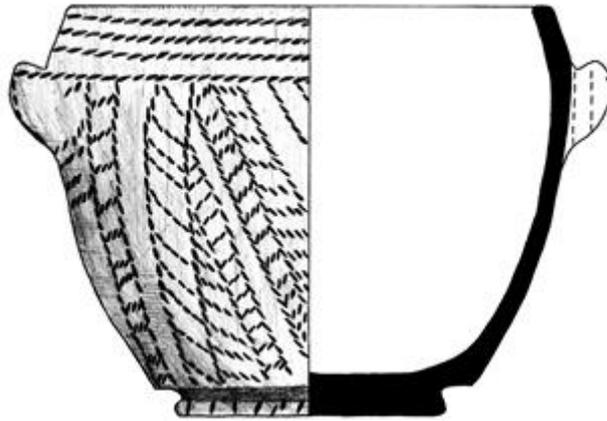


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**YAMNA/BUDZHAK CULTURE
OF NORTHWEST PONTIC:
POTTERY
(CATALOG)**



Edited by Bianca Preda-Bălănică

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The monograph is catalog of the pottery found in the burials of the Yamna/Budzhak culture of the North-west Pontic region (drawings and photographs).

Scientists from different countries are interested in studying the archaeological collections from Ukrainian museums, but do not have such an opportunity now. This also applies to a large part of the collection of pottery from the Northwestern Pontic region. This catalog contains a classification and typology of pottery, the predominant category of the grave goods of Budzhak culture, accounting for more than 40% of the total number of finds. Graphical tables comprise whole forms of pottery and reconstructions of fragmented vessels, and the publication of photographs will give a better understanding of the form and ornamentation of the vessels. The proposed classification provides possibilities for comparative analysis of the ceramic assemblage.

The catalog will be interesting and useful to scientists who study archaeological cultures of Europe in IV-III millennium BC, problems of contacts and interrelations, migrations and colonization in Early Bronze Age, questions of import and imitations of artifacts.

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INTRODUCTION

“Excavation yields an enormous diversity of materials that are not self-labeling; they must be endowed with identity and meaning by the excavator or the analyst. This is done in the first instance through classification. Classification is the initial means through which we impose a degree of order on the enormously diverse remains of the human past. As such, it is probably the single most basic analytical procedure employed by the archaeologist.” (Adams 2001).

In publications related to various aspects of Yamna culture, the barrows of the North-Western Pontic region are invariably distinguished as a separate group, characterized by certain features of the material complex. It was the pottery that made it possible to single out the Budzhak archeological culture; the funerary rites indicate its inclusion in the Yamna cultural and historical community. However, there is no unified classification and typology of the pottery of Budzhak culture in the scientific literature. Researchers have offered variants of classifications that differ from each other. The same vessel sometimes goes to different types. Before they can be studied systematically, they must be sorted into recurring types based on shared characteristics, i.e. to create their classification.

In this monograph, I propose the classification of Budzhak culture pottery based on the application of system analysis. This method allows for a more objective identification of classes, categories, and types of pottery, taking into account the variability of its individual features (elements), combining existing classifications. Each type of pottery has a certain structure manifested in the system of elements, that is, the components of the vessel. Depending on the purpose of the research the number and character of the features included in the classification can change; their choice is associated with the understanding of the integrity of the studied object (vessel) as a functional unit, which consists of interrelated components.

This will help, in turn, to objectively assess the variability of pottery over time. The complex approach to its study, taking into consideration barrow stratigraphy and absolute dating, revealing imports and imitations will allow us to clarify the chronology and periodization of the Budzhak culture. The comparative analysis of a ceramic complex executed based on a comparative-typological method of synchronous cultures will provide the opportunity to define potential communication among the people of Budzhak culture. These problems make it important to find a unified classification and typology for pottery; the typology devised in this monograph seeks to identify similarities and differences in ceramics.

The monograph is also a catalogue of drawings of ceramics of the Budzhak culture, collected by the author from all available sources. Photographs represent the collection from the Odessa Archaeological Museum funds.

Acknowledgments. The author is grateful to Dr. Bianca Preda-Bălănică for advice and support in the technical and scholar details of the monograph. Special thanks go to Dr Sergiu Popovici, without whose help this book could not have been completed. Finally, I would like to thank the Director and scientists of the Odessa Archaeological Museum, whose help I needed when working with the museum's collections and photographing the pottery of Budzhak Culture.

CHAPTER 1

THE MAIN CHARACTERISTICS OF THE YAMNAYA (BUDZHAK) CULTURE OF THE NORTH-WESTERN PONTIC REGION

Nikolay Merpert identified the graves of the North-western Pontic region as a specific cultural variant of the Yamna cultural-historic community (Merpert 1974). Later on, Leo Klejn referred them to a distinct “Nerushay” culture (Klejn 1975), which Ivan Cherniakov renamed into the “Late Yamna Budzhak” culture (Cherniakov 1979). Other researchers also suggested their own names, but the term introduced by I. Chernyakov, in its various versions (Budzhak culture, Budzhak culture variant, Budzhak culture group) proved to be the most commonly used. Some archaeologists do not agree with the status of Budzhak culture in the Yamna cultural-historical area context, they define this society as a “cultural variant” (Merpert 1974; Yarovoy 1985; Dergachev 1986, 2021). However, Leo Klejn, a famous historian and archaeologist, has studied the concept of “archaeological culture” in various theoretical aspects, having devoted a part of his monograph to this phenomenon (Klejn 1991). The expert's opinion should be decisive; moreover, he did not change his view on the existence of this special culture in the Northwest Pontic until the end of his life (Klejn 2016).

In our view, the specificity of the Budzhak culture was already manifested at its formation stage, which allows its synchronisation with the Yamna cultural-historical region in general: 3100-2200 BC and not only with the late Yamna period. The Budzhak culture conforms to the basic criteria to define it as an “archaeological culture”. “Archaeological cultures came out of the need to connect together different elements of the archaeological record... Defining “culture” is an important step in undertaking archaeological research. Any thorough study of a particular culture first has to determine what that culture contains-- what particular time period, geographic region, and group of people make up that culture. The study of archaeology has many accepted definitions of particular cultures, but recently these accepted definitions have come into question. As archaeologists struggle to define cultures, they also seek to define the components of culture... The identification of archaeological cultures constitutes the recognition (empirically more than systematically) of interconnections in material culture through space and time whose implications are not well understood” (Roberts and Linden 2011, 1-3).

The North-western Pontic stands out as a special geographical region. Its eastern boundary is the Southern Bug River, and its western boundary is the Prut and Danube Rivers. The southern border is the Black Sea and the northern border is the forest steppe zone (fig. 1.1).

The “South Bug variant of the Yamna culture” has been singled out, and it was located in the area between the rivers South Bug and Ingulets (Shaposhnikova, Fomenko, Dovzhenko 1986, 5). However, according to these authors, the western border of this variant was west of the

Southern Bug, along the administrative boundary between the Odessa and Mykolaiv regions of Ukraine. As a result, part of the burial mounds of the North-western Pontic region were attributed to the South Bug variant of the Yamna culture. This does not coincide with the geographical territory; the border between the regions could not serve as a barrier to the ancient population. Therefore, in my opinion, the Budzhak culture should include all the kurgans located between the rivers South Bug, Prut, and Danube, regardless of modern administrative zoning.

The origin of kurgans in the south of Vinnitsa region, Yampil district, is probably connected to Budzhak culture. “Yampil cultural center” is bordering with the North-western Pontic region.

Two stages in the genesis of the Budzhak culture can be identified: the early and late stages, with the boundary within the range of 2600/2500 BC. According Dmytro Telegin, Yamna culture in the steppe and forest-steppe zones of Eastern Europe was developed within the period from 3300-3200 to 2100-2000 BC (Telegin, Pustovalov, Kovalyukh 2003, 150). David Anthony agrees that early Yamna material culture and its associated nomadic settlement patterns and kurgan cemeteries began as early as 3300 BC (Anthony 2021, 24). Valentin Dergachev identified two stages in the development of Yamna (Budzhak) culture of the region, calibrated according to radiocarbon dating the first to XXIX/XXVII – XXVI/XXV centuries BC, while the second is dated to XXVI/XXV – XXI/XX (Dergachev 1999). Yury Rassamakin and Alla Nikolova believe, that it is possible to accept for in the Dniester-Danube rivers region (territory of Budzhak culture) two groups of dates, 3000-2600 BC and 2550-2200 BC; there is a similar situation for the Yamna culture in the forest-steppe zone (Rassamakin, Nikolova 2008, 65). Now radiocarbon dates allow us to speak about the beginning of the Budzhak culture about 3300-3200 BC (tab. 1), while maintaining the separation into stages. To date, almost 600 Eneolithic and Early Bronze barrows have been excavated in the North-western Pontic region, and approximately 3000 burials of the Budzhak culture have been found. It is significant that 75% of the barrows were built by the Budzhak tribes themselves, while in other cases they used Eneolithic or Usatovo burial mounds (Ivanova 2021, 44-45). The information obtained as a result of many years of excavations of barrows in the North-western Pontic Region allows defining Budzhak culture as a unique structural entity within the Yamna cultural-historical area. But also, it is a mobile community opened to “cultural dialogue” and capable of long-distance migrations.

The majority of barrows are located along rivers and estuaries, on floodplain terraces, and only rarely in river floodplains or watersheds, located 1-5 km from modern or ancient riverbeds. In the North-western Pontic region, the population of the Budzhak culture is known by burial mounds. On the eastern bank of the Southern Bug, there are short-term Yamna settlements – Tashlyk II, Tashlyk III (Shaposhnikova, Fomenko, Dovzhenko 1986, 8). Perhaps seasonal

settlements of the Budzhak people, by analogy with other regions, could be located in rivers, lakes and liman floodplains. However, floodplains, owing to the accumulation (deposition of sediment), are especially fruitful and are used as meadow pastures for cattle or for farming in many places. Therefore, seasonal dwellings in floodplains would have been quite logical for the Budzhak population. The transgression of the Black Sea and changes in the geomorphological situation have led to the disappearance of many Bronze Age sites (Bruyako, Karpov, Petrenko 1991, 10). Let us note the findings of different Early Bronze Age sites on coastal underwater terraces of the western Black Sea, they belong to cultural types Ezerovo, Ezero B, and Mikhalich (Dergachev 2005, 22) and sunken settlements of Yamna culture in the Ukrainian forest-steppe (Syvolap 2001).

Geologists research allows consideration of the level of Khadybey regression (synchronous with the time of the Budzhak population in the region) equal to -17 m (Konikov 2007), hence, vast coastal (plain) territories, which were land in the Early Bronze Age, have been flooded. The absence of settlements in the North-western Black Sea region is combined with the fixation of traces of pole construction in Budzhak burials (in the form of holes at the bottom of the grave or ledge), probably imitating a simple dwelling of tent or yurt type (Ivanova 2001). The fragility of the materials and the short dwelling period in one place apparently determined the absence of the cultural layer. When winter camps were established in floodplains, reed and sedge remnants could serve as a natural barrier to the wind, not requiring the construction of additional barriers for cattle. Ethnographic data indicate that in the first half of the twentieth century, Bessarabian shepherds wintered with their cattle in the Danube floodplains and on islands in the Danube delta. Sheep tolerate the cold well, but other animals in the Black Sea steppes were kept in the open air all year round (Shmidt 1963, 145-156). Since the 17th century, large horned cattle have been grazed year-round on the islands in the Danube Delta. Currently, feral herds and domesticated livestock inhabit the islands, where they spend the winter (Guzeev et al. 2013, 70-72). So the possibility of similar winterings in the Bronze Age cannot be excluded. In such conditions there was no need for permanent buildings, and temporary ones left no traces. This is comparable to the data on the economy of the Catacomb population of the Middle Don forest-steppe, which used floodplains and low terraces for winter campsites. Without winter fodder stores, it is easier for cattle to forage in the wind-blown floodplains of rivers (Gak, Borisov, 2017). So the possibility of similar winterings in the Bronze Age cannot be excluded.

1.1. Main characteristics of the Budzhak culture

Traditionally, the components of funeral rites have been divided into three groups associated with numerous elements: grave construction, mode of burial, and grave goods.

Grave construction.

Barrows of Budzhak culture are most often located in groups; single ones are also known, although due to anthropogenic factors, the original situation may have been deformed. Barrows are most commonly between 1 and 3 m in height (with a diameter of 30-60 m); only a few are higher than 5 m (80-100 m in diameter), and barrows less than 1 m in height are also known (fig. 1.2: 9). The barrows are round or oval in shape. They are known from a single mound and multilayered as well, when the next barrow fills are piled. The burials could be grouped in circles. The location of the burials on the circumference of the barrow can often be seen, and it is associated with the ideas that ancient people had about the movement of celestial bodies (Dvorianinov, Petrenko, Rychkov 1981).

Among the elements of kurgan architecture are ditches, cromlechs, and stone facing of the mound. Burial chambers are both simple ground graves and with ledges. The graves are most often rectangular, and some have a wooden or stone covering. Anthropomorphic stelae can also serve as cover. Approximately 30% of graves were made with a ledge. A ledge grave is a complex construction of two vertical pits: the first pit is larger, and another pit is dug in it for the dead. Among the elements of the funerary ritual are prestigious elements such as wooden wagons near or inside burials (Ivanova 2001).

Mode of burial: positions of the person buried. Some researchers trace fractional gradation within these variants – approximately 50, combining them into five groups (Яровой 1985). Others merged them into three groups: on the back, on the right side on the left side, or even into two poses: supine, and on the side (Dergachev 2021; Topal 2022).

Certain grave goods are often associated with burial in certain positions, allowing the identification of “ritual groups”. Some findings are common among different groups.

Thus, five main body positions of the buried person can be identified (fig. 1.2)

(1) supine inhumation (fig. 1.2: 1, 2, 7a, 8) with flexed legs, arms stretched along the body (57.2% of graves)

(2) semi-supine, bent to the right (fig. 1.2: 4), the left arm bent in the elbow, the hand at the pelvis, stomach or chest; the right arm stretched along the body (16.3%);

(3) semi-supine, bent to the left (fig. 1.2: 5, 6), the right hand placed at the pelvis (13.1%);

(4) crouched on the right side (fig.1.2: 3), with different positions of arms (7.3%);

(5) crouched on the left side (fig. 1.2: 7b), with different positions of arms (6.1%).

Importantly, four of these variants are combined into two groups with symmetrical skeletons, forming “binary oppositions” (2-4 and 3-5 variants); only the first variant has no symmetrical counterpart. Binary oppositions are systems of binary signs created in human consciousness; their set is the most universal means of describing the semantics of the world.

Based on the binary features choice, universal sign complexes are constructed; this way of classifying the world determines all behaviours of members of archaic collectivities, and above all, ritualised behaviour (Toporov 1982, 24-25). In Budzhak culture, binary oppositions are not associated with gender differences, as it is fixed in other cultures (e.g. in the CWC). In the 138 burials Budzhak men where the buried position was preserved, 26 were buried on the right side and the same number on the left. Among the 66 Budzhak women, in 19 graves they were buried on the right side and in 18 graves on the left (Ivanova 2001, 214, tab. 7). There is no correlation between placing the buried individuals on the right or left side and the age at death. Meanwhile, individual categories of grave goods (some types of vessels and jewelry) correlate, more or less clearly, with certain positions of the body, this fact allowing E. Yarovoy to identify “ritual groups” (Yarovoy 1985, 95).

Grave goods. There are several categories of funerary inventories.

Pottery (approximately 500 intact and restored vessels) comprises more than 40 % of the total number of finds. The pottery of the Budzhak culture has strong differences from that of other regions (fig. 1.3; 1.4). Meanwhile, it has parallels in terms of shapes and styles in various cultures of the late Eneolithic – Early Bronze Age in South-Eastern and Central Europe.

The technique of making pottery is traditional: by hand, using chamotte, limestone, or sand. The surfaces of some types of vessels were covered with engobe. The color of pottery ranges from light ochre to dark grey and may vary according to firing conditions¹. There are numerous smoothing modes for a vessel's surface (using fingers, grass, fabric, leather, and wooden or metal tools).

The main types of vessels that characterize the ceramic complex were identified. All the main types of pottery, in addition to medium-sized forms, are represented by vessels of small (5-10 cm) size. In some cultures, such vessels are classified as individual, but the presence of ochre powder in some suggests a votive character, at least for some specimens.

Before they can be studied systematically, they must be sorted into recurring types based on shared characteristics, i.e. to create their classification.

The main kinds of vessels are pots (fig. 1.4: 1-5), amphorae (fig. 1.4: 6-9), amphora-like vessels (fig. 1.4: 10-14), “Budzhak jars” (fig. 1.4: 15-17), beakers and beaker-like vessels (fig. 1.4: 20-24), cups (fig. 1.4: 18), bowls (fig. 1.4: 19), and askoses (fig. 1.4: 25-27). Round-bottomed vessels (fig. 1.4: 1), jugs (fig. 1.4: 28-29) and some other types of vessels were less common.

¹ The colour of the finished pot tells archaeologists something of how it was fired. Dark grey vessels are fired in an atmosphere where oxygen has been excluded, while lighter, red, or orange vessels are fired in an oxygen-rich atmosphere.

Budzhak pottery ornamentation is a stylistic feature of the pottery. It is present only on parts of the vessels and differs in the technique of decoration and ornamental composition. Relief ornamentation (rolls, protections, overlays) and impression-ornamentation (corded, dashed, stamped) are distinguished in. Decorative elements include lines, oblique hatches, horizontal zigzag, points, triangular impressions ranged as a “zig-zag” motif. The main motifs are horizontal rows of lines in the upper part of the vessel, in combination with corners, zigzags, triangles, and oblique lines. These were made by cord imprints. Corded ornamentation is predominant. Relief or dashed ornamentation is less common, but finger-impressed rim tops are common.

Some types of ornamentation are associated with certain categories of vessels, for example, the cord pattern is more typical for jars, beakers, and amphora-shaped vessels. However, overlapping rollers are typical for amphorae and finger-impressed rim tops for pots.

The other categories of grave goods are made of various materials and have different purposes: tools, weapons, ornaments, etc. (fig. 1.5).

Weapons:

copper/bronze: daggers/knives;

flint: axes, arrowheads, spearheads;

stone: battle-axes, axe-hammers, mace, bolas;

bone: arrowheads.

Tools:

flint: knives, burins, perforators, scrapers, sickles, saws, borer, chisel;

stone: polishers, pestles, grain grinders, arrow-making tools;

bone: hoes, perforators, polishers;

copper/bronze: knives/daggers, flat axes, awls, needles.

Ritual artifacts:

bone: pipes, animal astragals, amulets, human bone flute, hammer-headed pins;

wood: painted sticks;

stone: ochre shredders made of half axes.

Ornaments:

gold: spiral hair rings;

silver: spiral hair rings, Zimnicea type hair rings, rings, rounded beads;

Copper/bronze: spiral hair rings, rings, tubular prongs for bracelets and necklaces, bracelets, rounded plaques;

lead: ring;

bone: beads;

animal teeth: necklaces and bracelets;

Unio shells: necklaces;

amber: beads.

