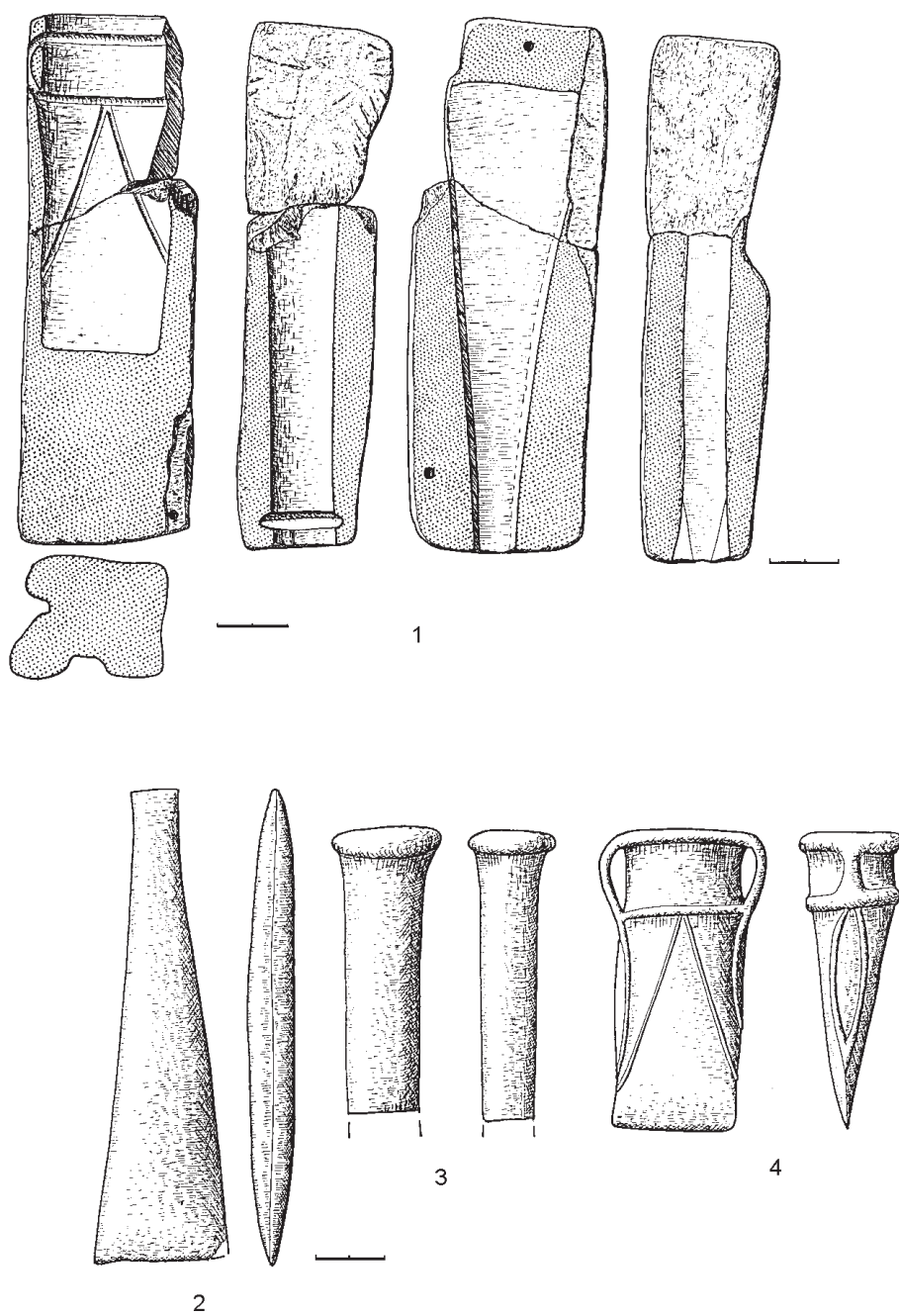


Fig. 5. Casting mould and bronze items. The Zazymye settlement.

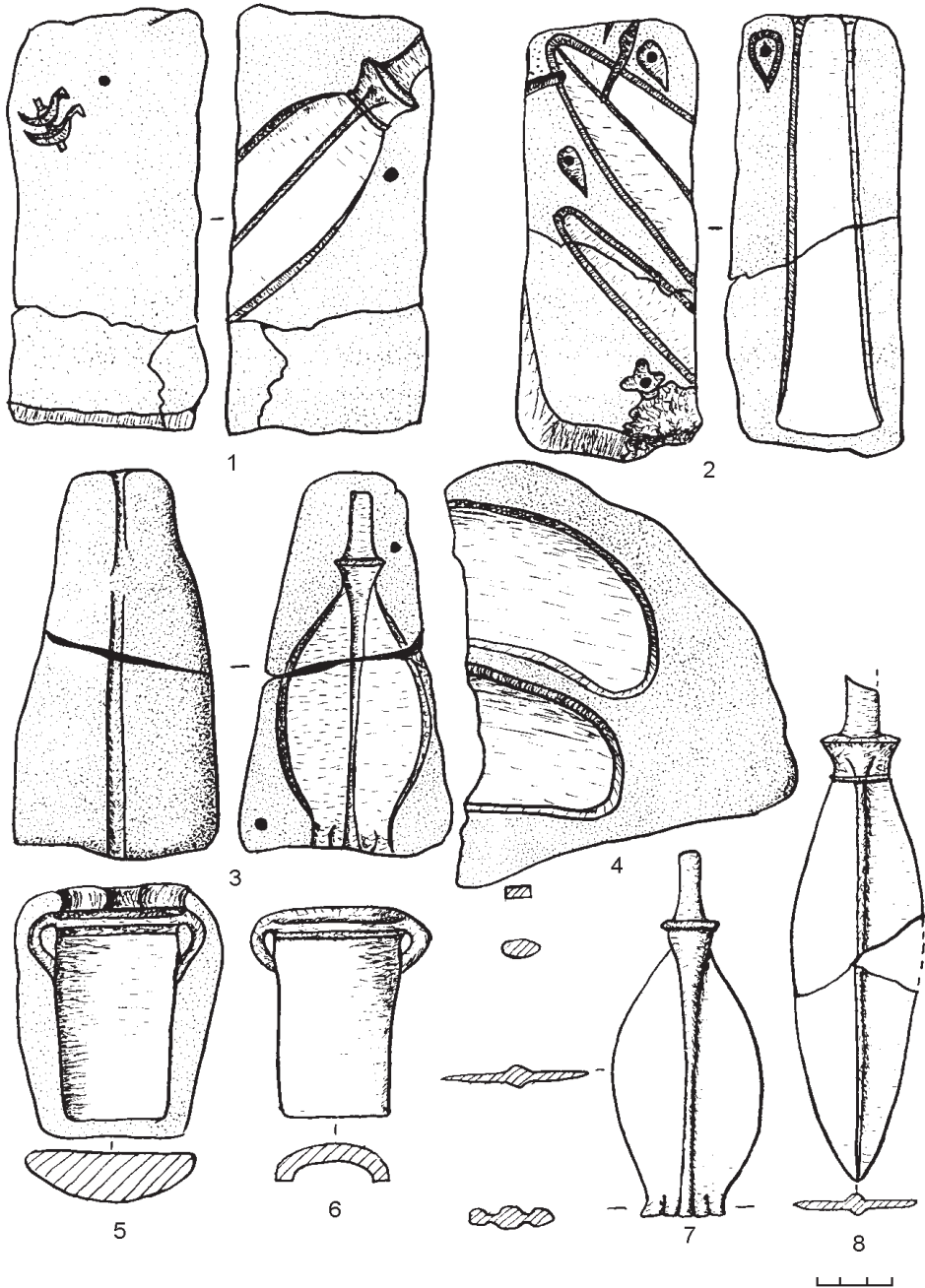


Fig. 6. The Derevyane workshop.