Among metal artifacts, ornaments predominate quantitatively, however, tools and weapons have more weight. Some items may be multifunctional, serving as both weapons and tools.

An integrated approach to the study of archaeological material (classification of the ceramic complex, identifying imports and imitations, barrow stratigraphy data and absolute dating) will clarify the chronology, periodization, and dynamics of Budzhak culture development. To a large extent, it is pottery that allows the identification of the directions of the Budzhak people's relations and contacts.

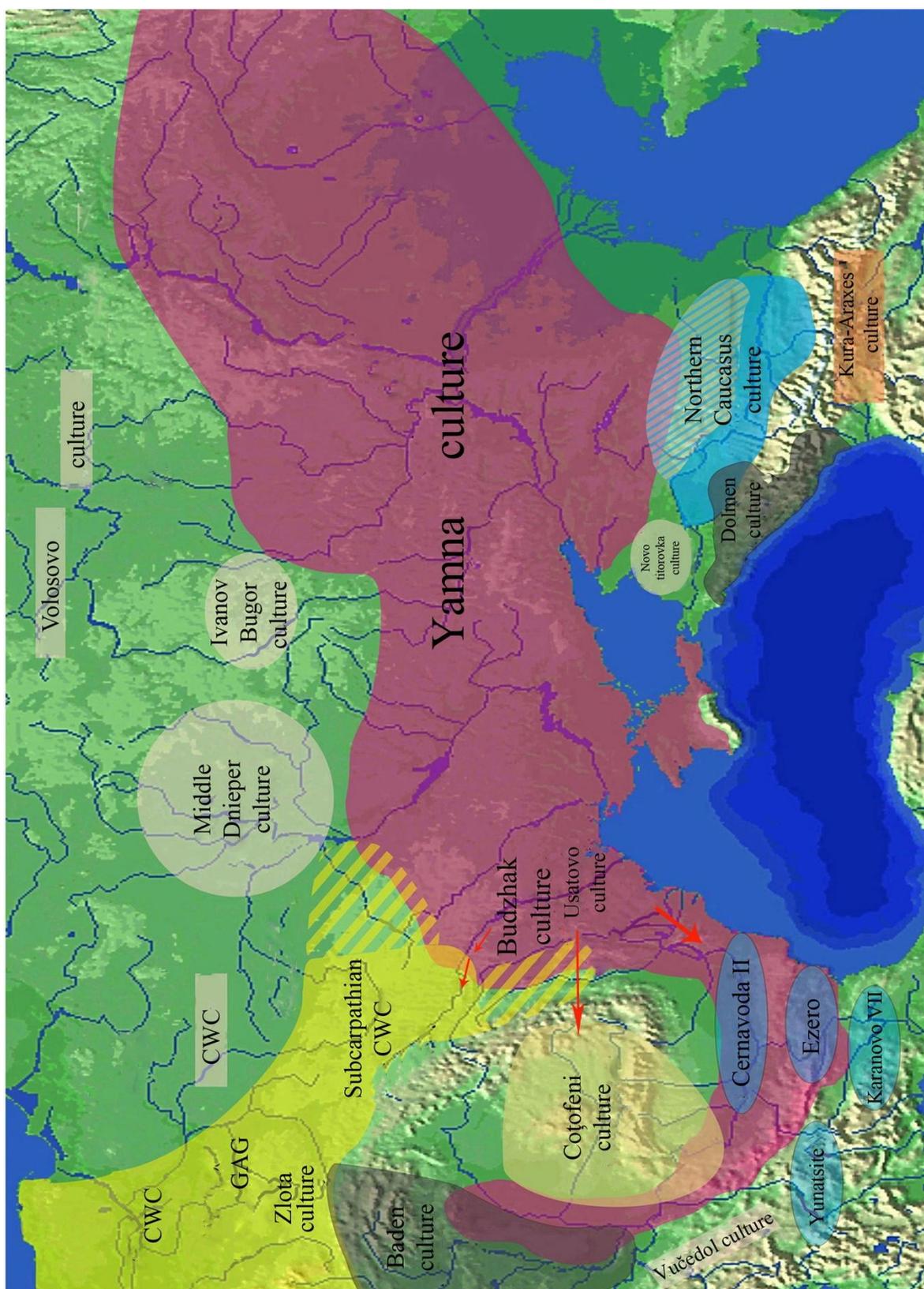


Fig. 1.1. Yamna cultural and historical community (=Yamna culture) and Budzhak culture diffusion
 Legend: GAC = Globular Amphore culture; CWC = Corded Ware culture.
 (after: Bruyako, Samoylova 2013)



Fig. 1.2. Positions of the buried individuals inside the grave pits

1 – Mologa 2/14; 2 – Giurgiulești 9/2; 3 – Kartal IV/162; 4 – Kartal VI/ 532; 5 – Brînzanii Noi 1/4; 6 – Cimișlia 6/9; 7 – Mologa 2/39; 8 – Crihana Veche 9/6; 9 – barrow near Okny village, Odessa region
 (after: 1,7 – Malukevich, Agulnikov, Popovici 2017; 2 – Ciobanu et al. 2019; 3,4 – Bruyako, Agulnikov 2017; 5 – Ciobanu, Agulnicov 2016; 6 – Popovici, Ciobanu 2021); 8 – Ciobanu, Agulnicov 2016; 9 – photo by S. Ivanova)

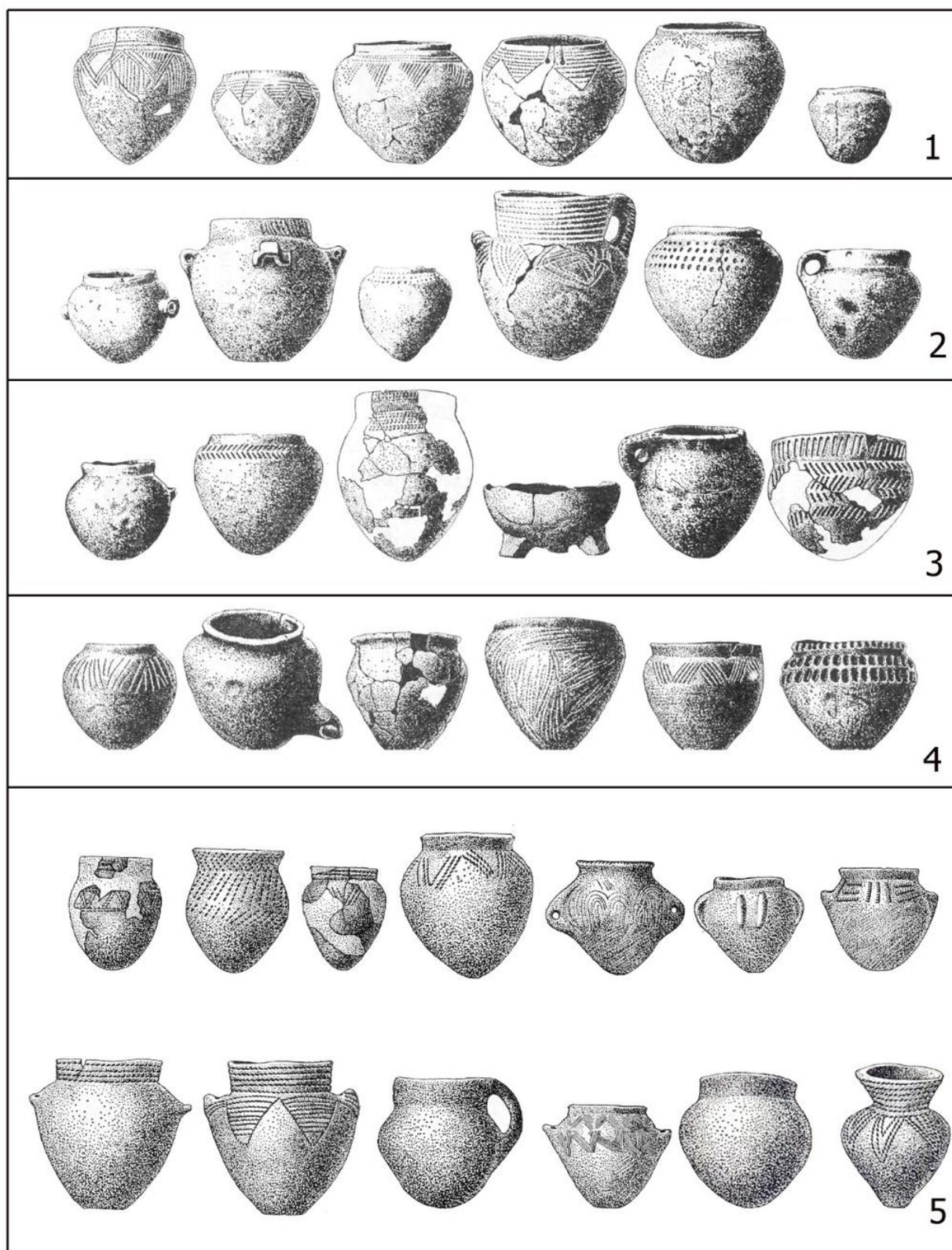


Fig. 1.3. Main types of pottery of Azov-Black Sea steppes Yamna culture
 1 – Seversky Donets region; 2 – Azov region; 3 – Steppe Dnieper region; 4 – Middle Dnieper region; 5 – Bug-Ingul region (after: Shaposhnikova 1985).

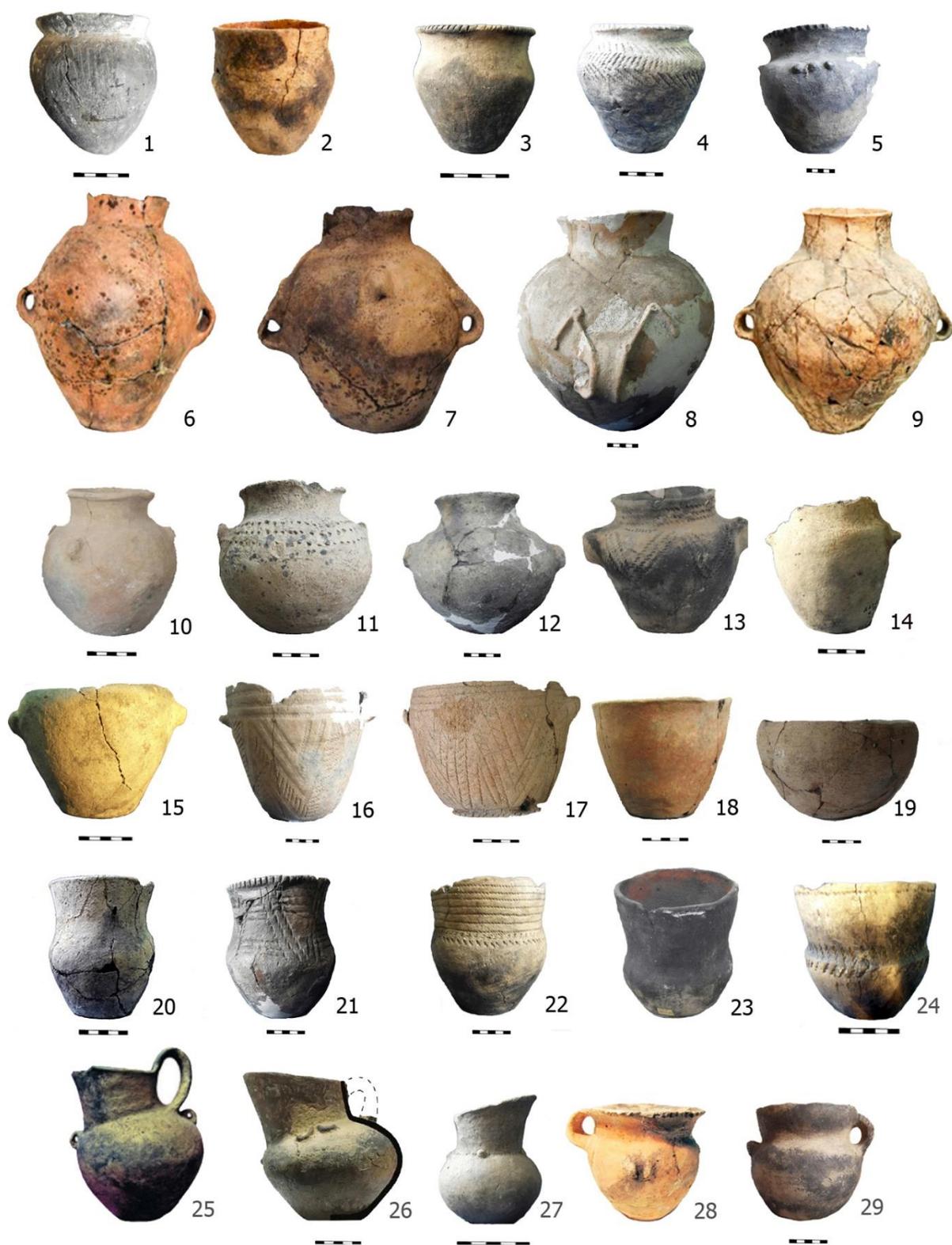


Fig. 1.4. Main types of Budzhak culture pottery

1 – Dalnyk 1/3; 2 – Taraclia II, 10/9 (after Sava et al 2019); 3 – Gradeshka I, 5/12; 4 – Sychavka 1/10; 5 – Petrodolynske 1/4; 6 – Taraclia II, 10/19 (after Sava et al. 2019); 7 – Hlinaia, Sad group, 1/15 (after Sinica et al. 2016); 8 – Gradeshka I, 5/11; 9 – Cazaclia 3/13 (after Sava et al. 2019); 10 – Tatarbunary 1/2; 11 – Efymivka 2/14; 12 – Semenivka 14/5; 13 – Plavni 5/3; 14 – Gradeshka I, 5/2; 15 – Plavni 15/5; 16 – Sergiivka 11/7; 17 – Sychavka 1/15; 18 – Novogradkivka 1/10; 19 – Kholmske 2/8; 20 – Gorodne III 1/16; 21 – Bashtanivka 7/12; 22 – Trapivka 6/20; 23 – Glyboke 2/8; 24 – Dyvizia II 2/5; 25 – Matroska 1 (after Bruyako, Samoylova 2013) 26 – Ciumai 1/11 (after Ciobanu et al. 2016); 27 – Kubey 21/5; 28 – Taraclia II 17/6 (after Sava, Agulnikov, Manzura 2019); 29 – Strumok 1/3 (photo by S. Ivanova, except where noted)



Fig 1.5. Tools, weapons, and ornaments of the Budzhak culture

I – Flint artifacts: 1 – Utkonosovka 1/5; 2 – Kholmske 2/8; 3 – Dyviziya 6/3; 4 – Semenivka 8/13; 5 – Hlinaia-DOT 1/2 (Sinica et al. 2016); 6 – Hlinaia-DOT 1/2 (Sinica et al. 2016); 7 – Artsyz 1/18; **II – Artifacts of different types of stones:** 1 – Dobrooleksandrivka 1/5; 2 – Yasski 1/18; 3 – Alkaliya 5/8; 4 – Semenivka 8/16; 5 – Gradeshka I, 5/1; 6 – Chervonyi Yar I, 1/6; 7 – Semenivka 8/17; 8 – Frikatsey 1/30; **III – Bone, teeth and shell artifacts:** 1 – Frikatsey 1/5; 2 – Bashtanivka 10/33; 3 – Novoselytsia 10/22; 4 – Ageivka 1/5; 5 – Stary Biliary 1/14; 6 – Glyboke 1/21; 7 – Khadzhyder 13/15; **IV – Copper artifacts:** 1, 2 – Frikatsey 4/12; 3 – Katarzhyno 1/11; 4, 5 – Taraclia II, 10/19 (after Sava et al. 2019); 6 – Cazaclia 16/4 (after Sava et al. 2019); 7 – Alkaliya 35/6; 8 – Kholmske 2/8; **V – Gold and silver artifacts:** 1 – Taraclia II, 14/3 (after Sava et al. 2019); 2 – Taraclia 14/3; 3 – Bădragii Vechi 25/12; 4 – Kholmske 8/6; 5 – Tețcani 1/10; 6 – Tiraspol 3/18; 7 – Cazaclia 3/7; 8 – Bădragii Vechi 13/7; 9 – Bădragii Vechi 13/7; 10 – Giurgiuilești 1/9; 11 – Giurgiuilești 1/9; 12 – Bădragii Vechi 6/7; 13 – Bădragii Vechi 6/7; 14 – Giurgiuilești 1/9; 15 – Corpaci 2/12; 16 – Corpaci 2/12; 17 – Roșcani 1/19; 18 – Roșcani 1/19 (1, 2, 5-19 after Niculiță 2009) (photo by S. Ivanova, except where noted)

CHAPTER 2

CLASSIFICATION AND TYPOLOGY OF THE YAMNA (BUDZHAK) POTTERY ASSEMBLAGE

The information obtained as a result of many years of excavations of barrows in the North-Western Pontic Region allows the definition of Budzhak culture as a unique structural entity within the Yamna cultural-historical area. But also it is a mobile community opened to “cultural dialogue” and capable of long-distance migrations. To a large extent, it is pottery that allows the identification of the directions of the Budzhak tribes’ relations and contacts. Some vessels have parallels in terms of their shapes and styles in various cultures of the late Eneolithic – Early Bronze Age in south-eastern and central Europe.

Ceramics is the predominant category of the grave goods of Budzhak culture, accounting for more than 40 % of the total number of finds. Before they can be studied systematically, they must be sorted into recurring types based on shared characteristics, i.e. to create their classification.

“Classification is the initial means through which we impose a degree of order on the enormously diverse remains of the human past. As such, it is probably the single most basic analytical procedure employed by the archaeologist. Excavation yields an enormous diversity of materials that are not self-labeling; they must be endowed with identity and meaning by the excavator or the analyst. This is done in the first instance through classification” (Adams 2001).

The main types of vessels that characterize the ceramic complex are identified (fig. 2.1). In total, we used data from 626 intact or reconstructed vessels from the tumuli of the North-west Pontic region. The technique of making pottery is traditional: by hand, using chamotte, limestone, or sand. The color of pottery ranges from light ochre to dark grey. Their colours may vary according to firing conditions. There are numerous smoothing modes for a vessel's surface (using fingers, grass, fabric, leather, and wooden or metal tools). The surfaces of some categories of vessels were covered with engobes.

Principles of classification

According to Leo Klejn, there are no universal principles for classifying archaeological artifacts yet (Klejn 1979, p. 55; Klejn 1991). However, there are theoretical works substantiating the basic principles of typology and classification, including pottery, in which the cornerstone is the concept of type as a system characterized by a stable combination of features.

Rather often archaeological classification is understood as a hierarchy of classes. However, this is only one of its variants, for which there is a special term “taxonomic classification”. The

typology of the term “archaeological classification” is quite diverse, covering various aspects of this concept (Bochkarev 1990, p. 9-23).

The identification of this or that type of vessels should be based, first of all, on the creation of its structural scheme, i.e., on the selection of its discrete features connected with each other (Sher1966, 260).

Pottery classification in different archaeological cultures may be diverse, due to different sets of vessel types. However, even for one culture (including the Budzhak culture of the North-West Pontic Region), different researchers have made different classifications and typologies of ceramics. Therefore, it is important to find common principles for objectively distinguishing between different types of vessels and their comparative analysis.

Our classification is based not only on the formal typological method (traditional in archeology)¹, but also on the use of elements of system analysis. Each type of pottery has a certain structure manifested in the system of elements, that is, – the components of the vessel. Depending on the purpose of the research the number and character of the features included in the classification can change; their choice is associated with the understanding of the integrity of the studied object (vessel) as a functional unit, which consists of interrelated components (Bokovenko 1991, 258).

“By classifying the parts of the profile, the complete vessel is classified... approach to do so is a hierarchical segmentation of the profile into rim, wall, and base by creating segmentation rules based on expert knowledge of the archaeologists and the curvature of the profile” (Kampel, Sablatnig 2006, 743).

For our study it is sufficient to distinguish the basic elements of the vessel as the base, body, neck and rim; their different forms and sizes, being united in the system, are the structural scheme of the type of vessel (fig. 2.2). But hand-made ware demonstrates a wide variety of traits, almost every vessel is individual, morphological characteristics are often unstable (Mochalov 2008, p. 27). Therefore, it is irrational, although possible, to distinguish a more detailed gradation. The body of the vessel is considered to be the dominant part, as the main function and purpose of the vessel is to be a container; the rim, neck and base are of secondary importance. An additional element is handles, as they are not present in all vessels.

The form of the vessel and its structure are interconnected. Consideration of the structure, that is the combination of different morphological features characterizing a vessel, is the basis of a systematic approach in the construction of different types of classifications of Eneolithic and Bronze Age ceramics in different territories. This applies to western (Czebreszuk 1996, 11-33; Szmyt 1999, 18-25, figs. 4-6; Manzura 2001-2002, 467-481; Hübner 2005, 165-310; Włodarczak 2006, 13-20;

¹ morphological typology based on the general shape of objects.

Przybyl 2009, 96-96, tab. 10-11), as well as oriental (Mochalov 2008, 28, tab. 5, 47-48, tab. 14; p. 107, Table 28) regions. This is also true for the morphology and stylistics of the vessels. In the North-west Pontic region, the system approach was applied by Vladislav G. Petrenko to classification of pottery and ornamentation of the Usatove culture (Patokova et al. 1989, 35-38; 105-109).

Among the numerous types of artifact classifications, we have chosen a morphological typology based on the general form of objects.

It will probably be logical to structure our typological classification in terms of methodology, around the morphological and formal attributes of the vessels and organize them into a precise hierarchy. In our study we applied a hierarchical scheme of systematization of ceramics (from the highest to the lowest): class – category – type – feature group – feature.). We also applied the method to visualize the differences between ceramic profiles. The system approach in combination with a similar scheme is approved for the analysis of not only Yamna ceramics, but also ware of other cultures of the Bronze Age in Volgo-Ural region (Mochalov 2008, p. 28).

An analysis of the typology of vessels based on fully or partially reconstructable vessels allows a reliable evaluation of the whole decorative scheme, techniques and form. First, the ceramics are divided into two large groups based on the design of the upper part. Thus, Class 1 includes vessels with neck, and Class 2 includes neckless vessels. The next level in the construction of the classification is the allocation of different categories of vessels based on morphological features. In our classification, we used the common names of vessel the forms (Yarovoy 1985, 82-89; Dergachev 1986, 42-54)

There are rare ceramic forms represented by single specimens, for example: rectangular vessel (incense burner), “vessels with a spout”, clay funnels, imported vessels of unusual types: beaker with handles under the rim, so-called “craters”, biconical bowls and others. However, these vessels were not considered in this classification (fig. 2.10).

Classification

Class 1 – vessels with neck and **Class 2** – neckless vessels can be differentiated.

In **Class 1** (vessels with neck) the following categories are distinguished: pots and pot-shaped vessels, amphorae and amphora-shaped vessels, beakers and beaker -shaped vessels, jugs, and askoses.

In **Class 2** (neckless vessels) the following categories are distinguished: jars, bowls, dishes, and mugs.

The next level of classification is an allocation of types within each category of ceramics based on a set of features, related to the shape of the main elements of the vessel: neck, body, and base

(bottom). Each element has several characteristics (groups of features), and their various combinations within the types of each category of ware are the basis for building a typology.

We use two typological schemes to classify the ceramics that characterize the two selected classes, each of which used a different group of morphological features associated with the profile of the vessels and their proportions (fig. 2.2). For the convenience of systematization, different features are marked with different symbols: uppercase and lowercase letters of the Latin alphabet, Roman and Arabic numerals. The combination of different morphological features is the structural scheme of the vessel, and serves as the basis for the identification of the type in the framework of the systematic approach.

I. CLASSIFICATION OF THE MAIN CATEGORIES OF CERAMICS

Class 1. Vessels with neck

Categories:

pots and pot-shaped vessels,
amphorae and amphora-shaped vessel.,
beakers,
jugs,
askoses.

Features group 1 (the defining criteria are the body and base shapes).

Features:

A – vessels with a flat base, spherical body and gently convex shoulders. The bodies can be more or less squat or tapered. This type of vessel has a short neck or no neck at all, and the rounded rim turns outward, more or less sharply. This is the most common type of pots. They have a body diameter approximately equal to, or slightly greater than, the total height of the vessel ($H_2 : D_3 = 0.9-1.1$);

B – vessels with a flat base, short neck, or no neck at all, and oval elongated body; shoulders are high and convex. The height of the body is greater than the diameter of the rim ($H : D_3 = 1.2-1.3$);

C – round-bottom vessels. The small number of such vessels allowed us to combine them into one common type, regardless of body proportions.

Feature group 2 (the defining criteria are the body proportions).

Features:

I – the greatest width of the body is in its upper third, that is, shoulders ($H_3 > H_2$);

II – the greatest width of the body is in the middle part of the vessel ($H_3 = H_2$).

Feature group 3 (the defining criteria are the shapes of the neck).

Features:

- a – straight cylindrical neck ($D1 = D2$);
- b – everted outward neck ($D1 > D2$);
- c – neck of S-shaped form (with an outwardly bent edge).

Feature group 4 (the defining criteria are the heights of the rim).

Features:

- 1 – high neck ($H1 : H = 0.3-0.4$);
- 2 – short neck ($H1 : H = 0.1-0.2$).

Class 2. Neckless vessels

Feature group 1 (the defining criteria are the body and base shapes).

Features:

- A – vessels with a flat base and spherical or “pear-shaped” body;
- B – vessels with a flat base and conical body;
- C – vessels with a flat base and biconical body;
- D – vessels with a flat base and cylindrical body;
- E – vessels with a rounded base.

Feature group 2 (the defining criteria are the body proportions).

Features:

- I – the greatest width of the body is at its mouth; these are the so-called “open vessels” or wide-mouthed vessels ($D1 > D2$);
- II – the greatest width of the body is in its upper third, that is, shoulders ($H3 > H2$);
- III – the greatest width of the body is in the middle part of the vessel ($H3 = H2$);
- IV – the diameter of the mouth is approximately equal to the diameters of the body and base, or the diameter of the base is slightly smaller ($D1 = D2 = D3$).

Feature group 3 (the defining criteria is the ratio of the diameter of the mouth to the height).

Features:

- a – vessels of medium proportions ($H : D = 0.9-1.0$);
- b – vessels of high proportions and elongated forms ($H : D = 1,1-1,3$);
- c – vessels of squat proportions ($H : D = 0.7-0.8$).

Feature group 4 (the defining criteria is the presence or absence of annular thickening at the base,

- 1 –with annular thickening;
- 2 – without annular thickening.

The ornamentation is a stylistic feature of ceramics. It is only on part of the vessels and differs in the techniques of decoration and ornamental compositions. Both relief ornamentation (rolls, addition of lugs/stops) and deep ornamentation (corded, stamped) can be observed. Budzhak ceramics

are often decorated with the cord impressions, sometimes combined with circular depressions (hollow tube stamp or bird's bone?). Among the main motifs are horizontal rows of lines in the upper part of the vessel (along the rim or near the mouth), often in combination with oblique lines, zigzags, triangles, filled inside also with cord impressions, chevrons. Occasionally, the surface of the vessel is divided into several horizontal strips. The decorations were created by wrapping with a rope during the process of forming the vessel. Incisions or finger-impressed rim tops are quite common.

Some types of ornamentation are associated with certain categories of ware. For example, cordlike is more typical for jars and amphora-shaped vessels, overlapping rolls – for amphorae, and incisions or finger-impressed rim tops – for pots. In some cases, these vessels have an incised decoration on the shoulder.

II. ANALYZE THE CERAMICS OF THE BUDZHAK CULTURE

Based on the described general principles of classification, we can analyze the ceramics of the Budzhak culture.

Class 1. Vessels with neck

Pots and pots-shaped vessels are the most numerous – 230 specimens (or 36,7 % of all pottery), and they vary in proportions and profile. Flat-bottom vessels prevail, about approximately ten round-bottom vessels are known. More than half of them are concentrated on the right bank of Southern Bug, pointing out the connections with the Southern Bug variant of the Yamna culture.

The following types of pots could be noted (fig. 2.3):

1) medium proportions, with oval elongated body, well-defined shoulder and high neck, straight, bent outside or S-shaped (27.4 %) – AIa1, AIb1, AIc1;

2) medium proportions, with oval elongated body, well-defined shoulder and low neck, straight, bent outward or S-shaped (35.4%) – AIa2, AIb2, AIc2;

3) medium proportions with spherical body (maximal diameter is in the middle part of body) and high neck, straight, bent outward or S-shaped (17.8 %) – AIIa1, AIIb1, AIIc1;

4) medium-sized pots with spherical body and not very high, bent outward or S-shaped neck (9.7 %): AIIb2 and AIIc2;

5) pots of high proportions, often with well-defined shoulder and not very high, straight or bent outward neck (9.7 %): BIIa2, BIIb1 and BIIb2.

A short neck of different profile is more typical for vessels with enlargement in the upper third of the body (with well-defined shoulder). A high neck is more common in pots with enlargement in the middle part of the body. In general, flat-bottom pots with well-defined shoulders and short necks, bent outward, prevail in this category of vessels. Pots with a straight (cylindrical) neck are not numerous in all types; squat shape pots are rare. Round-bottom pots have different body and neck shapes, united by rounded bottom shapes. Vessels with well-defined shoulder predominate, and the

profile of the neck varies (CIa1, CIb1, CIb2): a high, straight neck (or a bent neck); a bent outside rim.

Variants with ornamentation were distinguished in some types of pots, but slightly more than a dozen vessels were ornamented. Usually, these are incisions or cord impressions on the shoulder or under the rim and sometimes herringbone compositions or semi-ovals. Six specimens were found to have a pea-shaped applique on them, and the surfaces of the individual vessels were decorated with incised ridges, smoothed. Incisions, fingernail prints or cord impressions along the edge of the rim are widespread: approximately one-third of the pots were decorated in this way.

In addition to medium and large specimens, there are few small specimens, up to 10 cm in height.

Amphorae and amphora-shaped vessels (114 specimens, 18,4%). We define an amphora as a large vessel with a wide body, narrow throat and two handles. In contrast to the ancient period, in Eneolithic and Bronze Ages, the vessel size, throat width, inclination of the neck and width of the body varied. The standards typical for later periods were either not very strict or were completely absent. We considered it possible to distinguish three types of vessels within this category: amphorae, amphora-shaped vessel, and amphorae of Globular Amphora culture.

Amphorae (27 specimens, 4,2%) are 20 to 40-50 cm high. Because of their small number, they do not form significant series (Ivanova, Koško, Włodarczak 2013). It is possible to split three types: with spherical body AIa1, AIa2, AIIa1, AIIa2, with oval elongated body AIIc2, BIc2, BIIc1, BIIc2 and an intermediate type BIb1, BIIb1, CIb1 (fig. 2.4). Usually, amphorae have cylindrical necks (less frequently outwardly deflected) and predominantly flat bottoms. The amphora of burial 26, kurgan 5 near Yassky is unique and has an ovoid, unstable base. The only analogy to this unique amphora is an amphora from Belozirka, Kherson region (Alexeeva 1992, p. 70, fig. 16, 4). Uncommon is an amphora from Cazaclia 3/13, with a painting in the form of irregular stripes applied in brown paint (Dergachev 1986, p. 46).

Loop-shaped band handles, sometimes with cannellure, are most commonly found in the broadest part of the amphora's body, sometimes below. The most typical elements of the decoration of amphorae are the rollers that pass from the handles to the body (5 examples) and look like “whiskers” or “horns” (bucrania?). Less frequent are the rolls around the neck (3 specimens) and the rolls connecting the base of the neck with the handles (2 specimens). Of the 21 specimens, only 5 lacked ornamentation.

Amphorae of the Globular Amphora culture (10 specimens, 1,6%) are vessels with convex bodies and peculiar ornamentation, with analogies in ceramic complex of the Globular Amphora culture (fig. 2.5). There are also unornamented amphorae. There are amphorae with two or four

handles, placed on the shoulders. All amphorae are divided into two types according to Marzena Szmyt's classification (Szmyt 1999, 126-127, fig. 37, 38).

Amphora-shaped vessels (77 specimens, 12,6%) are small-sized (up to 20 cm high) and have diverse configurations. Some of them repeated types of pots or beakers, differing only in the handles attached to them. Nevertheless, according to the definition of the features of amphorae, they should be attributed to this category of ceramics.

Most amphora-shaped vessels have a rounded or egg-shaped body, cylindrical or curved neck, and flat base, although there are some specimens with a rounded or ovoid base. The paired handles are attached to the maximum diameter. More rarely, there are four handles, in a single case there are five.

Most are conical, pyramidal, or flattened paired knobs, each with one or two vertically punctured holes. Pseudo-tunnel and loop-shaped handles are less common, “ear-shaped” handles with horizontal holes are rare too, and “arch” handles are known on one vessel only.

A significant series of vessels cannot be distinguished owing to the wide variety of body shapes. However, these types can be specified (fig. 2.6):

- 1) with spherical or squat body, high cylindrical or slightly bent neck: AIa1, AIb1, AIIb1, AIIc2;
- 2) with elongated oval body and high neck, straight or slightly bent outwards: BIIa1, BIIb1, BIIc1.

There are types in which the ornamentation of the body is traditional and types in which it is absent.

Some amphora-shaped vessels are decorated with cord ornamentation along the neck and shoulders, or along the whole body. The ornamentation corresponds with that known on the jars: zigzags and triangles, but the compositions, for the most part, appear simpler. Some vessels have a polished surface of reddish-brown colour, and Budzhak vessels mostly do not have such surface treatment. There was a single amphora-shaped vessel with large loop-shaped handles, connecting the edge of the neck and the body – Kovalivka VIII, 1/24 (Shaposhnikova, Fomenko, Dovzhenko 1986, 121, fig. 43. 3).

Beakers and beakers-shaped vessels (38 specimens, 8,1 %). They vary in shape and size (fig. 2.7). Vessels with rounded or elongated body and high, bent outside (or straight) neck traditionally belong to this type, in one case the neck is bent inside. More frequently the beakers have slender, tall proportions; rounded, with ribs or squat bodies. The neck of the beakers is always at least one-third of the vessel height. According to the shape of the body, the following two types can be distinguished:

- 1) maximal diameter is in the upper third of the body – AIb1;
- 2) maximal diameter is in the middle part of body – AIIa1, AIIb1.

Most beakers are of medium size, up to 20 cm high, and there are specimens of greater and lesser height. Some beakers have been ornamented with cord impressions in the form of parallel lines along the neck, hatched triangles with their tops turned down on the shoulders, zigzag lines, “herringbone” lines and “tree- shaped” impressions. Occasionally, incisions were made on the neck. One beaker was decorated throughout the vessel with parallel horizontal lines – Kamenka, kurgan.1 (Алексеева 1992, p. 32, fig. 17.1).

Jugs (10 specimens, 1,6 %) do not have a standard shape; what they have in common is a single loop-shaped handle (fig. 2.1: d). One fragmented specimen is decorated with cord impressions. Two jugs have a decorative appliqué on the opposite side of the handle. It is possible that a pointed ornamented vessel from the burial in Răscăieții Noi 1/4 should be considered a pitcher, but its neck was not preserved, and the author of the excavations attributed it to be a beaker (Яровой 1990, p. 13, fig. 3.5).

Askoses (6 specimens, 1,3 %). This type of vessels is also quite rare and is almost unknown east of the Southern Bug. The vessels have a slightly asymmetrical body; the rim looks as though it was cut off slopes towards the handle (fig. 2.1: e). The funnel-shaped neck sharply differentiated from the body. The handle rising above the neck connects it to the body. They do not have a base, but are flattened at the bottom. Two specimens were not ornamented, and two specimens have a pea-shaped applique at the junction of the neck with the body. Another specimen had nail-shaped incisions at the junction of the body and neck. Askoses from a destroyed a ruined barrow near the village of Matroska and from Ciumai 1/11 have a classic form.

Class 2. Neckless vessels

Jars (88 specimens, 14%). These vessels have a truncated-conical or hemispherical form with paired handles (fig. 2.8). They are a “distinctive mark” of Budzhak ceramics; and the term “Budzhak jars” is applied to them. Medium-sized jars dominate (up to 20 cm high), and some are small (up to 10 cm high). Most often, vessels are covered with engobe, and the colour varies between orange and pink shades, and grey. Ornamented and unornamented specimens were also found. These jars have symmetrical handles on top of the bodies. There are three versions of these handles:

- 1) elongated knobs or tongue- shaped handles with one or two vertical holes pierced;
- 2) conical handles, also with one or two holes pierced;
- 3) vertical pseudotunnel handles, which in turn could be single or paired, in the latter case doubled or separated from each other.

There are two types in of this category of vessels: with ring bottom and with flat bottom (prevail).

Jars with ring bottom (32 specimens) are characterized by medium to high proportions; its shape is distinguished by the spherical body variant: AIa1, AIc1, AIIa1 and truncated-conical body

variant: BIa1, BIb1. In the first case, the top of rim is often bent inward. Several specimens have a cylindrical shape body: DIVa1.

This type of jar is ornamented more frequently and more diversely than jars with flat bottom (ornamentation is present on 2/3 of these vessels). They are decorated by cord impressions. The compositions were applied in the cord impression technique and using a hollow tube or bird bone stamp. In addition to the traditional zigzag pattern, there was a herringbone ornament and horizontal repeating friezes of triangles. Often the ornamentation below the handles is different from the main composition; sometimes the ornamentation was on the “tongue”-handles (even an unornamented body).

Jars with flat bottom (56 specimens) differ in their proportions, sizes and configurations. Truncated-conical jars of medium-sized predominate: BIa2, BIb2 and BIc2, whereas spherical jars are less common: AIIc1, AIIa2, AIIb2 and AIIc2. Among these jars, there are vessels with and without cord ornamentation, and unornamented specimens are more common. The ornamentation decorates the entire vessel or only the upper part, and is quite diverse. The simpler variants are parallel horizontal cord impressions (or tree-shaped compositions). On other vessels the ornamentation was more complex: multi-row zigzags, rhombuses and chevrons. In addition to the cord, a hollow tube was used create the ornament.