of dark talc slate. The collection includes: a two-fold mould for making a double-lugged celt, oval in section, ornamented with a “cord” on the socket (Fig. 7:1), and half of a two-fold mould for making daggers with ring stops (Fig. 7:2). The moulds of the Mazepyntsi workshop can serve to reproduce a double-lugged celt of the Kabakovka type (Fig. 7:3) and a dagger with a leaf-like blade and a ring stop on the tange, i.e., a dagger of the Krasnyi Mayak type (Fig. 7:2).

5. Half of a two-fold, double-sided mould from the village of Pylypchatyno of the Artemivsky district, Donetsk region (Fig. 1:5) [Tatarinov 1977:Fig. 2:1] designed for making double-lugged celts, hexahedral in section, of the Kabakovka type and socketed hooks (Fig. 7:4-5).

6. Half of a two-fold, double-sided mould from the village of Ivankovychi (previously Yankovychi) of the Vasylkiv district, Kiev region (Fig. 1:6) [Tallgren 1926; Bochkarev, Lescov 1979:Taf. 13:118], made of dark talc slate. The upper part of this mould is kept at the Kharkiv History Museum, and its lower part is in the Ukrainian National History Museum in Kiev. This mould was used to cast cut spearheads of the Zlatopol type; an artifact, the purpose of which is unknown (Fig. 7:6-8).

7. A mould from the village of Vyazovok of the Pavlograd district, Dniepropetrovsk region (Fig. 1:7) [Bochkarev, Lescov 1979:Taf. 2:22] — half of a two-fold mould for making daggers of the Krasnyi Mayak type with a flattened ring stop, and a tanged razor with an additional hole in the upper part of the blade — the “Vyazovok” version of the Loboikivka razors (Fig. 8:1-3). The item, made of talc slate, is kept in the Dniepropetrovsk History Museum.

8. Moulds from the village of Kapulivka of the Nikopol district, the Dniepropetrovsk region (Fig. 1:8) [Sharafutdinova 1960], made of talc slate: a fragment of a two-fold mould for making a hexahedral ornamented celt of indefinite type (Fig. 8:4); half of a two-fold mould for making double-lugged celts, oval in section, of the Kabakovka type (Fig. 8:5, 6); a lid of a mould for making Kabakovka-type choppers (identified by the shape of the snuff smear) (Fig. 8:7). The items are kept in the storage facilities of the Institute of Archaeology of the National Academy of Science of Ukraine in Kiev.

9. Two-fold mould from the village of Zlatopol of the Vasylivka district, Zaporizhya region (Fig. 1:9) [Bodyansky, Sharafutdinova 1967], made of dark talc slate; currently kept in the storage of the Institute of Archaeology of the National Academy of Science of Ukraine in Kiev. This matrix was designed for making spearheads with cut sharp-leaf feather, rhombic in section, and three rims on the socket — spearhead of the Zlatopol type (Fig. 9:1, 2, 3) [Klochko 1993:61].

10. Half of a two-fold mould for making double-lugged celts, oval in section, of the Kabakovka type, made of dark talc slate (Fig. 9:5). The item comes from the

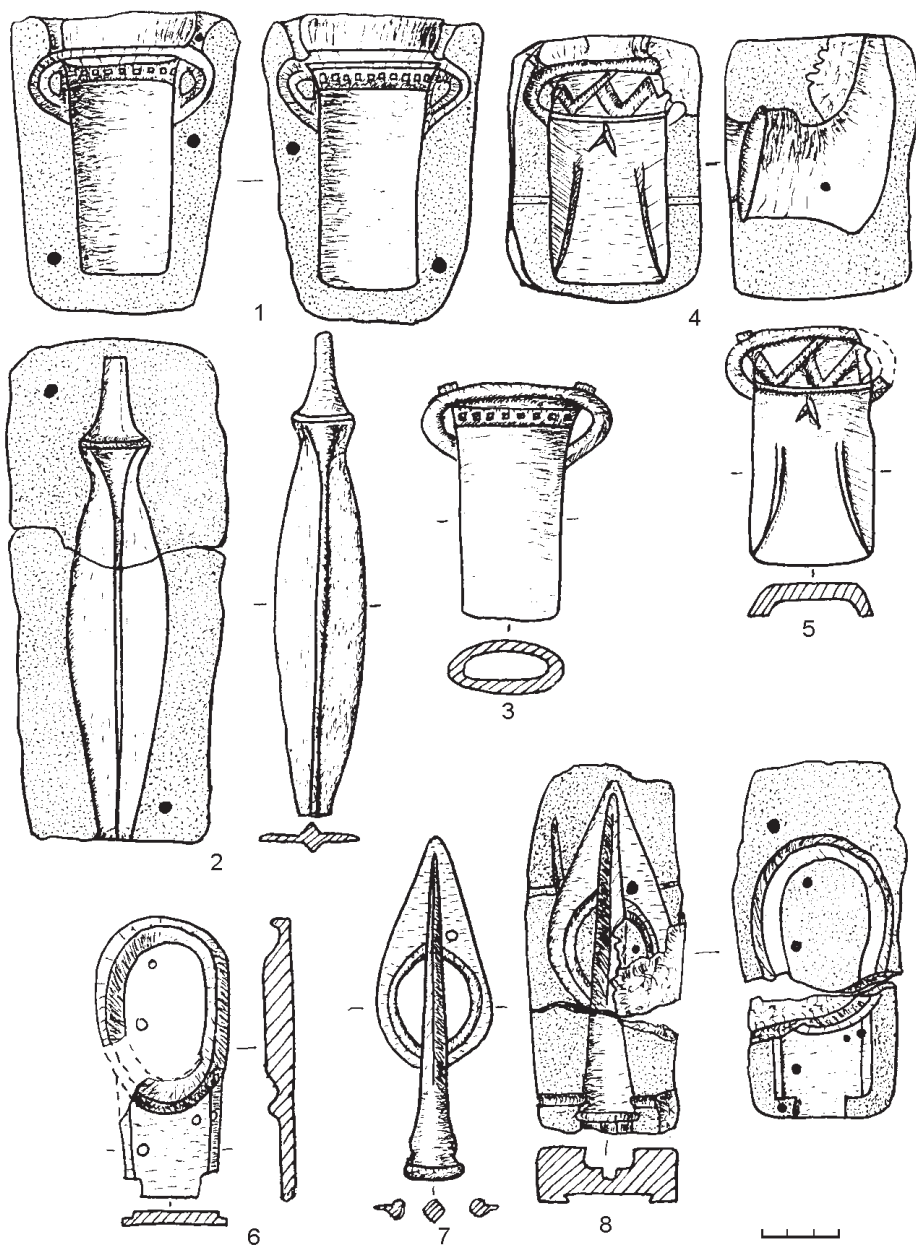


Fig. 7. 1-3 - the Mazepyntsi workshop; 4-5 Pylypchatyno; 6-8 - Ivannya.