Bowles and dishes (112 specimens, 17,9%). There are spherical: AIIa2, AIIIIa1, AIIIIa2), conical: BIa1, BIa2, and cylindrical: DIVb1 bowls, the latter type being the least numerous (fig. 2.9). The top of the rim can be, rounded or angular, straight or slightly bent inside. The bottom is flat, in single cases rounded, the height varies between 5-15 cm.

Among the spherical bowls, two stand out, occupying an intermediate position between bowls and jars. Their shape, size, and ornamentation are similar to jar vessels, but they lack handles, which is why they were included in this category of vessels. Medium proportions of vessels predominate. There are also rare forms with a widening in the upper third of the body. The bottom of the bowls is slightly marked. The surface is usually well smoothed.

The vessels identified as dishes are wide-mouthed and squat (fig. 2.9: c1,2). They have the rim diameter 1.5 to 2.5 times that of the vessel's height, and truncated-conical and hemispherical form. They can be divided into vessels with “open” and “closed” mouths. A large part of the dishes is not ornamented; there are a pair of punctured holes on three of them. Ornamentation was found on three dishes: in two cases they were ornamented with cord impression, in another one with stamp of the “bird's feather” type.

Mugs are represented by two specimens (fig. 3.1: i). They are squat, cup-shaped vessels, with a single handle in the middle part of the body. The handle's cross-section is round.

Rare forms (18 specimens, 2,9%) (fig. 2.10). These include two “crater-shaped vessels”, in the terminology of the author of the excavations (Agulnikov 1995), decorated with incisions and little handles. Their surface is polished and olive-coloured (fig. 2.10: 1, 2). One specimen represented a beaker with an elongated neck and miniature handles at the edge of the rim, decorated with incisions along the shoulder and under the neck (fig. 2.10: 3). Two clay funnels and one small fragment from a third one were found. The funnels are unornamented, they have paired asymmetrical holes, their edge is slightly smoked along the entire diameter of their base. They may have been used as incense burners (fig. 2.10: 4). Another incense burner was a rectangular vessel with 12 holes for hanging and cord ornaments on the outer surface. The inner surface was strongly smoked (fig. 2.10: 11). It is unique not only for the Budzhak culture; this type of vessel is quite rare in the entire Yamna culture region. A carelessly produced vessel in the form of a flask with a narrow neck is also known only in one copy (fig. 2.10: 5). In burial Nerushay 9/49, a small collarless vessel with a rounded bottom was found; it was ornamented with thin cord impressions and slightly polished (fig. 2.10: 6). Vessels with a spout are represented by two specimens, one of which has a pair of handles. Traditionally vessels with a spout are interpreted as drinkers, but the specimen from Bilolssya 3/15 (fig. 2.10: 7) is distinguished by sufficiently large size. It is known that the holes in the vessels served to put them on a long handle (Nikolov 2012) for the convenience of placing the vessel in the fire, but the soot on this particular vessel is absent. There is also a known example of a ladle with an ornament under the rim and on the shoulders (fig. 2.10: 8). Two biconical bowls were decorated with cord ornaments in the form of seven-point stars (fig. 2.10: 10).

To date, we have data about findings of 14 items in burials of Yamna Cultural and Historical Community, that were considered as wooden utensils (Minakova 2015). In the Northwest Pontic region wooden or bark ware found in four burials of Budzhak culture: Alkaliya 33/3, Shevchenko 3/13, Gradeshka II 1/2 and Divisia II 1/3 (Subbotin 1994, 69-71). Bowls and dishes are typical forms of wooden ware (fig. 2.11).

The proposed classification provides possibilities for comparative analysis of the ceramic assemblage (fig. 2.12).

Based on a systematic approach, the classifiable and statistical characteristics of ceramics are the most acceptable for the integrated consideration of the ware made without a potter's wheel. Handmade ware of Budzhak culture, even from a single barrow group, has certain individual differences. Using a systematic method enables us to approach the comparative characteristics of ceramics based on objective criteria, and based, first of all, on the creation of the structural scheme of the vessel. Foreign cultural influences are most often manifested in the shape and ornamentation of ware. Therefore, the analysis of ceramic materials becomes important when considering problems associated with the reconstruction of cultural and historical processes.

The next stage in the study of ceramics may be the comprehensive approach, taking into consideration barrow stratigraphy and absolute dating, revealing imports and imitations, which will allow to clarify the chronology and periodization of the Budzhak culture. The comparative analysis of a pottery complex executed on the basis of a comparative-typological method of synchronous cultures, will provide the opportunity to define potential communication among the people of Budzhak culture.

These problems make it important to find a unified classification and typology for pottery.

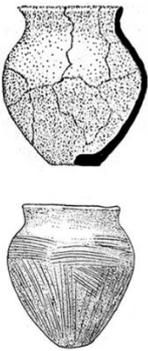
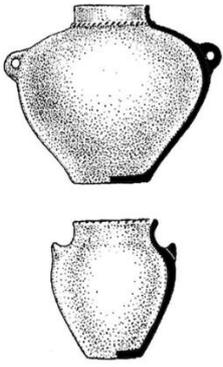
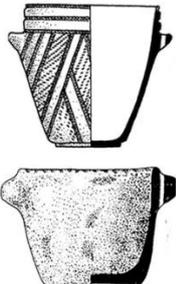
Class 1 – vessels with neck				
Pots and pot-like vessels	Amphorae and amphora-like vessel	Beakers and beaker-like vessel	Jugs	Askoses
 <p>a</p>	 <p>b</p>	 <p>c</p>	 <p>d</p>	 <p>e</p>
Class 2 – neckless vessels				
Jars	Bowls	Dishes	Mugs	
 <p>f</p>	 <p>g</p>	 <p>h</p>	 <p>i</p>	

Fig. 2.1. The main types of Budzhak culture pottery

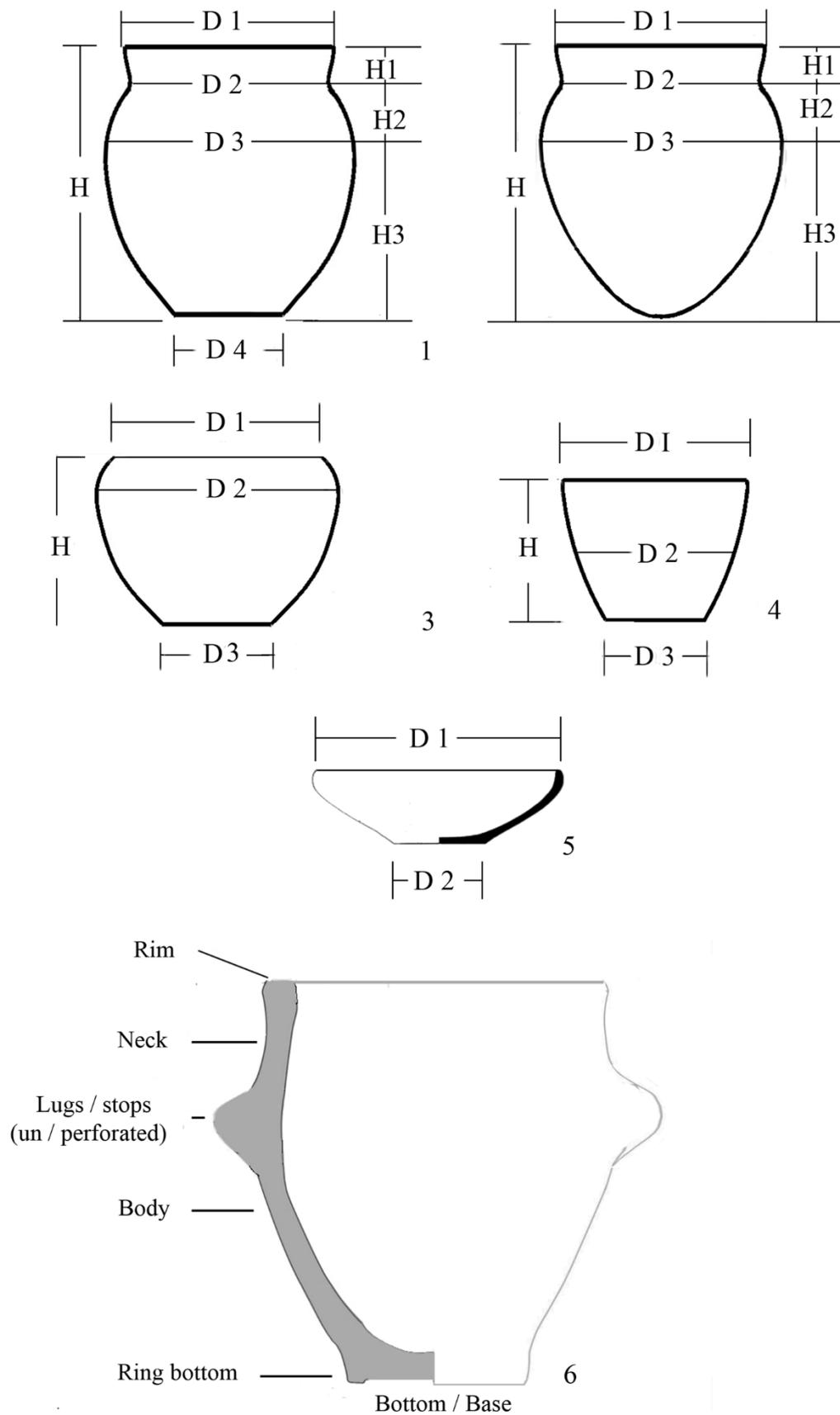


Fig. 2.2. Elements of vessels and their parameters:

1,2 – vessels with neck; 3-6 – neckless vessels; 7 – vessel elements

	a1	a2	b1	b2	c1	c2
AI						
AII						
BI						
BII						
CI						
CII						

Fig. 2.3. Classification of pots from the burials of Budzhak culture

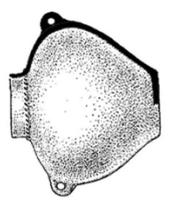
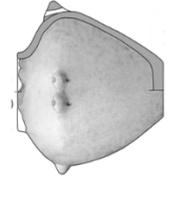
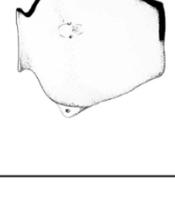
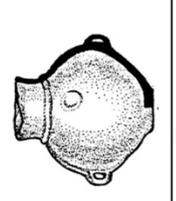
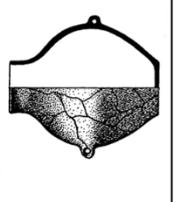
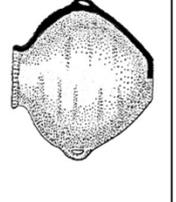
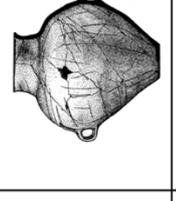
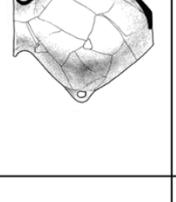
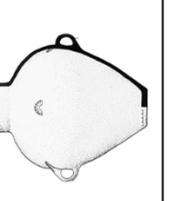
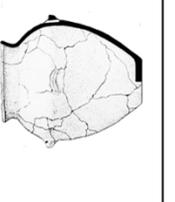
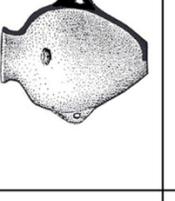
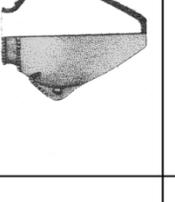
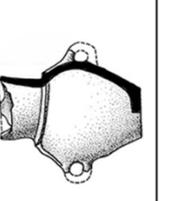
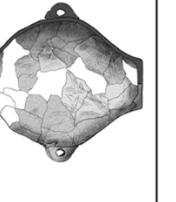
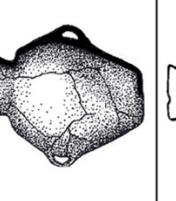
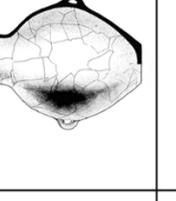
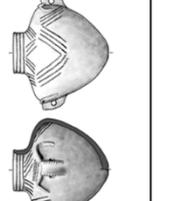
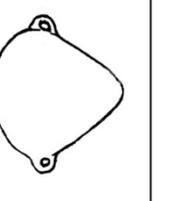
	a1	a2	b1	b2	c1	c2
AI						
AII						
BI						
BII						
CI						
CII						

Fig. 2.4. Classification of amphorae from the burials of Budzhak culture

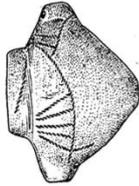
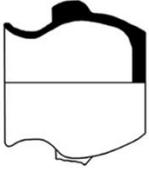
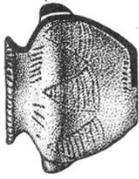
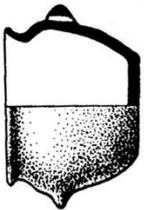
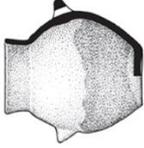
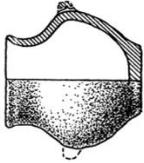
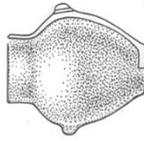
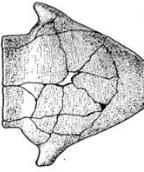
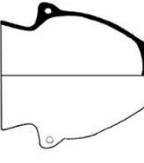
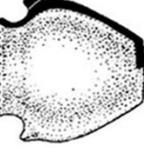
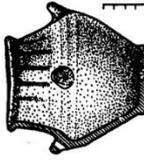
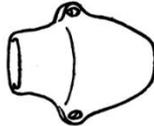
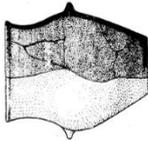
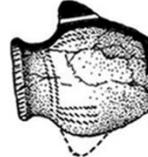
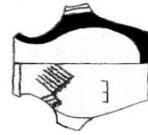
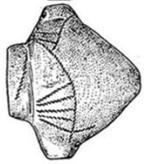
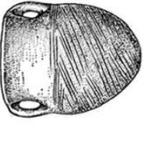
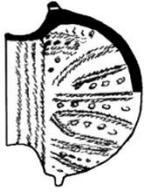
	a1	a2	b1	b2	c1	c2
AI						
AII						
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BII						
CI						
CII						

Fig. 2.6. Classification of amphoroidal vessels from the burials of Budzhak culture

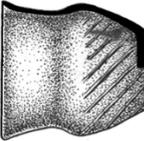
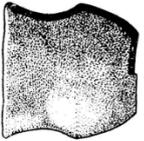
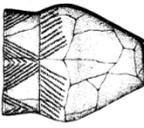
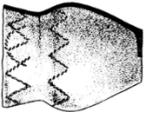
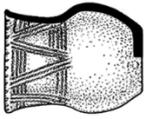
	a1	a2	b1	b2	c1	c2
AI						
AII						
BI						
BII						
CI						
CII						

Fig. 2.7. Classification of beakers from the burials of Budzhak culture

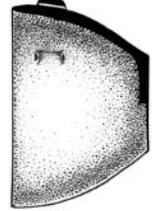
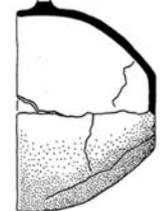
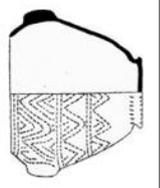
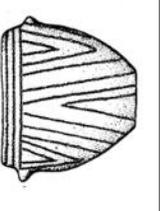
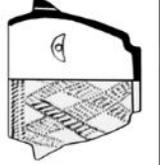
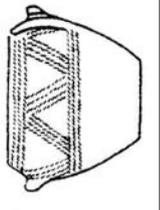
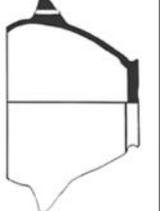
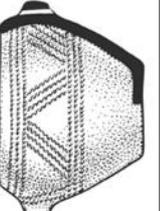
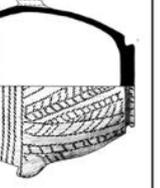
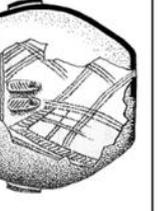
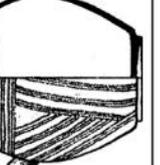
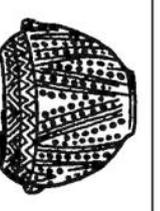
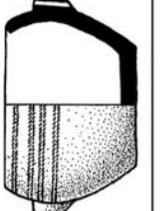
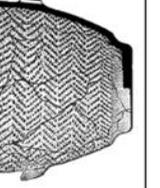
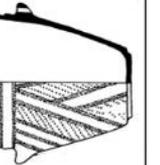
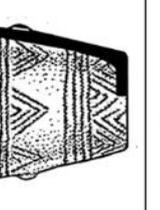
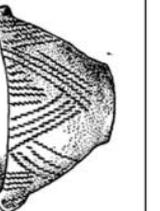
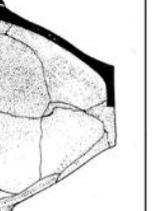
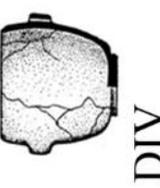
	a1	a2	b1	b2	c1	c2
AI						
AII						
AIII						
BI						
BII						
D, E						
			DIV	EII		DIV