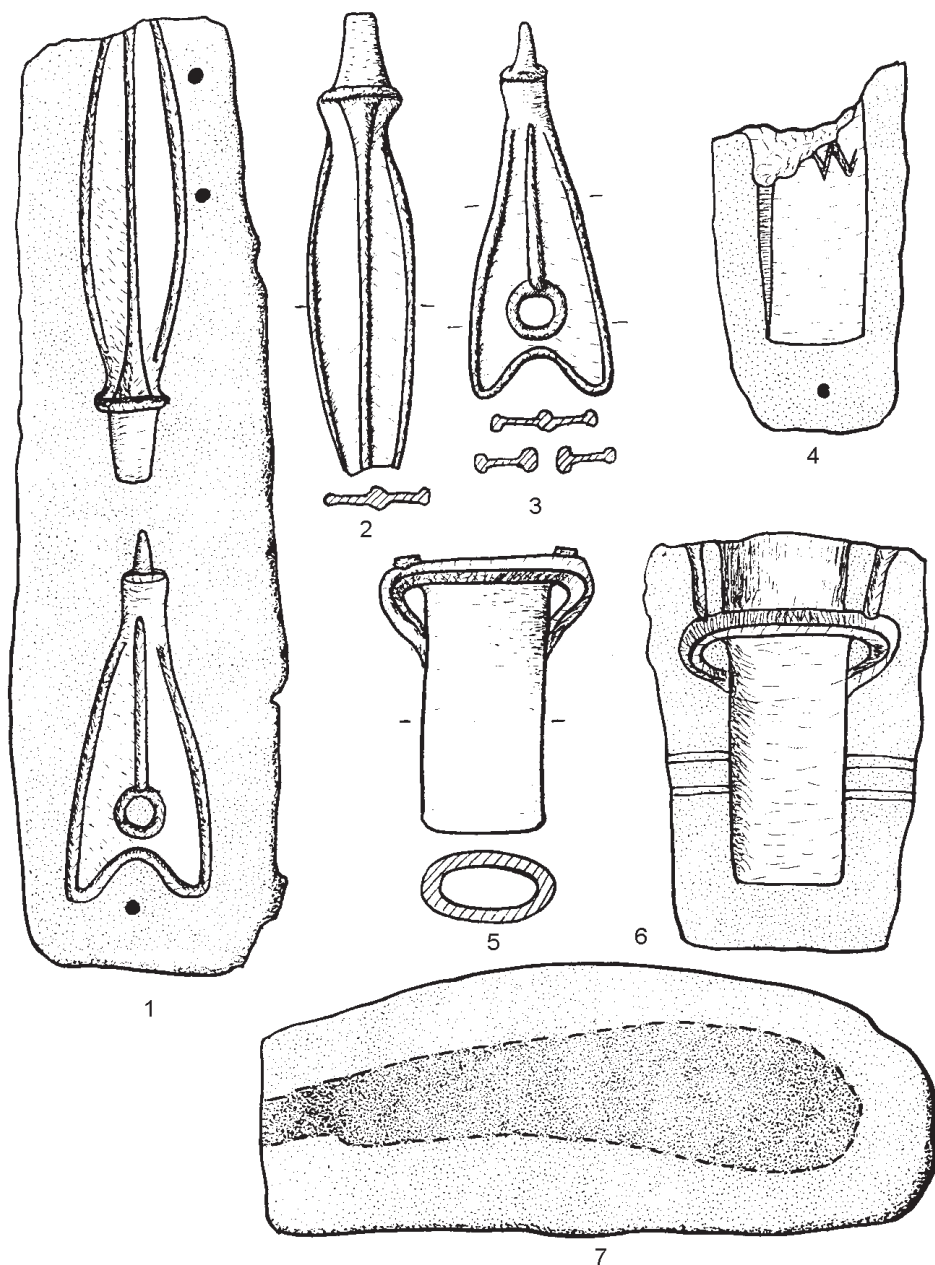


Fig. 8. 1-3 - Vyazovok; 4-7 - the Kapulivka settlement.

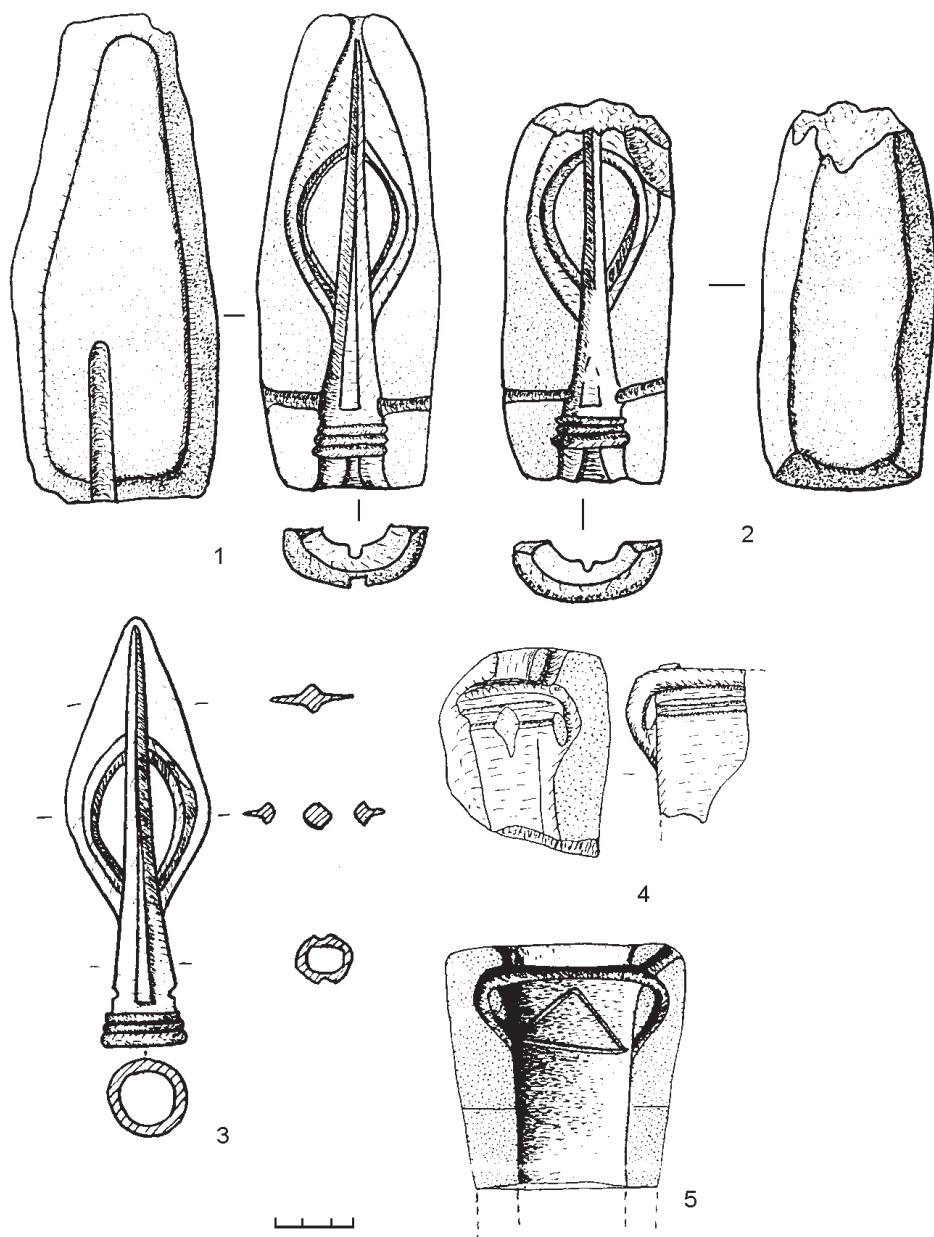


Fig. 9. 1-3 Zlatopol; 4 - the Subotiv site.

Vovnygy settlement in the Dnipropetrovsk district (Fig. 1:10). Currently it is kept in the storage of the Institute of Archaeology of the National Academy of Science of Ukraine in Kiev.

11. Fragment of a talc mould for making the Kabakovka-type celts (Fig. 9:4). From the Subotiv site, the Chyhyryn district of the Cherkasy region (Fig. 1:11). Currently it is kept in the storage of the Institute of Archaeology of the National Academy of Science of Ukraine in Kiev.

B. HOARDS OF METAL ARTEFACTS OF THE LOBOIKIVKA TYPES, FOUND TO THE SOUTH AND THE SOUTH-EAST OF THE MAIN CENTRES OF MANUFACTURE

12. The Kabakovka hoard was found in 1915 in the north-western sector of a major barrow situated on the right bank of the Orel river near Kabakovka khutors in the Kobelyaky district, Poltava region [Rudynsky 1928:Fig. 1:12]. The hoard is kept at the Poltava Natural History Museum. The items were found in a sharp-edged pot of the Srubnaya type with a short straight edge and traces of stripy smoothing on the surface.

The hoard consisted of six sickles, three celts and a dagger. The sickles — with hooks, curved backs, wide salient points and slightly concave, almost straight blades — in fact are not sickles but choppers of the Kabakovka type. The choppers were cast in a closed mould, but after further smith finishing the shape of the mouldings was changed substantially: the mouldings were given rectangular hooks and stretched blades. After that, the chopper could be slightly curved. Due to the further smith finishing, choppers of the Kabakovka hoard, although cast in the same mould, differ substantially in details (Fig. 10:1-6).

Celts — double-lugged, with oval sockets — belong to the Kabakovka type. In places where lugs join the socket, celts of this type often display traces of one or two cut-off or ground-off stalks of additional nozzles (ukr. term *litnik*). The use of such additional nozzles is a distinguishing feature of the Loboikivka celt-casting technology. Two celts are oval in section; the third one is hexahedral in section, ornamented with a relief “cord” under the socket (Fig. 10:8-10).

The dagger with an oval stop on the tange, with a flattened tange and a wide leaf-like blade, rhombic in section (Fig. 10:7) is a version of the Krasnyi Mayak dagger. Daggers of the Krasnyi Mayak type were also typical of the Sabatinovka and the Noua cultures [Klochko 1993].

13. The Loboikivka hoard was found in 1966 in the village of Loboikivka, a suburb of Dnipropetrovsk (currently within one of the city’s outskirts) (Fig. 1:13) by local

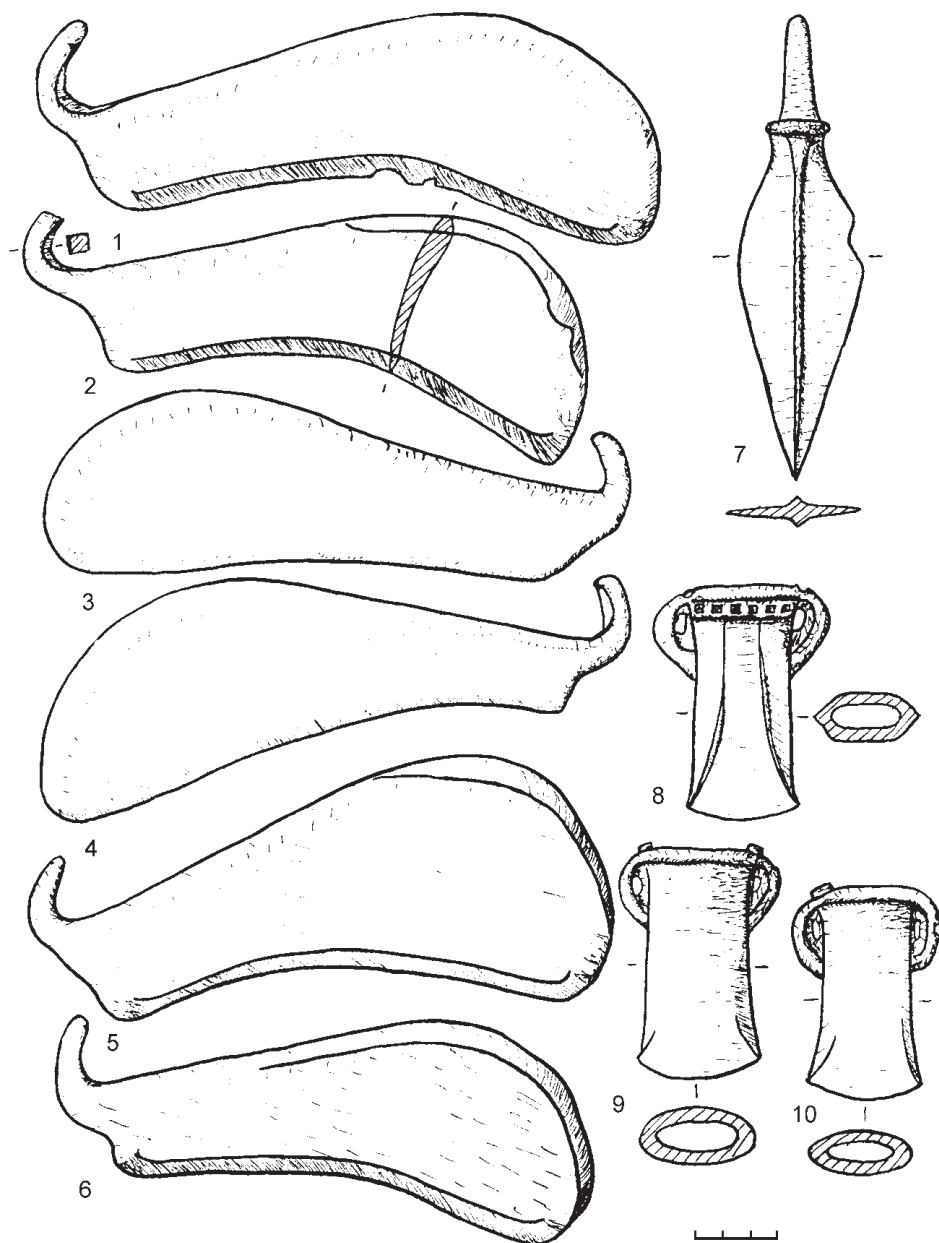


Fig. 10. The Kabakovka hoard.