Fig. 2.8. Classification of jars from the burials of Budzhak culture

	a1	a2	b1	b2	c1	c2	
AI							
AII							
AIII							
BI							
BII							
C,D, E							

Fig.2.9. Classification of bowls and dishes from the burials of Budzhak culture

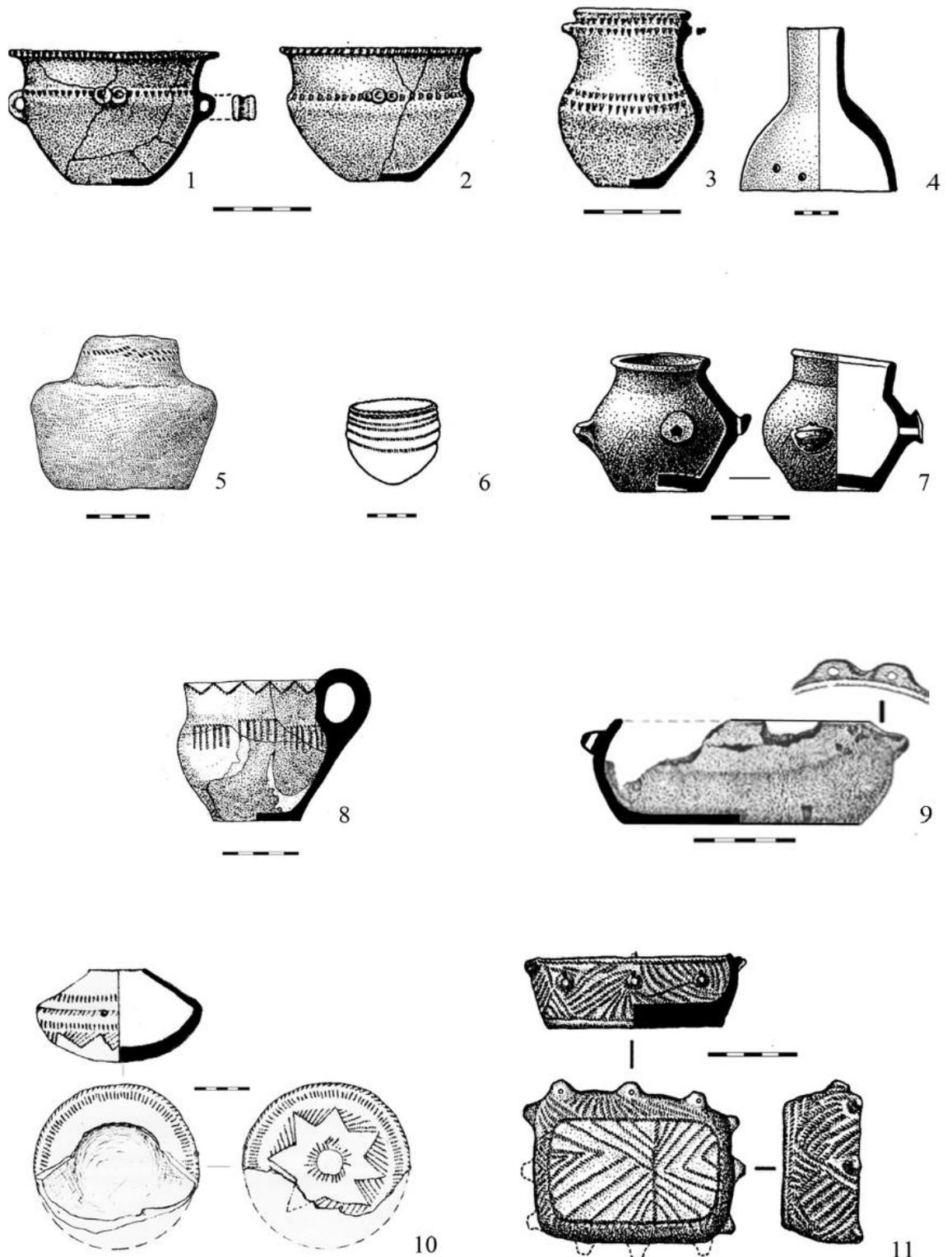
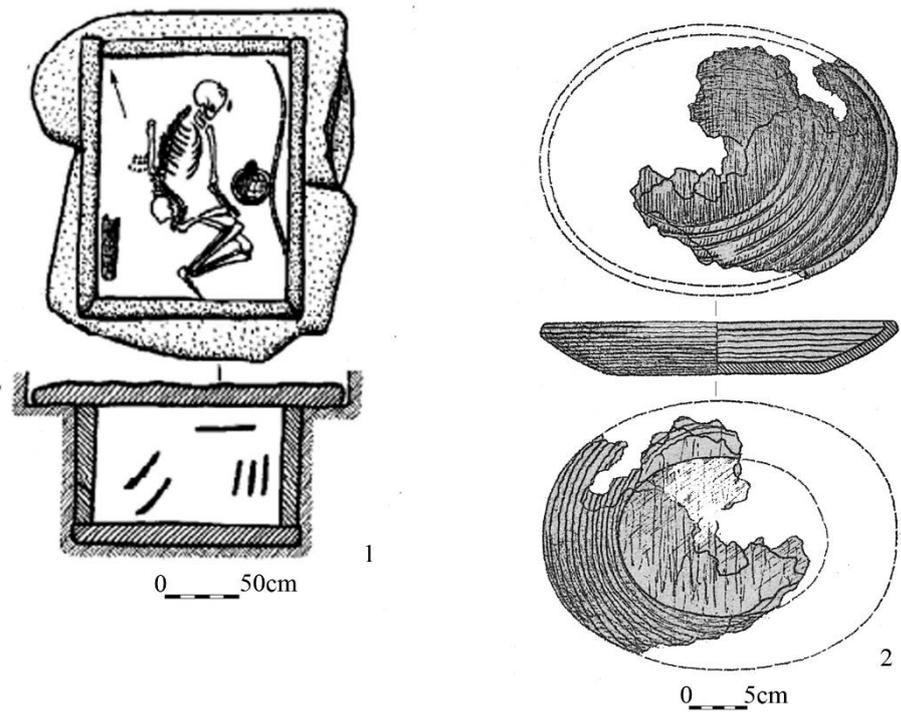


Fig. 2.10. Rare forms of pottery from the burials of Budzhak culture:

1 – Taraclia 14/1; 2 – Cazaclia 8/5; 3 – Taraclia 14/16; 4 – Novogradkivka 1/10; 5 – Kovalivka IV, 1/11; 6 – Nerushaj 9/49; 7 – Bilolissya 3/15; 8 – Olaneshty 1/28; 9 – Dubăsarii Vechi 1/28; 10 – Kurchi 3/8; 11 – Grigorovka 1/8 (after: 1-3 – Agulnikov1995; 4 – Ivanova 2013; 5 – Shaposhnikova, Fomenko, Dovzhenko 1986; 6 – Shmagliy, Cherniakov 1970; 7 – Ivanova 2021; 8 – Yarovoy 1990; 9 – Ivanova 2013; 10 – Toshcev 1992; 11 – Agulnokov, Popovici 2010)



3

Fig.2.11. Wooden dish, quiver and arrows from grave Alcalia 33/3

(1,2 – after Subbotin 1994; 3 – collection of Odessa Archaeological museum, photo by S. Ivanova)

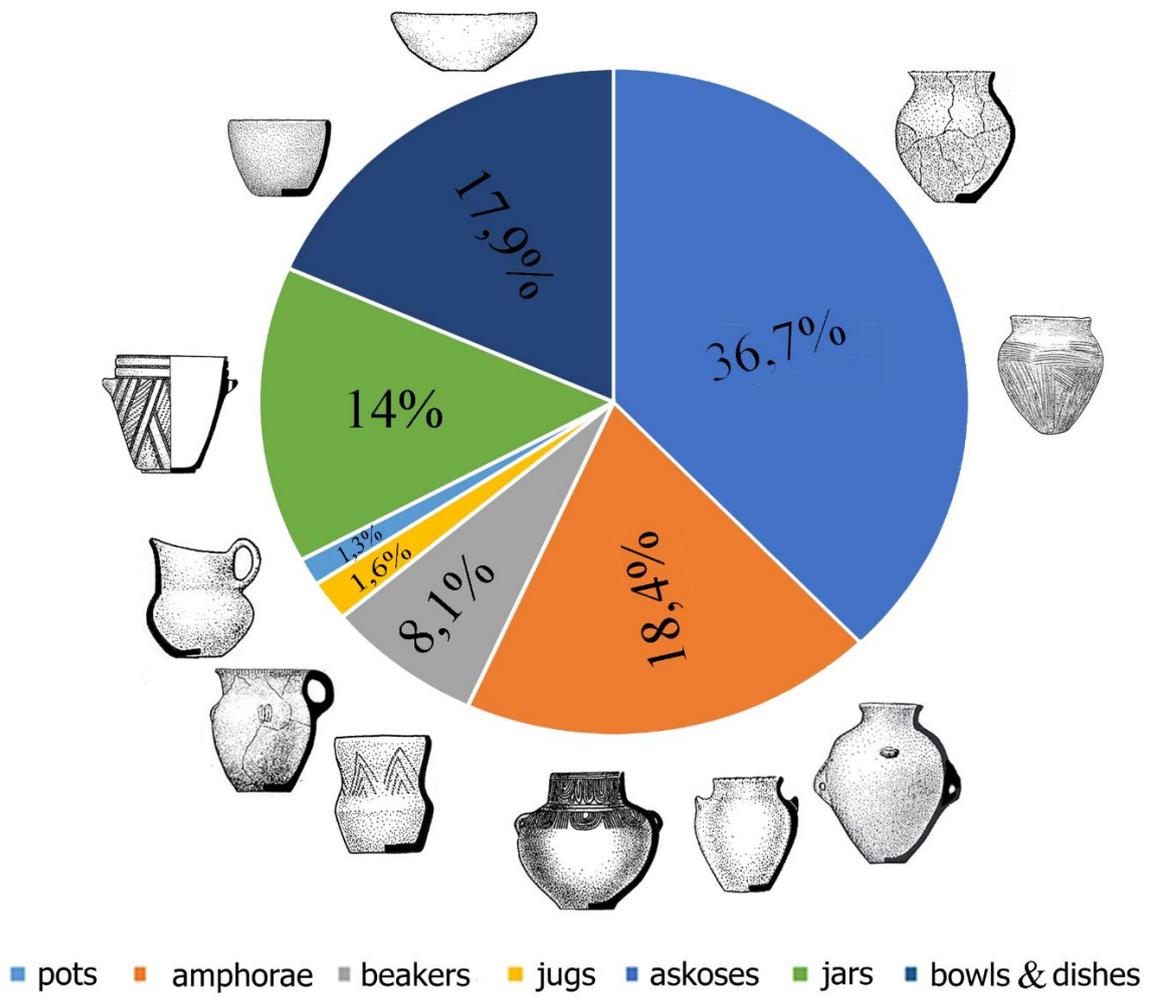


Fig. 2.12. Quantitative ratio of the main forms of pottery in the Budzhak culture burials

CHAPTER 3

IMPORTS AND IMITATIONS IN THE POTTERY OF BUDZHAK CULTURE

The chronological division of Budzhak culture sites and the distinction between the early and late stages hold particular significance in reconstructing the processes of its formation and development. Imports and imitations, parallels, and overall stylistic elements in the ceramics of Budzhak culture, as well as those from the Central European Balkan and Carpathian regions, serve as important chronological markers. Analysing artifacts with intercultural parallels enables reliable correlation between specific burials and distinct chronological phases. Such a situation distinguishes Budzhak culture favorably from the entire Yamna cultural and historical community. Examining burial inventories within the context of stratigraphic observations and available radiocarbon dates revealed specific changes from the early to late stages. These transformations were gradual and not particularly pronounced. However, demanding obligatory or radical changes from a traditional society during its existence is not warranted. It is believed that changes in antiquity in such societies (until the 18th century) occurred slowly and almost imperceptibly. Traditional society seems to be very stable, “everything is interconnected in it, and it is very difficult to remove or change any one element” (Vishnevsky 2005, 52). Periods of rapid development also took place in traditional societies (for example, changes in the territory of Eurasia in the first millennium B.C.), but even in such periods changes were slow compared to today. Alvin Toffler, an American sociologist, put forward a concept based on the idea of successive waves - types of society. The first wave of significant change (a spurt that leads to profound shifts in the life of society) is associated with the spread of the productive economy, in Neolithic. The second “wave of the civilization of change” is marked by the industrial revolution of the XVIII century (Toffler 2004, 16-19). However, demanding obligatory or radical changes from a traditional society during its existence is not warranted.

Comparative Analysis of Pottery from the Early and Late Stages of the Budzhak Culture

Early-Stage pottery (fig. 3.1-3.3)

Pots, predominantly characterised by flat-bottomed forms, exhibit a lack of uniformity and significant diversity in terms of body shape, rim angle, and ornamentation. Local forms of the early stage likely encompass those examples that constitute a stable series, which are undecorated vessels with slightly turned or occasionally straight rims, slender bodies, and shoulders placed in

the upper third of the body (fig. 3.3: 2). These vessels belong to types AI and B1, respectively. Most round-bottomed vessels also belong to the early stage.

Some vessels feature incisions, nail impressions, and applied “peas” decorations on the shoulders, while others have evidence of a decoration of rectangular and triangular depressions produced by impressing a stamp (fig. 3.2: 4,6,8). Such vessel decorations might be borrowed or imitated, possibly linked to the Lower Danube region (Cernavodă II culture) (fig. 3.8).

Jars and jar-like vessels (so-called “Budzhak jars”) exhibit distinct subtypes even in the early stage, with some having a raised base and others without. Both ornamented and undecorated vessels are present and featuring differently configured handles. Their forms are similar to those of some types of Kostolac culture vessels (fig. 3.3: 2; 3.7: 2-5). Corded ornamentation combines with impressions of a hollow tube in some examples. However, such ornamentation types likely belong to the late stage due to parallels with pottery typical of catacomb graves (Bratchenko 1976, 44, fig. 20: 8).

Amphorae vary in shape and size¹. Spherical-bodied amphorae with different rim shapes, flattened ribbon handles, occasionally adorned with incised or corded ornamentation, and ridges applied along handles and bodies can be associated with the early stage. They belong to type A (fig. 3.10: 1-6). Some amphorae exhibit elongated or ovoid bodies and correspond to the later phase, around the mid-3rd millennium BC (3.10: 9,10). On the external surface of the amphora from Cazacilia 3/13, there is dark paint decoration (in the form of non-systematic stripes). A possible resemblance to the Gordinești style of decoration positions this amphora in the early stage, despite having a somewhat distinct body shape compared to the late Trypillia ceramic complex.

According to Marzena Szmyt (1999), this stage corresponds to a diverse array of amphorae from Budzhak burials, which parallels the Globular Amphorae Culture (fig 3.9: 1-10).

In the early stage, *amphora-like vessels* with handles are known, representing a characteristic ceramic type of the Budzhak culture (fig. 3.3:5). These vessels usually feature outwards-turned rims, round or elongated bodies, flat bases, and “tongue-shaped” or pseudo-tunnel handles.

Beakers and beaker-like vessels are few but diverse, and many are ornamented. Some vessels with slightly widening mouths and high shoulders were adorned with rows of parallel lines and impressions of a sharpened stick at the transition from the neck to the body (fig. 3.2: 18). The rims are mostly turned outwards, with only one having a squat body with a high rim turned inward (Myrne 1/12) (fig. 3.10: 14).

¹ I express my thanks Dr. Piotr Włodarczak (Institute of Archaeology and Ethnology PAN), for his help in determining the chronological position of amphorae from the North-western Pontic area.

Bowls with flat or rounded bottoms have been widespread in Budzhak culture since its early stage. Ornamented bowls do not form consistent series and are represented by some examples. These include a bowl of dense clay with a tall profile and a fir tree ornament stamped onto it, found in Novogradkivka 2/9. Another bowl from Novogradkivka 5/4 was adorned with parallel lines and triangular motifs made from rounded impressions (fig. 4.7: 10). Two biconical-shaped bowls were decorated with cord ornamentation in the form of seven-pointed stars on the bottom (Kurchi 3/8, Svetlyi 1/10).

Dishes are mostly undecorated, and sometimes decorated with horizontal cord impressions or notches along the rim (fig. 3.1).

Jugs and cups have loop-shaped handles, and the jugs are also characterised by a pronounced neck to which the loop-shaped handle is attached.

Askoi. A large-sized askos with an asymmetric body from the burial mound near Matroska village is also associated with the early stage. It has parallels in the Ezero culture. The askos from the burial of Ciumai 1/11 is similar.

The findings of a part of the askoi from the North-western Pontic region are comparable with those of the Zimnicea cultural horizon; these are vessels with a rounded body and bevelled throat (Machnik 1991, 18-20; Demchenko 2013, 146-149; Bruyako et al. 2015, 39). The askos pots may be a good chronological indicator and also a sign of a certain kind of interaction between the steppe environment and local elements, defined by late Cernavodă II or Zimnicea finds (Frînculeasa 2020, 154; 2021, 182-183). In the place of transition from the corolla to the body, nail incisions and “pea” balls made of clay were fixed. Characteristically, the askos from Kubey 21/5 is made of dense clay of yellowish color and has a well-smoothed surface; similar clay is used to create a pointed rib beaker from the Kholmske 1/16 burial.

Rare ceramic forms are singular. A fragment of a thin-walled large vessel made of gray clay with elongated vertical protrusions came from the Nerushay 9/9 burial. Crater-like vessels with wide rims and loop handles on the body, with a smoothed grayish surface, were found in two burials: Cazaclia 8/5 and Taraclia 14/1. A vessel with a tall neck and small handles near the rim (Taraclia 14/16) is known in a single case, although there is a rather crude imitation of it in Dzynilor 9/12. Notably, there is an amphora-like red clay vessel with arch-shaped handles.

Late Stage pottery (fig. 3.2)

The ceramic complex in the late stage differs from that in the early stage: although the same vessel categories exist, the types and variations partly change. Tools, weapons, and decorations also became increasingly diverse. Vessels are more standardised and mainly represented by

undecorated ones with slender proportions, high outwards-turned rims, and maximum widening in the middle part of the body. These belong to the type BII. Some vessels have pronounced shoulders located in the upper part of the body and an ovoid body shape. Early-stage traditions seemingly persist in the initial period, characterised by a few vessels with pinches along the body (having prototypes in the Cernavodă II culture) and vessels with low, barely pronounced rims. Cord ornamentation is rare (Bashtanivka 7/21). Some vessels have squat proportions (type A).

“*Budzhak jars*” are represented by both ornamented and undecorated vessels. Sometimes, they are more squatted than in the early stage, but overall, they maintain a similar appearance developed earlier. The ornamental schemes and types of handles are similar to those known from the early stage.

Amphorae. By the middle and beginning of the second half of the 3rd millennium BC, oval vessels of large, slender proportions, with high or short rims, often with narrow bases, can be attributed to this period (Trapivka 1/18, Camenca-Ocnița 6/13, Camenca-Ocnița 3/13, Gorodne III, k. 1, Sărăteni 2/10, Bursuceni 1/14). The last vessel likely corresponds to the beginning of the second half of the 3rd millennium BC, whereas the others are dated more broadly within the 2500–2200 BC range. Some amphorae have relief ornamentation, such as a roll encircling the base of the rim (Trapivka 1/18, Camenca-Ocnița 6/18), rolls connecting the rim to the handles (Trapivka 1/18), and thickened rolls on the handles (Gorodne III, k. 1), which sometimes continue onto the upper part of the body (Camenca-Ocnița 3/13, Camenca-Ocnița 6/18). An amphora from Camenca-Ocnița 3/13 features an additional handle in the middle, between the traditional handles, at the same level; this third handle represents a characteristic flattened appendage with a horizontal opening (a «tongue-shaped handle») seen in Budzhak jars and amphorae.

In the North-western Pontic region, ornamentation is present in both early and late amphora types. Roll-like elements transitioning from the handles to the body, resembling “mustaches” or “horns” are common features, whereas rolls encircling the neck or connecting the rim base to the handles are less frequent.

Amphora-like vessels come in squat and slender proportions with various handle shapes, ornamented and unornamented. Some examples feature rare loop handles that are atypical in the region. A vessel from the western bank of the Southern Buh River, Kovalivka VII, 1/24, is distinguished by its tubular handles connecting the rim to the shoulders and a round bottom.

In addition to traditional round body forms, vessels resemble the outlines of pots or beakers, with some resembling jar-like vessels. However, unlike jars, they have a pronounced neck (fig. 2.25: 6,7). We included them in this category based on the definition of an amphora as a two-handled vessel with a distinct neck.