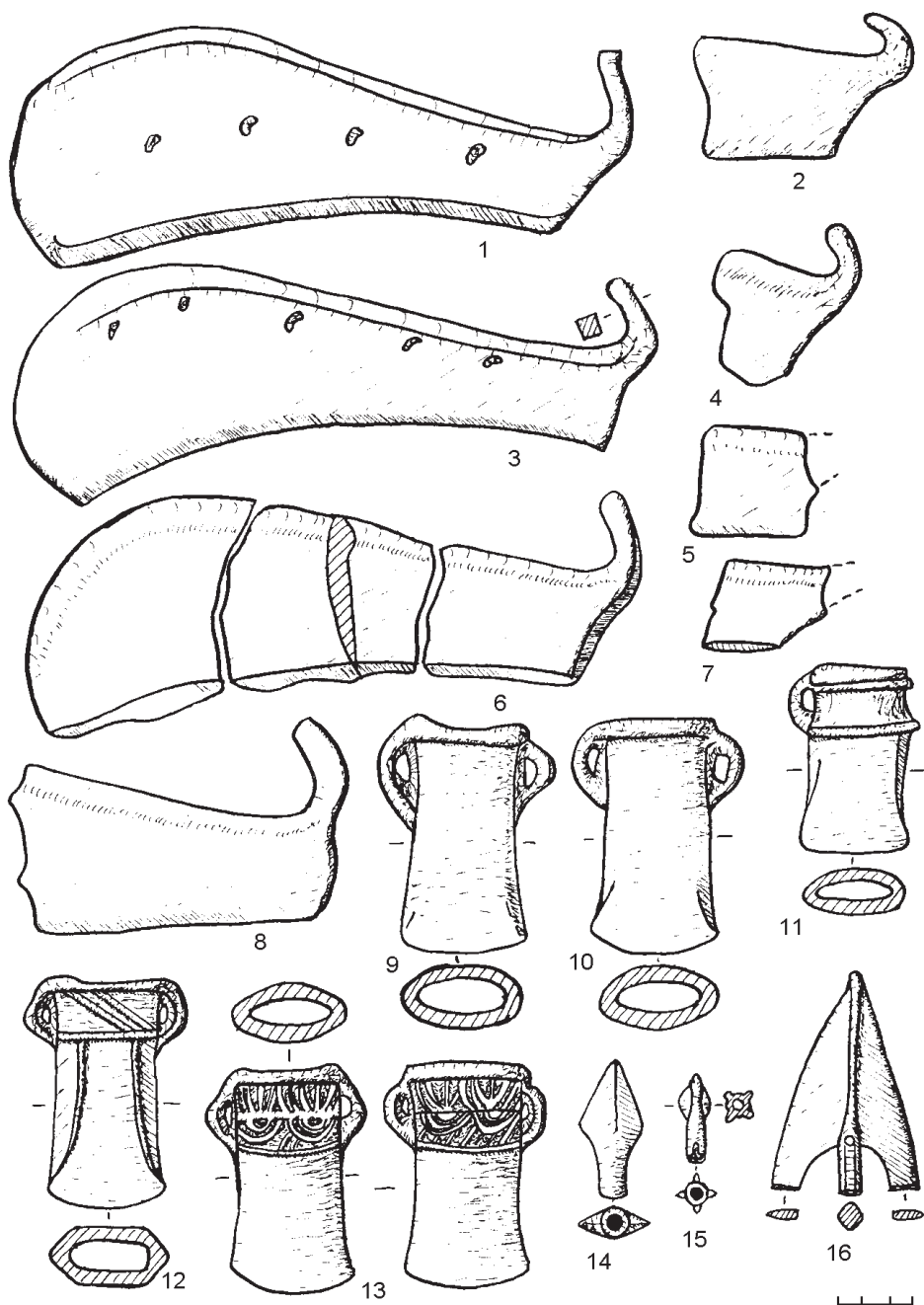


Fig. 11. The Loboikivka hoard.

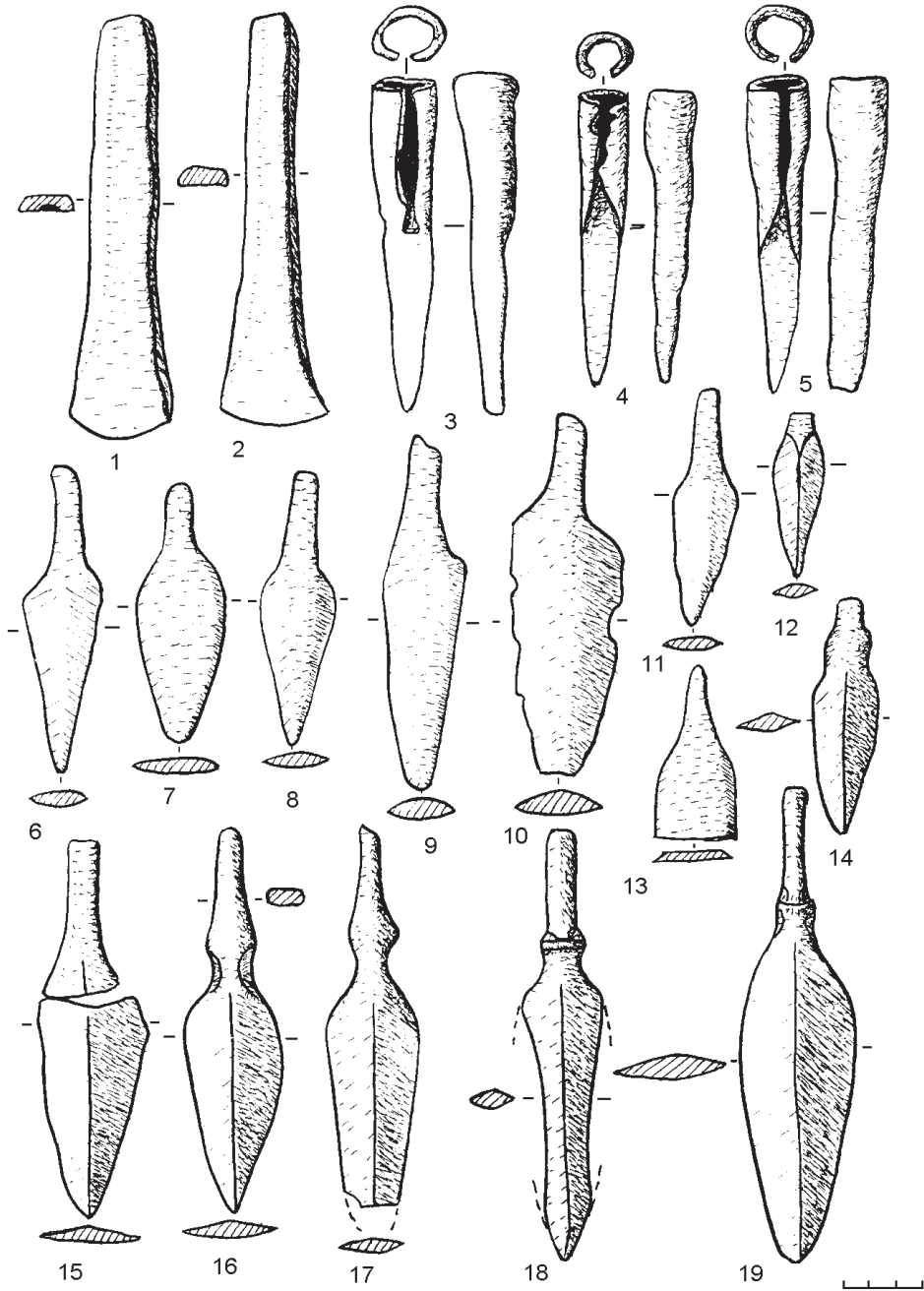


Fig. 12. The Loboikivka hoard.

dwellers who were digging a well near the Chaplynka river, the old bed of the Orel river. According to the men who found the hoard, the items were covered with “some dust”, i.e., the hoard, most probably, had been kept in a wooden container. Currently the hoard is kept in the Dniepropetrovsk History Museum. It is the largest of the Loboikivka hoards found to date: it included eight Kabakovka choppers (two of them preserved intact, the third broken into three pieces, and fractions of back sides of five other choppers) (Fig. 11:1-8). The hoard also included twelve more fragments of choppers of indefinite type (most likely, those were also Kabakovka choppers), most of them are fragments of the middle part of the blade.

The hoard also contained two double-lugged celts, oval in section, of the Kabakovka type, one of them decorated with a sophisticated ornamental composition in the socket (Fig. 11:9, 10, 13); a double-lugged celt, hexahedral in section, of the Kabakovka type, decorated with two rollers on the socket and oblique lines (Fig. 1:12); a single-lugged celt, oval in section, with two “cords” on the socket (Fig. 11:11).

Arrowheads — a socketed bullet-shaped head with a four-petal point (Fig. 11:15) and socketed head with a wide, triangular body, rhombic in section, with well-hammered blades (Fig. 11:14). Similar arrowheads were found in the left-bank Ukraine, as well as in the Volga and the Ural regions [Klochko 1993:31].

The upper part of a large spearhead (Fig. 11:16), which allows reconstruction of the rest of the head: a wide leaf-like blade with large oval cuts and a rhombic section — a spearhead of the Zlatopol type.

Two flat hatchets, trapeziform in section, with curved blades (Fig. 12:1, 2). The trapeziform section indicates that the blades were cast in a single-sided mould with a lid. Such hatchets are rather common in the Krasnyi Mayak and the Loboikivka metallurgical traditions.

Three socketed beak-axes [Klochko 1993:62] with hammered folded sockets and a long narrow blade (Fig. 12:3-5).

Nine small tanged knives with leaf-like or triangular blades, rhombic or oval in section (Fig. 12:6-12, 15). All of them are heavily ground off. Similar knives are rather common in the Late Bronze sub-barrow tombs in the right-bank Ukraine: the so-called “Srubnaya graves”.

Three tanged knives with “belts” on their tanges near leaf-like blades, rhombic in section (Fig. 12:14, 16, 17) are the Holovuriv-type knives.

Two daggers with ring stops of the Krasnyi Mayak type (Fig. 12:18, 19); one of the daggers has a strongly ground-off blade.

Fragments of knives of indefinite type (Fig. 13:1, 2).

A razor on a short tange with a ring stop, an oval, strongly hammered blade with a groove in its upper part, and rhombic in section (Fig. 13:4) is a razor of the Loboikivka type.

Four hammered hooks with folded sockets that display holes for nails. Three of the hooks are intact, while only the socket of the fourth one remains (Fig. 13:4, 5-8).

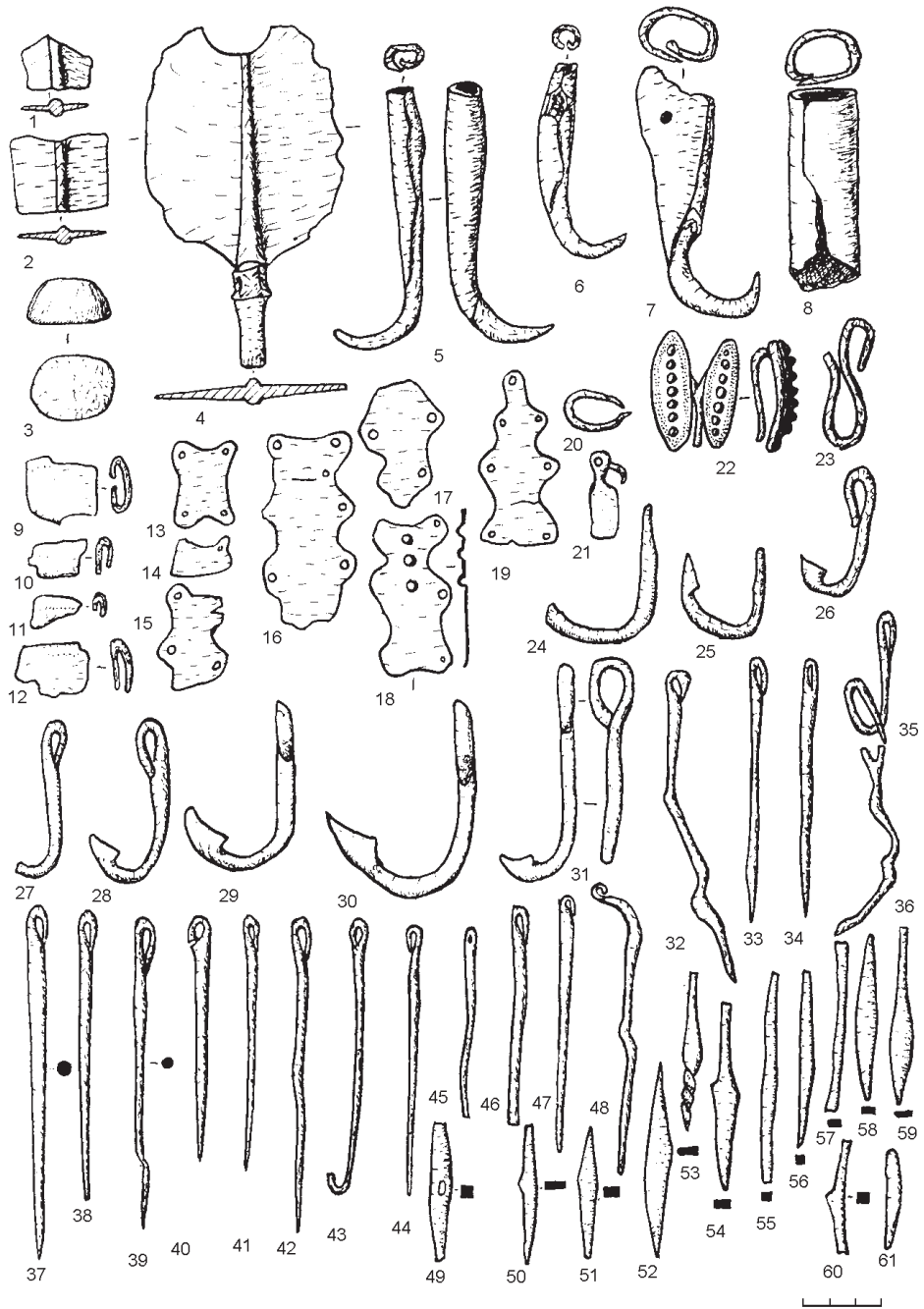


Fig. 13. The Loboikivka hoard.