Beakers exhibit a significant variation in size, with some vessels being quite large. They are often undecorated, with one instance (Kholmske 1/16) featuring a prominent rib in the middle of the body. Some vessels of slender proportions are decorated with cord impressions, both on the rim and body. Horizontal cord impressions are usually found on the rim, whereas diagonal or triangular impressions are found on the body (Kurchi 3/9, Kholodna Balka 1/13). There are instances where a zigzag pattern is present on the rim along with horizontal lines or where horizontal lines are absent, and the ornamentation takes on a «tree-like» composition (Yefymivka 9/17). Each vessel remains unique in its own right despite shared stylistic elements.

It is possible that a portion of the undecorated beakers and beaker-like vessels can also be attributed to the late stage.

Bowls and dishes are predominantly flat-bottomed, unornamented, and lack distinctive features, although they exhibit a fair amount of variety in proportions and size. One stands out from traditional forms by having handles raised above the rim.

Jugs are adorned with cords and relief ornamentation. The two are stylistically similar, and feature loop handles on one side and small protrusions on the opposite side. In one case (Taracliya 16/5), these protrusions are small pairs, while in the other case (Strumok 1/3), they take the form of flattened appendages with vertical openings decorated with cord impressions.

The analysis of the burial inventory indicates that the material culture of the Budzhak population underwent partial changes in the late stage. Although pots and pot-like vessels continue to dominate the ceramic complex, they are now more standardised. Undecorated vessels with slender proportions, high outwards-turned rims, and maximum widening in the middle of the body represent them. Jars and jar-like vessels, at times more squat than in the early stage, generally maintain a similar appearance developed earlier. Among the amphorae, vessels of slender proportions with high or short rims, often with narrow bases, predominate; amphora-like vessels do not exhibit pronounced differences from the early stage. Generally, bowls and dishes retain the same appearance. Most askoi belonged to the end of the early stage and the beginning of the late stage. Some vessels exhibit parallels with the Catacomb and Babyno pottery from the Northwestern Pontic region and more distant territories.

Contacts and intercultural connections of the Budzhak Culture population

The analysis of archaeological materials indicates the development and transformation of the material complex of Budzhak culture from the early to the late stage, as well as changes such as its external connections.

A comprehensive approach to studying archaeological material, data from burial stratigraphy and absolute dating, and identification of imports and imitations in the inventory of cultures in the North-western Pontic region allowed for refinement of the chronology and periodisation of burials and kurgans. In the region's historical development during the late 4th to 3rd millennium BC, two stages were identified: the early and late stages. The primary content of the early stage involved the formation of the Budzhak culture based on local traditions, coexistence with late Eneolithic cultural groups, assimilation of foreign cultural influences that shaped its distinct character, and expansion into neighboring territories. The reconfiguration of connections, new directions of contact, the appearance of catacomb-related populations from the east within the North-western Pontic region, and the impact of these events on the cultural and historical development of the region are distinctive features of the late stage. The conditional boundary between these stages is considered to be in the middle of the 3rd millennium BC (2600/2500 BC). Valentin Dergačev identifies two stages of the Yamna culture of the North-West Black Sea region. He correlates them with two stages of the Early Bronze Age, without taking into account radiocarbon dates. He synchronises the early stage of the Yamna culture on this territory with the Foltesti II culture, and the late stage with the beginning of the Catacomb culture population in the region (Dergačev 1998, 52). Based on the available radiocarbon dates, this refers to 2600/2500 BC. According to Yuri Rassamakin and Alla Nikolova, the majority of the dates of the Yamna culture on the territory of Ukraine lie in the span of 3050/3000 to 2300 BC. The chronological span of the Yamna culture in the Dniester-Danube Rivers region² can be defined as 2900-2200 BC although it is possible to accept for this region two groups of dates, 3000-2600 BC and 2550-2200 BC (Rassamakin, Nikolova 2008, 65).

However, other researchers attribute the beginning of the Yamna culture to an earlier period. “We may conclude that the Yamnaya culture in the steppe and forest-steppe zones of Eastern Europe was developed within the period approximately from 3300-3200 to 2100-2000 BC” (Telegin, Pustovalov, Kovalyukh 2003, 150). “Early Yamnaya material culture and its associated nomadic settlement patterns and kurgan cemeteries began as early as 3300 BC, spread rapidly across most of the Pontic-Caspian steppes perhaps between 3200–3100 BC, and finally in its late phase beginning by 3000 BC saturated all regions in the steppes while Yamnaya nomads burst into neighboring regions... But all Yamnaya regions from the Ural steppes to the Danube steppes have dates in this oldest range. There is no obvious cluster of older dates in one region that might appear as a ‘homeland’.” (Anthony 2021, 24, 27).

² The Dniester-Danube Rivers region is a part of the region "North-West Black Sea Coast", where the population of the Budzhak culture lived.

Therefore, I accept the division of the Budzhak/Yamna culture into 2 stages, but taking into account its earlier beginning (3300-3200 BC). The existence of the Budzhak culture can be defined in the same range as the Yamna culture as a whole (Table 1; Pl. 1-10). All dates have been calibrated by the OxCal program, version 4.4.

There is a large series of unpublished radiocarbon dates of the Budjak culture (about 200) obtained during excavations in Transnistria, near Tiraspol. The dates are made from human bone, animal bone and wood. They correlate with the same chronological range, although there are some dates younger and some dates older³.

This period is also characterised by the most significant transformations in the neighbouring cultures of the Balkan-Carpathian region.

Contacts and Connections in the Early Stage

During this period, the connections between Budzhak culture and the Balkan-Danube region were most pronounced.

Kostolac Culture. The “Budzhak jars” that some researchers attribute to the late stage (Yarovoy 1985; Dergachev 1999), in my opinion, have prototypes in the Kostolac culture (second half of the 4th millennium BC – beginning of IIIrd millennium BC)⁴. Если рассматривать относительную хронологию, то the Kostolac culture is contemporaneous with the classic Baden culture and that it partially lasted parallel with the Vučedol culture (Dukić 2018, 89). Classic Baden is dated in 3100/3000–2900/2800 BC (Horváth, Svingor 2015, 36).

Radiocarbon dates are available for 16 vessels and their fragments from 11 burials of the Budzhak culture, of which 5 are represented by jars and 9 vessels of other types (amphorae, pots, askos). To the first half of the III millennium BC belongs 4 jars, 1 amphora and 1 pot. Other vessels (pots, jars, amphora-like vessel, askos) belong to the second half of the III millennium BC (tabl. 2).

The dates for the jars were analyzed separately to confirm or refute the possibility of their borrowing from the Kostolac culture at the early stage of the Budzhak culture. I used in their analysis methods for summarizing radiocarbon datasets (Ramsey 2017). Modelling with KDE (Kernel Density Estimate) is a novel way of obtaining the most reliable interval of multiple dates. The results are presented in Table 3; this type of vessels was used by the population of the Budzhak culture in the 29th-24th centuries BC. In Vojvodina, the Yamna culture population appeared in the

³ Thanks for the information the author of the excavations Dr Sergey Razumov.

⁴ Thanks to Dr Ina Miloglav (University of Zagreb) and Dr Jacqueline Balen (Archaeological museum in Zagreb) for advice and assistance in the comparative analysis. The Kostolac culture is dated to 3300 - 2700 BC, the Kostolac layer at the Vučedol settlement is dated between 3100-2880 BC (Balen 2005).

31-30 centuries BC (Jarosz, Koledin, Włodarczak 2021). Therefore, contacts with the Kostolac culture look quite real. Moreover “the nature of materials recorded in “under-barrow” settlements suggest a possible chronological proximity between the two stages, in particular with respect to the Kostolac phase” (Koledin et al. 2020, 371).

Among the rest types, the dates for 3 vessels (Vishneve 17/4) show a very wide chronological range, within the early and late stages, which does not allow for their precise dating. The small number of dated vessels suggests additional involvement of the stratigraphic method and the method of comparative analysis to determine their chronological position. However, tentatively, based on the available radiocarbon dates we can assume that the jars appear at the early stage of the Budzhak culture and continue to be used at the late stage. It is possible that the Kostolac culture is also linked to a fragment of a large vessel from the Nerushay 9/9 burial.

Coțofeni Culture. Two-handled beakers at the rim are also connected to the Coțofeni Culture. One is an import (Taraclia 14/16), and the other is a rough imitation (Dzynilor 9/12). In our view, a unique amphora with arch-shaped handles from grave Bolgrad 5/6 might have origins in the Coțofeni culture. Petre Roman identifies such pottery as type IXa (Roman 1976, 130, pl. 27). According to Alin Frînculeasa people of Yamna culture could be contemporary to the development of the Late Coțofeni communities (Frînculeasa 2020a, 51). Dragoș Diaconescu points out that Coțofeni III dates shows that this phase is most likely framed between ca. 3250–2800 calBC, and the very end of the Coțofeni III phase could be contemporary with the first presence of the Yamna type of graves in southwestern Transylvania. For the Romanian Banat region it is stated that the Yamna type of graves is contemporary with the latest Baden manifestations too (Diaconescu 2020, 32). In the central Balkans the Coțofeni-Kostolac group, which is dated to between 32nd and 29th century (Bulatović, Gori, Vander Linden 2020, 1168).

In some regions (in west Transilvania) time gap between e Coțofeni culture and Yamna Culture is clearly visible: the Coțofeni stage falls between ca. 3300–3100 calBC (mean 3220 calBC) and the Yamna stage between ca. 2880–2600 calBC (mean 2730 calBC). (Diaconescu 2020, 23). The updated data shows that the most probable lifetime for the Coțofeni III phase would be the period between 3200/3100–2900/2800 cal BC (Ciugudean et al. 2023, 217). On the one side, the dates demonstrate that there is a significant temporal overlap – up to two centuries in length – between the Coțofeni culture and Yamna migrant communities from the Eurasian Steppe in the early 3rd millennium BC (Ciugudean, Quinn, Uhnér 2022, 32). On the other side, dates fallen in the first third of the 3rd millennium BC, might well indicate the survival of the late Coțofeni communities in the western uplands of Transylvania (Ciugudean et al. 2023, 218).

Probability, in different regions the correlation of Yamna culture and other cultures had a mosaic patterning: the rhythm of change varied from region to region.

Cernavodă II Culture. A series of pots with notches along the rim or body, nail impressions, and applied «peas» on the shoulders are connected with the traditions of this culture. There are vessels with the cultural traits of Cernavodă II and imports from its cultural area (Agulnikov 1995). Cernavodă II (and Foltești II) evolves in an environment that is shaping up as an intermediate one, where the West Pontic steppe is in contact with the eastern periphery of the Carpathian Basin, providing a space for interactions (Frînculeasa 2020, 155).

Ezero Culture. An imported askos from a destroyed mound near the village of Matroska, comparable to similar Ezero II culture examples, demonstrates early connections and can be dated to the beginning of the Bulgarian Bronze Age, Ezero A1 phase⁵. The EBA „Ezero“ and „Mihalich“ phases date between 3200/3100 and 2500/2400 BC. The beginning of the period is marked by a migration of Yamna population from the northwest Pontic region (Alexandrov 2018, 91-92).

Baden Culture. Two unique biconical bowls (Kurchi 3/8, Svetlyi 1/10) with closed mouths and cord ornamentation in the form of seven-pointed stars on the base have analogies in Baden culture (late Baden layer at the Košice-Barca settlement, Slovakia), though not being its actual products (Vladar 2008, 79, fig. 3).

Corded Ware Culture. Two beakers (Trapivka 6/20 and Butor 9/3) with incised decorations, associated with the “Pan-European Corded Ware horizon” (Machnik, 1979, 344, fig. 207), are considered to belong to the early stage of the Budzhak culture. They have parallels with the B1 type of Central European beakers, classified by M. Buchvaldek (Buchvaldek 1966, 138, fig. 5).

Large-sized amphorae, often featuring two handles at the upper part of the body, have been found in burials in the North-western Pontic region and among their northern neighbours in kurgan groups near Yampil on the Middle Dniester (Iwanowa, Koško, Włodarczak 2014). These are not known in the Yamna culture of the Balkan and Carpathian regions. These amphorae have been called “corded” or “Danubian” in literature.

Morphologically and ornamentally, they differ from a distinct group of forms typical for Yamna burials in the North-western Pontic region and are associated with pottery from the Globular Amphora Culture (Szmyt 1999, 150-161; 2000, 447-449). However, it can be assumed that pottery with features of the Corded Ware and Globular Amphora cultures appeared in Yamna culture materials within a more or less contemporary chronological horizon (generally, in the first half of the 3rd millennium BC) (Iwanowa, Koško, Włodarczak 2014, 354).

⁵ Thanks to Dr Iliya Iliev (Institute For Historical Studies, Bulgarian Academy Of Sciences) for the definition.

Likely, by the end of the early to the beginning of the late stage, the second highlighted group of amphorae can be attributed. These are large, slender amphorae with egg-shaped bodies classified as type B, among which are Bursuceni (burial 1/14), Cazaclia (burial 3/13), Gorodne III (kurgan 1), Camenca-Ocnița (burials 3/13 and 6/18), Sărăteni (burial 2/10), Taraklia (burial 10/19), and Efimivka (burial 10/7). All these items are adorned solely with rolls and other applied elements. A characteristic feature is the roll-like elements that connect the upper part with the rim. A specific element is the applied decorations in the form of «whiskers» or «horns» (buchrania?) located above the handles. They are present on amphorae from Gradiște (burial 5/11), Camenca-Ocnița (burial 6/18), and Porogy (burial 3/4).

Amphorae of type B are often ornamented with various horizontal and vertical motifs, a common trait among many cultural groups in the Balkan-Carpathian region, including the Cernavodă II, Foltești II, Mako-Kosihy-Čaka, Schnekenberg - Glina III, Vučedol, and Vinča cultures. Similar forms are also part of the burial inventory of Czech, Lower Austrian, and Moravian Corded Ware cultures. Currently, the dating of these amphorae is not supported by reliable radiocarbon dates. In the case of Moravian and Lower Austrian Corded Ware cultures, these forms were assigned to a later stage of the culture's development. In the case of Moravian and Lower Austrian Corded Ware cultures these forms were attributed to the younger stage of the development of this culture (Sebela 1993, 211; Neugebauer-Maresch 1994, 28). Meanwhile, radiocarbon dating of these Balkan-Carpathian cultures allows the findings of such amphorae to be dated to the first half of the 3rd millennium BC. Meanwhile, radiocarbon dating of these Balkan-Carpathian cultures allows the findings of such amphorae to be dated to the first half of the 3rd millennium BC (Iwanowa, Koško, Włodarczak 2014, 367). An example is the well-known kurgan burial with an amphora discovered in Neusiedl am See, dating to an early period, around 2900-2600 BC (Ruttkay 2002). Therefore, based on chronological data, it can be assumed that the slender “egg-shaped” amphorae of type B could have been from around the middle of the 3rd millennium BC (that is, during the younger phase of the Corded Ware Culture) (Iwanowa, Koško, Włodarczak 2014, 365-367).

Amphorae of elongated proportions are rarely known to be part of the Corded Ware Culture complexes (Buchvaldek 1958). Nonetheless, the shape of the amphora body and its stylistic decoration are important chronological indicators. The early stage (and “Pan-European Corded Ware horizon”) is characterised by the spread of amphorae with spherical bodies. Amphorae with elongated bodies are somewhat more recent, with their origin linked by M. Buchvaldek to cultures of the Lower Danube, particularly the “Danubian type,” characterised by relief (rolled) ornamentation, which is quite common in synchronous cultures of the Lower Danube region (Buchvaldek 1997, 182). Piotr Włodarczak (Włodarczak 2010, 302,310-311) draws attention to

the fact that “oval” amphorae are known from the early Bronze Age in practically the entire Balkan-Carpathian basin, but within the Corded Ware culture, they are only found in areas adjacent to the zones of Yamna culture distribution – in Transnistria and southern groups – Bohemia, Moravia, and Lower Austria. Meanwhile, in his examination of the “Danubian path” the researcher notes a certain influence of Yamna culture in shaping the ceramic complex in certain Corded Ware groups. Through the Yamna population, types of amphorae typical of Carpathian cultures and individual elements of funerary rites were adopted by Corded Ware cultures. The strongest Yamna influence was observed in the Moravian group (Włodarczak 2010, 302). Reliable data are also missing from the North-western Pontic region sites to establish a chronological link between the different amphora types. Some information has been provided by the study of kurgan 1 near the town of Căușeni (Chebotarenko, Cherniakov, Toshcev 1989). Two Yamna culture burials with amphorae having spherical bodies were found in this kurgan. The vessel from grave 14 is decorated with horizontal and vertical applications, similar to vessels from the Danube region and the well-known amphora from the Valea Lupului kurgan, Romanian Moldova (Burtănescu 2002, 562, pl. LVI). This is a clear example of a connection with the region west of Budzhak. An additional chronological reference for the amphorae from Căușeni is the discovery of Zimnicea-type silver hair rings in main burial of kurgan 1. The indicator can also be C14 date of Aricesti I, grave 3 (main burial of the mound), with Zimnicea type hair ring:

DeA-4300: BP 4165±23; BC 95.4% probability:

2878(19.8%)2835

2817(79.1%)2665

2645(1%)2638

(Friculeasa, Preda, Heyd, 2015, 59, tab. 2).

It is believed that the Zimnicea cultural type could have connected both of the Cernavodă II and Schnekenberg-Glina III cultures (Schuster 2000, 9-19) On this basis, they can be dated to the first half of the 3rd millennium BC. It is likely that the amphora found in the mentioned kurgan also belong to the same period.

Significant data on the dating of type B amphorae were obtained from kurgan 1 in Gorodne III. For burial 14, excavated from the third layer of the kurgan, the date Le-2323 was obtained: 3970 ± 40 BP, corresponding to 2579-2345 cal BC (Subbotin 2000, 364). This establishes a terminus post quem for the amphora, which was buried in the younger, fifth layer of the kurgan (Subbotin, Dzygovskiy, Mayorov 1984).

Some of these amphorae find analogies in Corded Ware cultures and among cultures in the Carpathian-Balkan region within a relatively broad chronological range. The decoration with rolls (often segmented), found in this group of amphorae, is characteristic of the Foltești II–Cernavodă

II cultures. Such decoration is occasionally encountered in many Bronze Age cultures of the Danube region and to the south of the Danube: Glina, Jigodin, Livezile, Zăbala, Monteoru Ic4, Schneckenberg A3 and B, and Bogdănești (Vasiliu 2007, 115–116). Meanwhile, vertical roll-like elements on amphorae are known from the end of phase A1 to the beginning of phase B1 of the Ezero culture (Georgiev et al. 1979, 323, tab. 160). The spread of this ornamentation southward from the Ezero culture's area is presumed, extending as far as Greece, where it is found in the Pevkakia- Magoula complexes (Vasiliu 2007, 117).