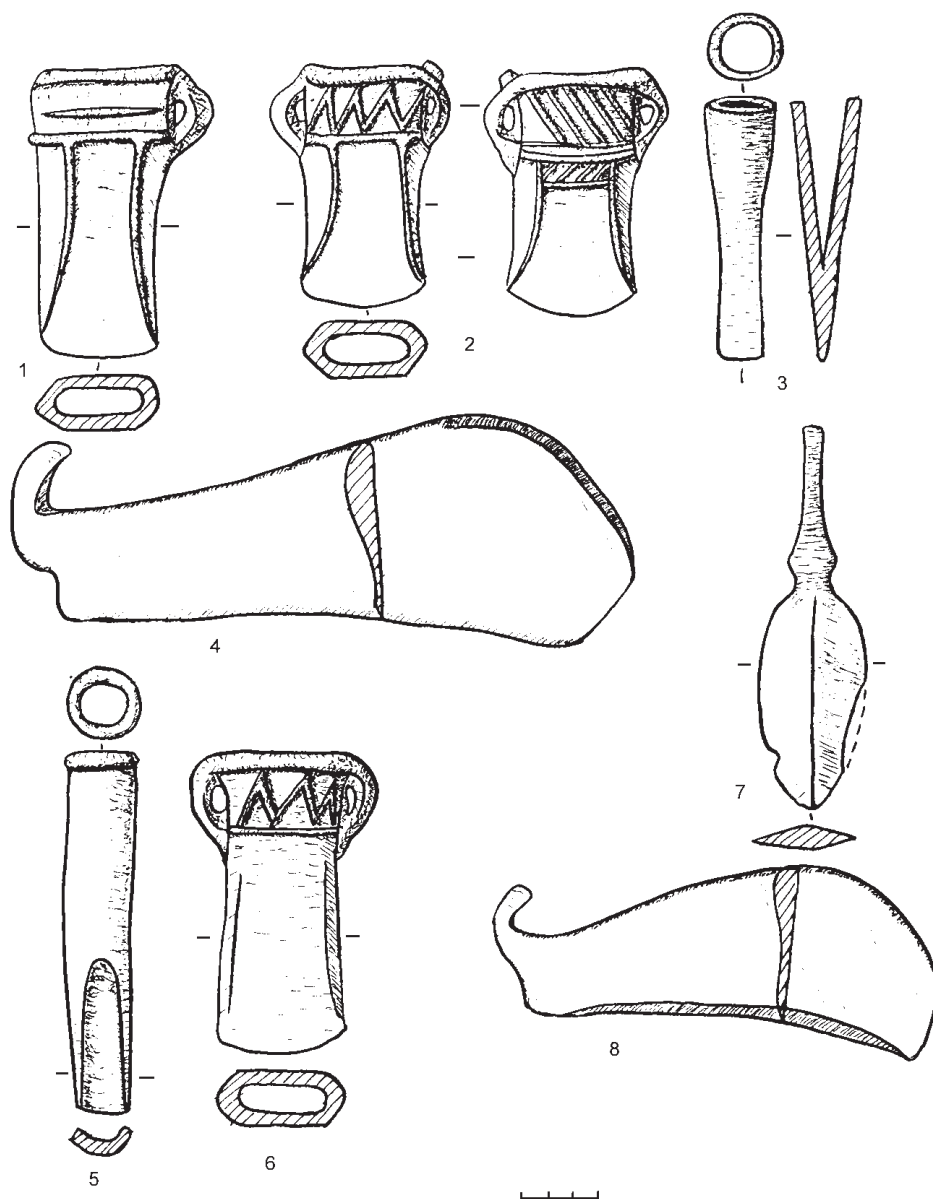


Fig. 14. 1-4 - the Blahovishchenka hoard; 5-6 - the Tryokhizbenka hoard; 7-8 - the Borysivka hoard.

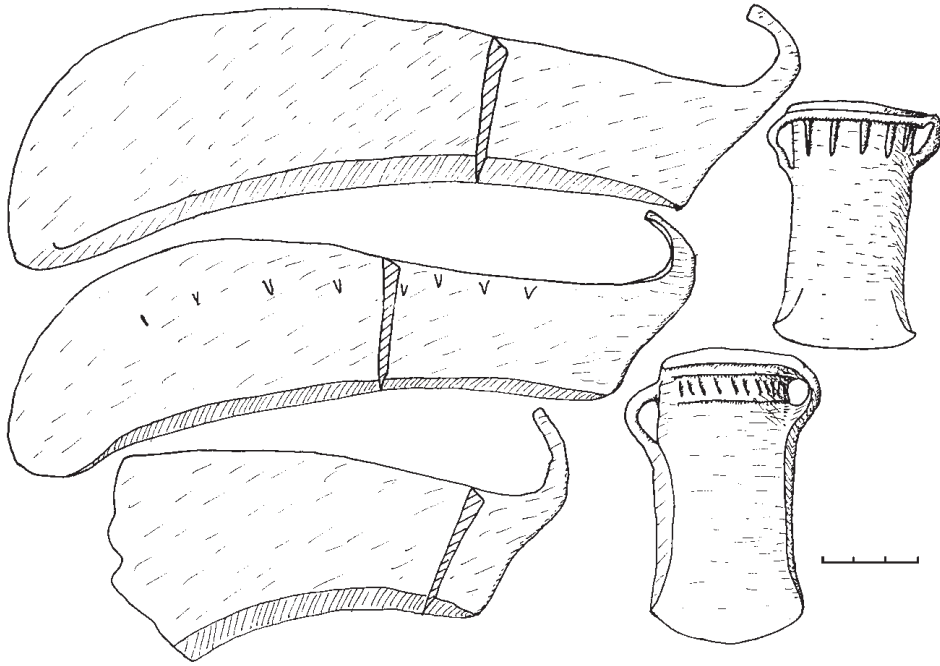


Fig. 15. The Nizhnya Khortytza hoard.

Bronze bondage of wooden vessels of the *Srubnaya* type; some of them are like crampons, others like staples or braces with polished surfaces (Fig. 13:9-21). One of the items is decorated with a poinson ornament, the others display nails up to 1 cm long.

A miniature ring, rolled from a narrow plate. (Fig. 13:20)

A cast bronze pendant of sophisticated form. Its curved petals are wrapped in a golden sheet and decorated with a poinson ornament (Fig. 13:22). No items, similar to it, are known to the author.

Eight hammered fishing hooks, made of a four-edged rod, six of them are fitted with one rolled lug each (Fig. 13:24-31).

Seventeen sawing needles, hammered from a rod (Fig. 13:32-48).

Nineteen hammered awls, rectangular or square in section (Fig. 13:49-61).

Also, the hoard contained a grinding stone, 3.3 cm in diameter (Fig. 13:3).

14. The *Blahovishchenka* hoard, found near the village of *Blahovishchenka* of the *Kamaynka-Dnieprovsky* district, *Zaporizhye* region (Fig. 1:14). Currently the hoard is kept in the *Zaporizhye* Natural History Museum. It includes a chopper of the *Kabakovka* type (Fig. 14:4), a single-lugged celt, hexahedral in section, decorated

with three “cords” on the socket (of the Blahovishchenka type) (Fig. 14:1), a double-lugged ornamented celt of the Kabakovka type, hexahedral in section (Fig. 14:2), and a cast socketed chisel (Fig. 14:3).

15. The Borysivka hoard was found in 1928 near the village of Borysivka of the Nikopol district, Dnipropetrovsk region (Fig. 1:15), at the north-western side of a major burial mound under a 1-ton stone block. The hoard contained a knife with “belt” on the Holovuriv-type tange (Fig. 14:7), a chopper of the Kabakovka type (Fig. 14:8), and a hammered socketed hook (was not preserved).

16. The Tryokhizbenka hoard, found near the village of Triokhizbenka of the Slovyanoserbbsk district, Lugansk region (Fig. 1:16), is currently kept in the Poltava Natural History Museum. The hoard contained a cast socketed chisel with a grooved blade, and a double-lugged celt of the Kabakovka type, hexahedral in section, decorated with a triangular ornament (Fig. 14:5, 6).

17. The Nizhnya Khortytsya hoard, found near the village of Nizhnya Khortytsya at the right bank of the Dnieper (Fig. 1:17), is currently kept in the Zaporizhye Natural History Museum. It included three choppers of the Kabakovka type (one of them with a broken edge), and two double-lugged celts of the Kabakovka type (Fig. 15).

C. CONCLUSIONS

Metal artifacts of the Loboikivka center were made of high-quality Pb bronze [Chernykh 1976] with the use of a foundry technology of pouring metal into moulds made of talc slate. The artifacts include a variety of tools and weapons: tanged knives, awls, needles, hatchets, socketed chisels, choppers, arrowheads, dart heads and spearheads, celts, socketed beak-axes, and daggers. All those artifacts have no counterparts among artifacts of the Carpathian metallurgical centres; moreover, they differ significantly from metal items of the Srubnaya Culture. Meanwhile, the Loboikivka metallurgical tradition, both in terms of technology and forms of artifacts, is close to local Pontic types: the Krasnyi Mayak and the Noua-Sabatinovka) as well as the Kardashynka [Chernykh 1976] metallurgical traditions.

The complexes that contain artifacts of the Loboikivka and the Sabatinovka types (the Holovuriv and the Mali Kopani workshops, the Khrystych and the Loboikivka hoards) allow the synchronisation of the Krasnyi Mayak and the Loboikivka metallurgical traditions and date the latter back to the 16-13th century BC

[Klochko 1993]. Therefore, the majority of hoards that contain items of the Loboikivka types were found along the lower part of the Dnieper from Kremenchuk to Zaporizhya, further to the south than most of foundry workshops, the most northern of which — Holovuriv, Derevyane and Mazepyntsi — were located in the Kiev region (Fig. 1). The development of that production centre, judging from the situation of the oldest workshops, began in the Kiev region. Gradually, its products began to spread down the Dnieper basin and further to the east.

This metallurgical tradition does not fit the traditional concepts of either the Eastern Trzciniec or the Srubnaya Cultures. Presently, it appears that a more likely hypothesis is presented by the view of V.V. Otroshchenko about the existence of two lines of development of cultures of the Srubnaya community, and the distinguishing, within that community of tribes, of two archaeological cultures: Pokrovka and Berezhnivka-Mayivka [Otroshchenko 1994:150-153]. I link the Loboikivka metallurgical tradition with the latter. The ancient production indicates that in the second half of the 2nd millennium BC the Middle Dnieper area was populated by the people whose origin was not linked either to the Carpathian region or the East.

Hence, the Loboikivka metallurgy, together with the new Malopolovetske burial mound, opened in the Fastiv district of the Kiev region [Lysenko 1998], show that the eastern border of the Eastern Trzciniec Culture did not reach the right bank of the Dnieper, but ran further to the west.

The issue of the eastern boundaries of dissemination of this metallurgical tradition deserves to be addressed separately. Some artifacts of the Loboikivka types and whole hoards of such items have been found rather far to the east, on the territory of Russia, e.g. the Tereshkovo hoard in the Voronezh region [Pryakhin, Siniuk, Matveev 1981], the Karmanovo hoard in the Trans-Kama area [Kuzminykh 1981], the Ilderyakovo and the Derbedeniovo hoards, and a number of other finds in the Volga region [Chernykh 1970], finds of artifacts of the Loboikivka types in the features of the Andronovo Culture in the Trans-Ural region [Chernykh 1983]. All those items belong to relatively late versions of the Loboikivka types; therefore, I regard the dissemination of the Loboikivka metallurgical tradition eastwards as a relatively recent phenomenon [Klochko 1994], which points out to the participation of eastern Ukrainian culture elements in the cultural process of the late Bronze Age at the east of Eastern Europe, namely in the Volga region and Western Kazakhstan, primarily in the development of the Kazan Culture, as well as the Fedorovka and the Sargara features of the Andronovo Culture.

Finds of metal items of the Loboikivka types also make us reconsider culture affiliations of many settlements and graves of the Late Bronze Age in the left-bank Ukraine that have been traditionally referred to the Srubnaya Culture. At the late stage of their development, Srubnaya tribes borrowed this metallurgical tradition and contributed to its dissemination far eastwards. However, such a far dissemination of this specific technological and cultural tradition, in my view, would

be impossible without the integration of Berezhnivka-Mayivka Culture elements into the Srubnaya Culture and their migration far eastwards, as far as the Western Kazakhstan. It was this migration that, in my view, was linked to the formation of the community of roller ceramics culture of the Late Bronze Age in Eurasian steppes, as modelled by E.N. Chernykh [1983]. The reason of that migration, most probably, was the eastbound movement of cultures of the Carpathian circle that began in the early 12th century BC and resulted in the formation of the Chornolis Culture.

Translated by Inna Pidluska

ABBREVIATIONS

AP	– Archeologia Polski, Warszawa
APL	– Archaeologia Polona, Warszawa
AR	– Arkheologia, Kiev
BPS	– Baltic-Pontic Studies, Poznań
ESA	– Eurasia Septentrionalis Antiqua, Helsinki
KSIA AN USSR	– Kratkiye Soobshcheniya Instituta Arkheologii AN USSR, Kiev
MANH	– Materiały Archeologiczne Nowej Huty, Kraków
MIA	– Materiały i Issledovaniya po Arkheologii SSSR, Moskva
PBF	– Praehistorische Bronzefunde, München
SA	– Sovetskaya Arkheologia, Moskva.
SPA	– Sprawozdania Archeologiczne, Kraków.

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