Handles with rolls on their edges are widening onto the body and handles decorated with fluting are present on some of the amphorae. These features are known in the Ezero II and Cernavodă II-Foltești II cultures. Researchers have linked their origin to the Cernavodă III culture (Nikolova 1999), in which handles with fluting were widespread. M. Dinu notes that the appearance of similar handles in the Glina III culture is connected to its adoption of the traditions of the Cernavodă II culture, which is considered one of the components of the Glina III culture (Dinu 1974, 271). This amphora type is proposed to be classified as the Livezile type (Ciugudean 2011, 33, pl. 12). F. Burtănescu cites examples associated with the Târpești (fig. 4.38, 17) and Zăbala cultural groups as analogies to the oval amphorae of elongated proportions from the North-western Pontic region. These groups, in turn, are comparable to the vessels of the Foltești and Gorodiște-Gordinești cultures (Burtănescu 2002, 166). However, they only have distant similarities to the “oval” amphorae in the North-western Pontic region.

Amphorae from the Lower Danube cultural group of Aldești may be associated with those from Bolgrad 3/1 and Plavni 12/9 graves.

Globular Amphora Culture (GAC). According to Marzena Szmyt, the early stage corresponds to a variety of amphorae from Budzhak burials that have parallels in the Globular Amphora culture.

According Marzhena Szmyt, it appears that in both the west (Prut – Dniester) and on the Southern Bug, Yamnaya and Globular Amphora culture relationships looked for are not encountered in graves representing the oldest YC phase, but rather in younger or even the youngest features in local sequences. Hence, it can be tentatively suggested that the trait transfer happened after 2800–2700 BC (Szmyt 2021, 427-428). These connections led to certain cultural transformations (Szmyt 2000, 461). M. Szmyt notes vessels in the North-western Pontic region whose form and ornamentation demonstrate intercultural contacts. Amphorae from burials such as Yefymivka 2/14, Corpac 2/7, Camenca-Ocnița 3/14, Novoselitsa 19/13, Mărculești 3/4, and Tatarbunary 1/2, are similar in shape. The second group includes ceramics from burials Corpaci 2/7, Orhei 1/3, and Kamianka 445/7. Moreover, vessels from the northern areas of the North-western Pontic region (Camenca-Ocnița, Corpaci, Mărculești, and Orhei) share more similarities

with GAC pottery than vessels from coastal territories (Szmyt 1999, 152–154). Amphorae and pots with corded ornamentation are known from the early stage, with a style comparable to the pottery of the Globular Amphora culture. Analogies to this specific pottery can be found in the Podolian and Volhynian groups of the GAC, and there is a probable connection to the Siret group of GAC, which displays relatively early dates (Szmyt 2009, 242–244). This connection can be seen in the amphora from Mokra 3/4 burial.

Various contacts are presumed between the Yamna culture population and the eastern group of GAC, which had advanced into the Black Sea region: neighbouring connections, family exchange, diffusion of ideas, and military conflicts. This “contact strategy” in the first half of the 3rd millennium BC is evident not only in border regions but also in the penetration of certain representatives of GAC deep into the steppe (Szmyt 2009, 242–244). At the same time, long-distance contacts are evident in the movement of Yamna populations in the Great Poland Lowland area (Koško, Szmyt 2009, 212; Bátor 2006, 190, fig. 134). The role of GAC people in spreading innovations of specific regions of the steppe zone is presumed. For instance, the appearance of Usatovo traits in the Złota culture is associated with it (Szmyt 1999, 204; Włodarczak 2008, 520, fig. 3).

Eastern connections are less pronounced than Western ones. The origin of rounded vessels in the North-western Pontic region is likely linked to the Southern Buh-Dnipro interfluvium, where there are analogies to almost all types (Shaposhnikova, Fomenko, Dovzhenko 1986). Moreover, about half of these vessels were found on the western bank of the Southern Buh, in the border region with the “Southern Buh variant” of the Yamna culture; according to Oleg Mochalov, egg-shaped and round-bottomed vessels make up 45.7% of all known ceramics in Ukraine. They are mostly localised in the eastern part of Ukraine, near the Don basin, comprising approximately 30% in the Dnipro- Southern Buh interfluvium and only 1.8% in the Northwestern Pontic region (Mochalov 2009, 80).

Contacts and Connections in the Late Stage

In the late stage, the Budzhak population connected with contemporary cultures in the Carpathian Basin. It should be noted that certain examples of ceramics from Budzhak burials in this period have parallels with several cultures simultaneously, which is not surprising. In this regard, these cultures are included by Jan Machnik in the so-called “European Civilization of the Early Bronze Age,” and the proximity of their ceramic complexes (highlighting specific vessel types widespread in this horizon) and the similarity of metal artifacts are characteristic features of this commonality (Machnik 1991, 174–181).

Single-handled vessels with flat handles and protrusions on the opposite wall (jars) possibly demonstrate connections between the Budzhak population and the Balkan-Carpathian area. A similar-looking vessel with a handle and small protrusion is known from the early Bronze Age site Hotnitsa-Osmanski Dol in Northern Bulgaria (Krauss 2006). Another similar vessel was found in the Golyama Detelina 2/24 burial in Northeastern Thrace (Kynchev 1995).

Corded Ware Culture. Findings of amphorae comparable to the Corded Ware Culture in the northern part of the Republic of Moldova indicate a northward direction of contacts along the Prut and Dniester rivers. Researchers have noted the Dniester route that connected the Budzhak culture and the Corded Ware Culture (Klochko, Koško 2009, 300). In this context, Yamna discoveries in the Vinnytsia region (Middle Dniester) are interesting.

In a burial mound near the village of Porogy, amphorae of various shapes have been found – both rounded forms characteristic of early Corded Ware types (Porogy 2/6) and elongated proportions with segmented roll-like elements at the base of the rim (Porogy 1/8). These burials may indicate the movement of populations associated with different cultural traditions. The handle of an amphora from Sloboda Pidlisna is unique – in the form of a bucranium, but it's quite possible to compare it with the handles of ovoid amphorae from the Northwestern Pontic region and vessels of the Balkan-Carpathian Basin cultures – Cernavodă III, Cernavodă II, Glina III – where the roll ornament somewhat schematically resembles a bucranium.

Some similarities with the Corded Ware culture can also be observed among amphora-shaped vessels. The style of such a vessel from Olănești 1/15 is similar to vessels of the Middle German group of Corded Ware. Corded traditions are evident in the decoration of amphoras such as Gradeshka I, 5/1, Mikhaylivka 3/6, and Nikolskoe, 16/16. An amphora-like vessel from the burial of Purcari 1/28 is similar to that of a vessel from a Late Corded Ware burial of Viktorivka 1/8 (Machnik 1960, 69–72). The latter vessel shows stylistic similarities with vessels from Central Germany, and a similar vessel was dated to the range of 2850-2201 cal BC: KI-4139, 3960 + 85 (Furholt 2003, Taf. 66). The ornament in the form of hatched triangles, found on some “Budzhak pots” (Semenivka 8/18), has parallels in vessels from Central Germany, particularly in the Halle-Saale region (Matthias 1982, pl. 60, fig. 7; Buchvaldek 1966, 133, fig. 2), and Bohemia (Buchvaldek 1966, 130, fig. 1). Similarities in style are observed in the ornamentation of some beakers from Central Germany (Matthias 1982, pl. 54, fig. 10; 109, fig. 6) and the North-western Pontic region, notably in a vessel from Kholodna Balka 1/13, where horizontal impressions of cord (spirals) are located on the rim, whereas hatched triangles with downward-pointing vertices are found on the body. The influence of later Corded Ware circle cultures is traced in beakers from Bastanivka 7/12, Kurchi 3/9, and Efymivka 9/17. These vessels match in shape and feature distorted ornamental schemes, breaking the rhythm of the ornament and segmenting the horizontal

frieze with zigzags, suggesting local production. However, it should be noted that deviations from standards are found at the periphery of the Corded Ware Culture. For example, similar “non-standard” motifs with disrupted ornamental rhythms have been found on a beaker from the far western periphery of the Corded Ware Culture, in the southwestern part of Germany, in the Tauber River area (Dresely 2004, pl. 10, fig. 3). A vessel from the burial Bastanivka 7/21, adorned with horizontal cord impressions on the straight rim and an elongated zigzag on the body, also has parallels in the ornamentation of the beakers of the late German Corded Ware group (Matthias 1982, pl. 29, fig. 7).

It is likely that we can speak of the local (but imitative) production of some amphorae, with analogies in the cultures of Central Europe and the Balkan-Danubian region. This is evident in the pliable ornamentation, handle forms, and the combination of cross-cultural elements in a single vessel. Particularly interesting is the amphora from Trapivka 1/18, which follows Corded Ware traditions but has a slightly asymmetrical body and slanted rim, resembling the *askoi* found in the cultures of the Lower Danube. This vessel demonstrates an original combination of several ceramic traditions, and is likely a product of local production.

A vessel with a biconical sharp-ribbed body and corded ornamentation – Răscăeții Noi 1/4 (Yarovoy 1990, 13, fig. 3, 5) – stands out. However, parallels can be found to some extent in the jug-like vessels of the Moravian Corded Ware group (Buchvaldek 1966, 489, abb. 4; Kolář 2018, 53, fig. 27, 228, fig. 150). However, the fragmented nature of these findings hinders definitive comparisons.

During the late stage, eastern connections between the Budzhak population and the Yamna culture of the Southern Buh and Dnipro interfluvium are evident. A round-bottomed vessel from the burial Nerushay 9/49, adorned with parallel cord impressions (Shmagliiy, Chernyakov 1970, 21, fig. 15: 1), finds parallels in the Yamna culture of the Dnipro River region – the burial Chkalovka I, 1/1 (Kovaleva, Shalabudov 1992, 13, fig. 4. 4) – as well as in the early Catacomb burials of Northern Donets – Biryukovo 4/7, Novoselovka 2/2 (Bratchenko 2001, 80, fig. 6: 8; 98, fig. 24: 2). Flat-bottomed, squat pots can be compared to similar forms found in the Southern Buh variant of the Yamna culture (Shaposhnikova, Fomenko, Dovzhenko 1986, 22-41).

Certain connections with Transcaucasus were identified. Alexander Gay noted links between the Novotitorovskaya and Budzhak cultures, suggesting that they manifested in circular planning of sub-mound burials and ceramic traditions – discoveries of pottery similar to “Budzhak jars” and other vessels. Based on this, the researcher postulates the involvement of the Novotitorovskaya population in the development of the Budzhak culture (Gay 2000, 202). The process was likely reversed, considering the earlier nature of the formation of the Budzhak culture

and the significant Western analogies (Kostolac Culture, Coțofeni Culture) with “Budzhak jars”; A. Gay cites this type of pottery as evidence of contacts (Gay 2000, 143, fig. 43. 1).

Gennadiy Toshev proposed the hypothesis that Crimea served as a transit territory connecting the steppe regions of the North-western Pontic region with the Transcaucasus. Perhaps, it was through this route that Budzhak traditions spread to the East. In this context, let's note the burial at Iztochne 12/5 with a corded-patterned beaker (Gening, Korpusova 1989, 33). Analogies of this beaker can be found in the North-western Pontic region, as well as ceramic finds from Yamna burials in Crimea, which also bear similarities with Budzhak (Toshev 2007, 43, fig. 13: 10; 44, fig. 14. 1; 45, fig. 15: 7, etc.).

Connections with Catacomb and Babyno Cultures. These are partly expressed in burial practices and in some similar types of ceramics. Some types of squat vessels are likely associated with the influence of the Catacomb culture. A large biconical vessel with handles at the widest point of the body has certain parallels in the Babyno pottery. At the same time, Budzhak ceramics can be found within the ceramic assemblage of the Catacomb and Babyno cultures (Ivanova, Toshev 2015, 27-32, fig. 10-13).

Burials of the Babyno culture occasionally contain jars, amphorae, and beaker-like vessels. These types are not characteristic of Babyno culture itself and have their origins in Budzhak ceramics. A squat jar with notches on the rim from the Babyno burial at Strumok 5/6 is an imitation, as its manufacturing technique is Babyno. It is analogous to a vessel from the Budzhak burial at Olănești 1/26. Despite imitating the external appearance of a “Budzhak jar”, the red firing colour and technological methods (as well as coarse clay) are in line with the Babyno culture.

The distinction (in terms of chronological periods) between the early and late complexes of material culture is one of the components for reconstructing the historical development of the North-western Pontic region in the Early Bronze Age. Another component to consider is the intercultural connections that manifested both in the Budzhak culture's habitat and the Balkan-Carpathian region.

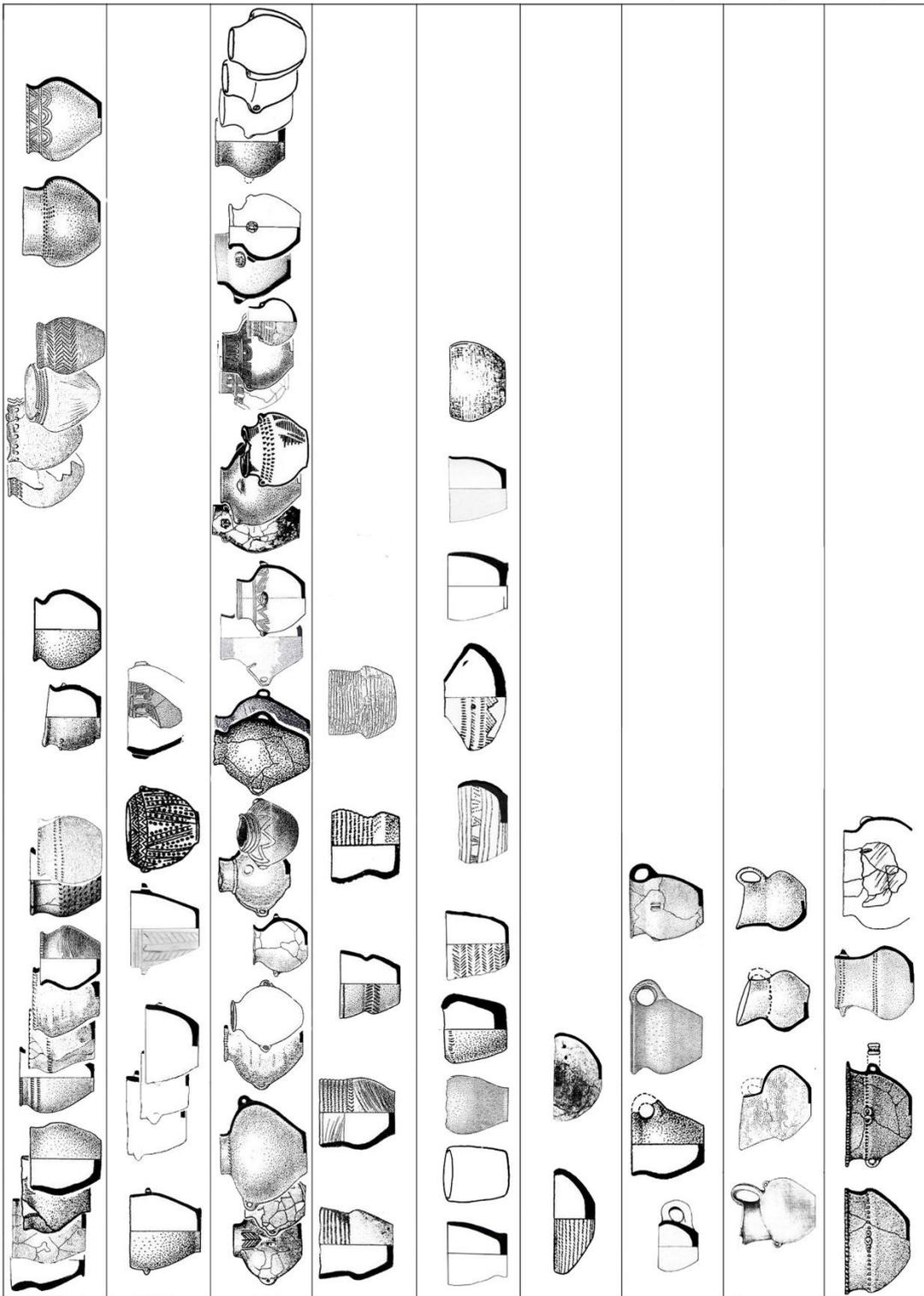


Fig. 3.1. Pottery and artifacts of the early stage of the Budzhak culture

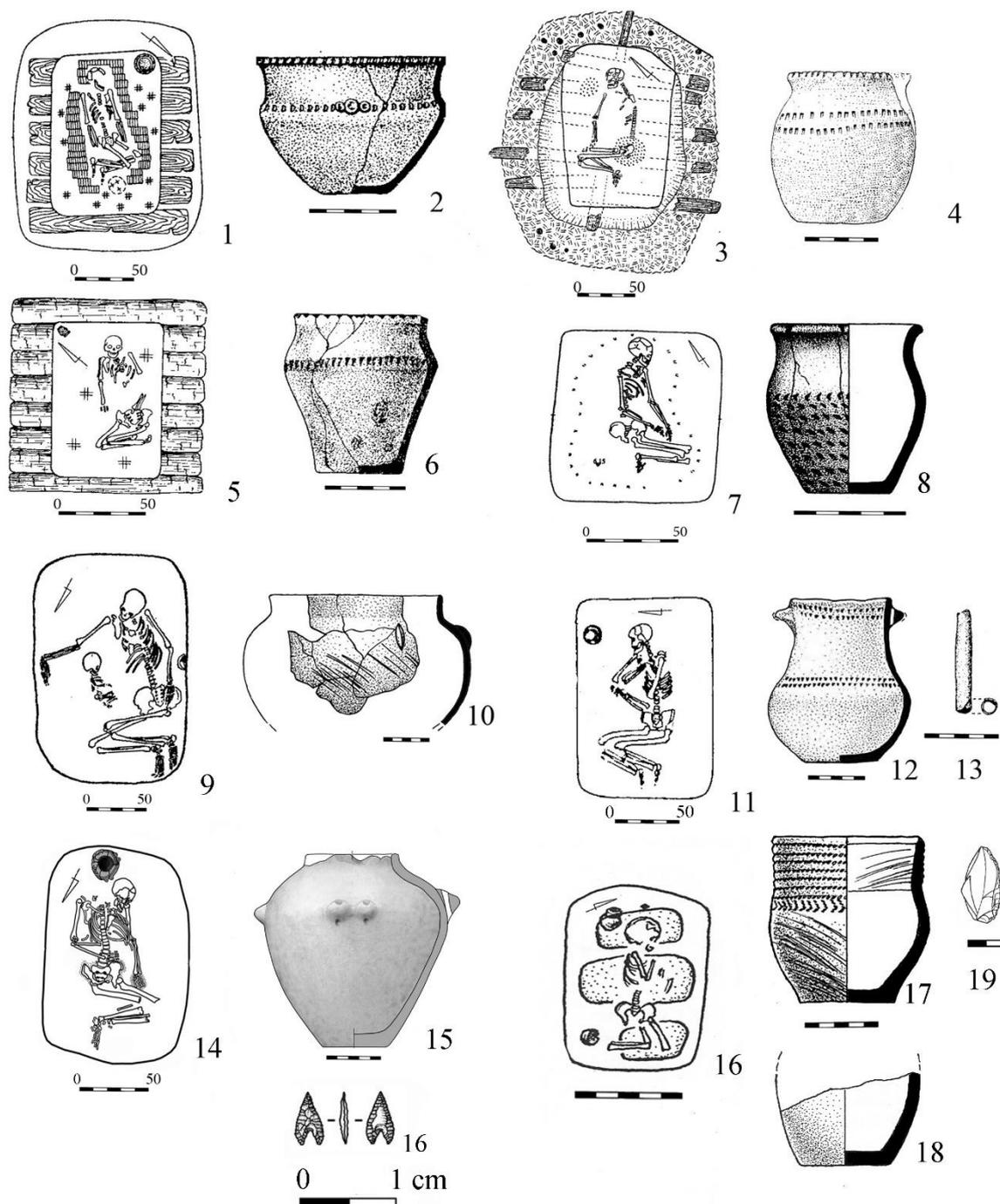


Fig. 3.2. Burial complexes of the early stage of the Budzhak culture:

1,2 – Cazaclia 8/5; 3, 4 – Kovalivka II 8/4; 5, 6 – Olănești 13/8; 7, 8 – Sărăteni 3/14; 9, 10 – Nerushay 9/9; 11–13 – Taraclia 14/16; 14–16 – Hlinaia 110/3; 17–19 – Trapivka 6/20
 (after: 1,2,13–15 – Agulnikov 1995; 3,4 – Shaposhnikova, Fomenko, Dovzhenko 1986; 5,6 – Yarovoy 1990; 7,8 – Levițki, Manzura, Demcenco 1996; 9,10 – Shmaglii, Chernyakov 1970; 14–16 – Razumov et al. 2013; 17–18 – Subbotin, Ostroverkhov, Dzygovskiy 1995)

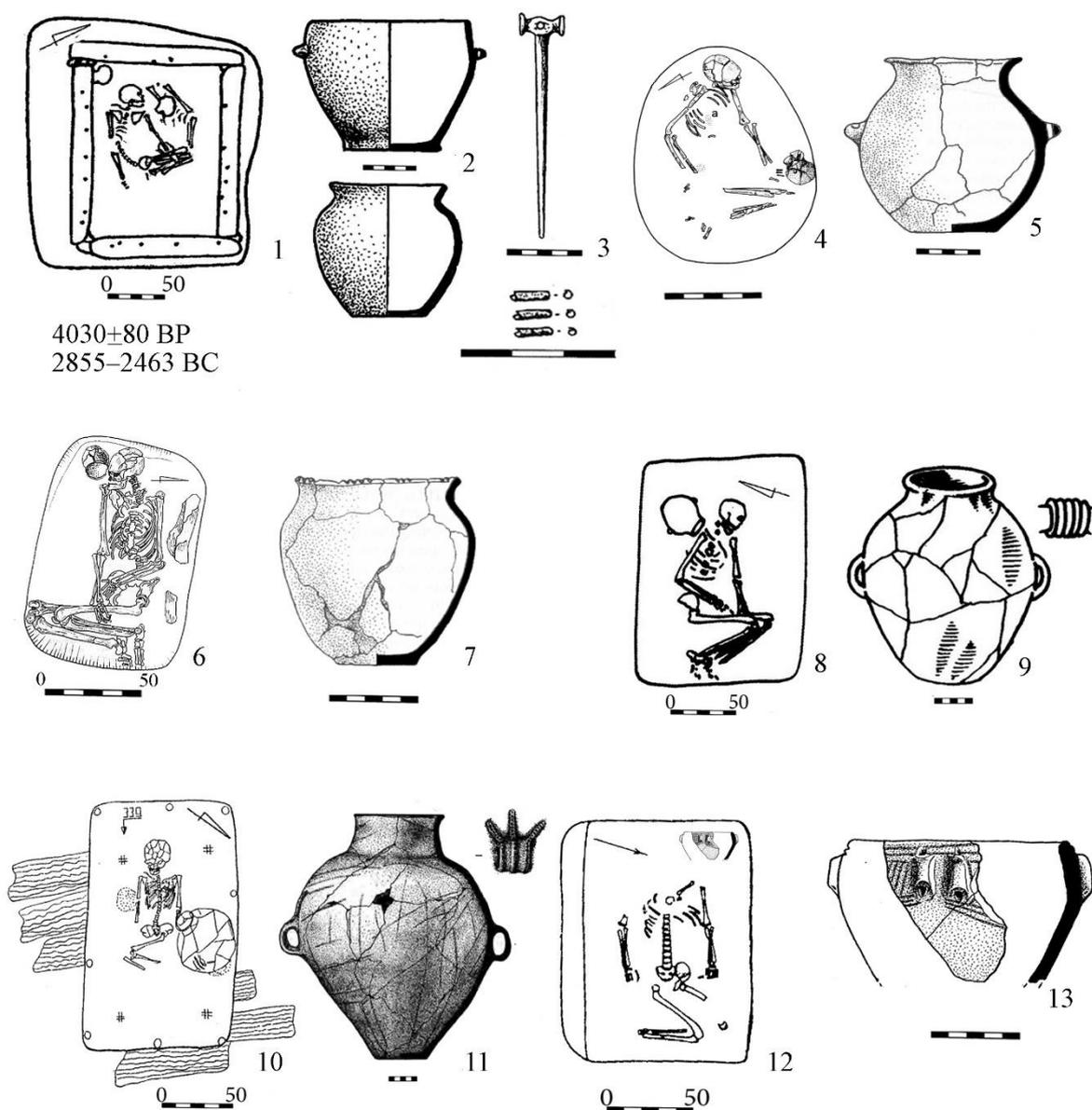


Fig. 3.3. Burial complexes of the early stage of the Budzhak culture:

1–3 – Stary Belyary 1/14; 4,5 – Kholodna Balka 1/7; 6,7 – Kholodna Balka 1/6; 8,9 – Yefymivka 10/7; 10,11 – Cazaclia 3/13; 12,13 – Novoselitsa 19/19

(after: 1–3 – Petrenko 1991; 4–7 – Petrenko 2010; 8,9 – Shmagliy, Chernyakov 1985; 10,11 – Agulnikov 2008; 12,13 – Subbotin, Ostroverkhov, Dzygovskiy 1995)

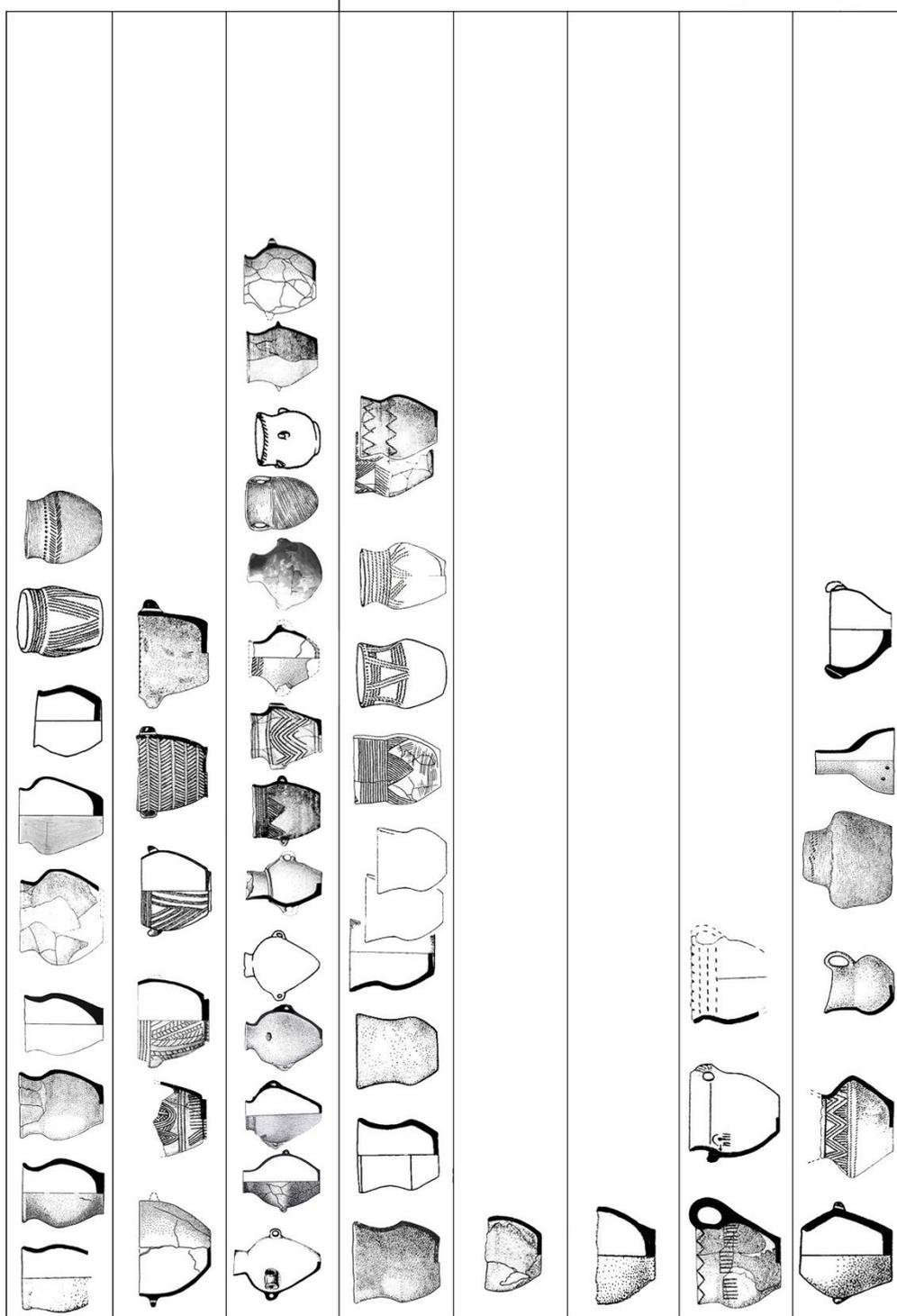


Fig. 3.4. Pottery and artifacts of the Late Stage of the Budzhak culture



Fig. 3.5. Burial complexes of the late stage of the Budzhak culture:

1,2 – Sychavka 1/15; 3–5 – Revova 3/7; 6–8 – Vapnyarka 4/18; 9,10 – Vyshneve 17/36; 11–14 – Vyshneve 17/4 (after: 1,2 – Ivanova, Saveliev 2011; 3–5 – Ivanova, Petrenko, Vetchinnikova 2005; 6–8 – Ivanova, Ostroverkhov, Saveliev 2012; 9–14 – Dvorianinov, Dzygovskiy, Subbotin 1985)

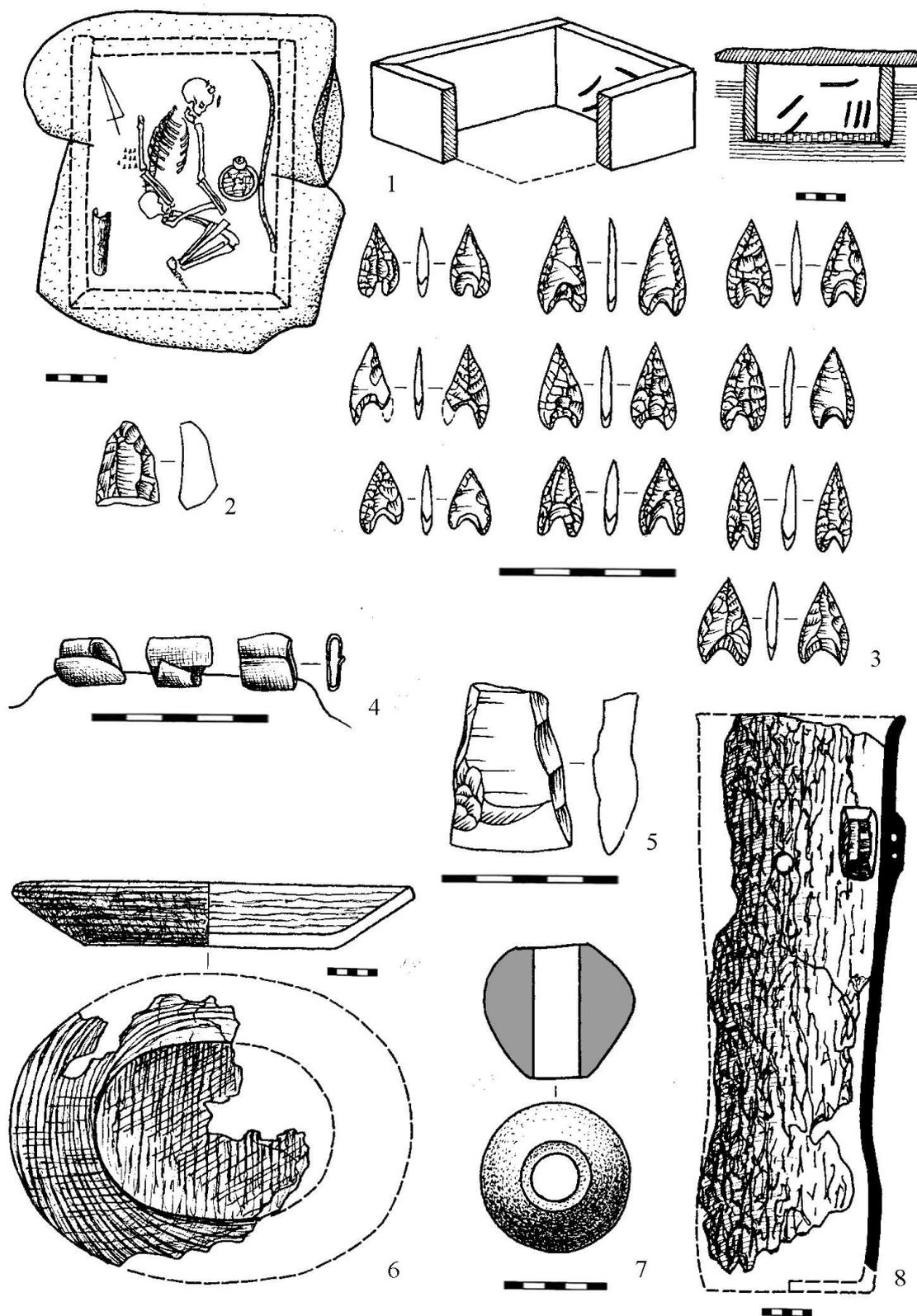


Fig. 3.6. Burial complex of the late stage of the Budzhak culture, Alkaliya 33/3:

1 – burial plan; 2 – blade fragment with semi-abrupt convergent retouch; 3 – flint arrowheads; 4 – composite copper bracelet; 5 – flint axe; 6 – wooden dish; 7 – stone mace; 8 – wooden quiver for arrows (after: Subbotin 2003)

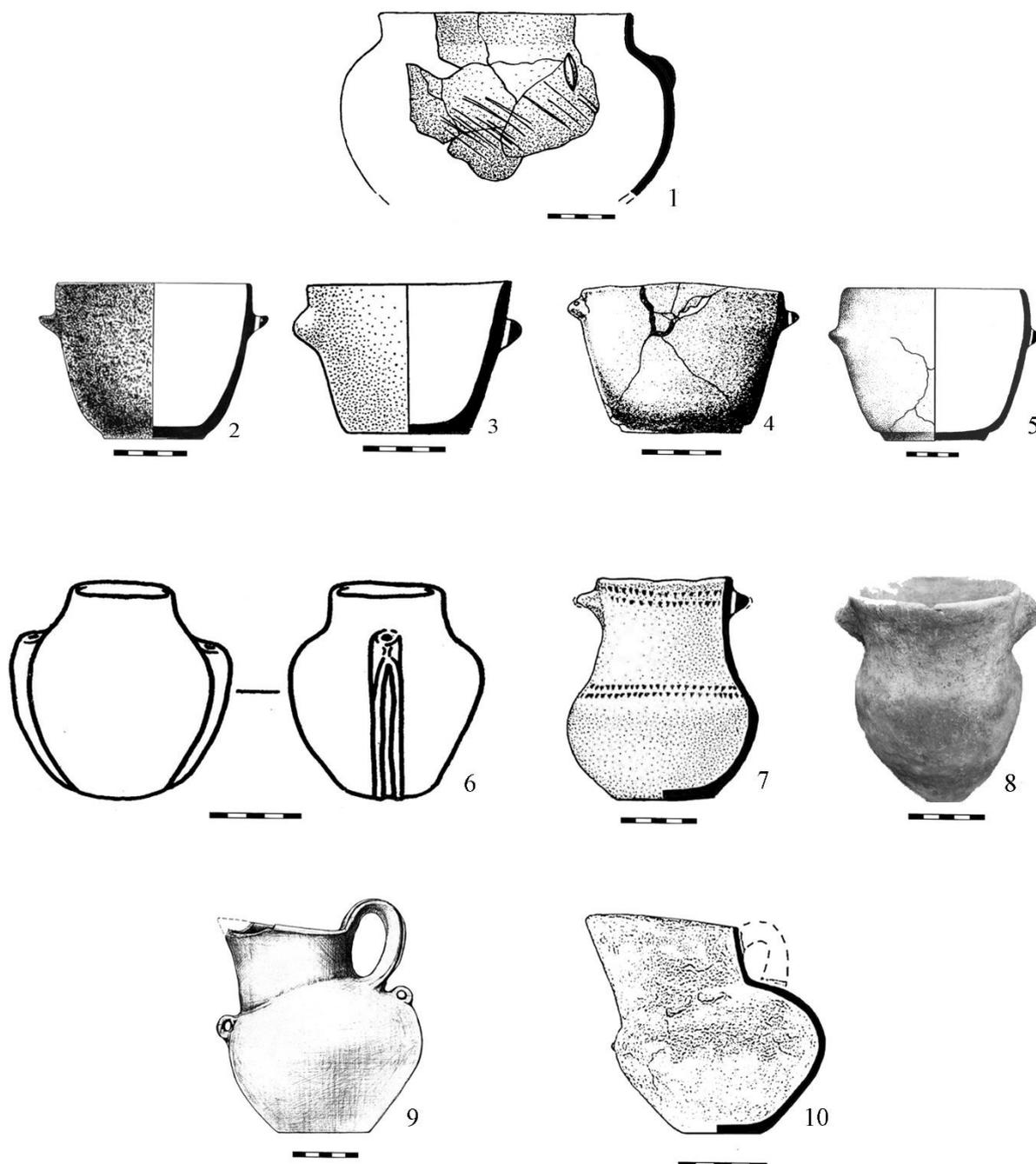


Fig. 3.7. Vessels from the Budzhak culture burials with features of the Kostolac (1–5), Coțofeni (6–8), and Ezero A (9–10) cultures:

1 – Nerushay 9/9; 2 – Mologa 1/18; 3 – Novohradkivka 3/10; 4 – Scherbanka 1/10; 5 – Dubăsari 31/7; 6 – Bolgrad 5/6; 7 – Taraclia 14/16; 8 – Dzynilor 9/12; 9 – Matroska, kurgan 1; 10 – Ciurnai 1/11
 (after: 1,5 – Shmaglii, Chernyakov, 1970; 2 – Maliukevich, Agulnikov, Popovici 2017; 3 – Ivanova 2021; 4 – Beylekchi 1993; 5 – Dergachev 2023; 7 – Sava, Agulnikov, Manzura 2019; 9 – Bruyako, Ivanova, Subbotin 2015; 10 – Ciobanu et al. 2016)

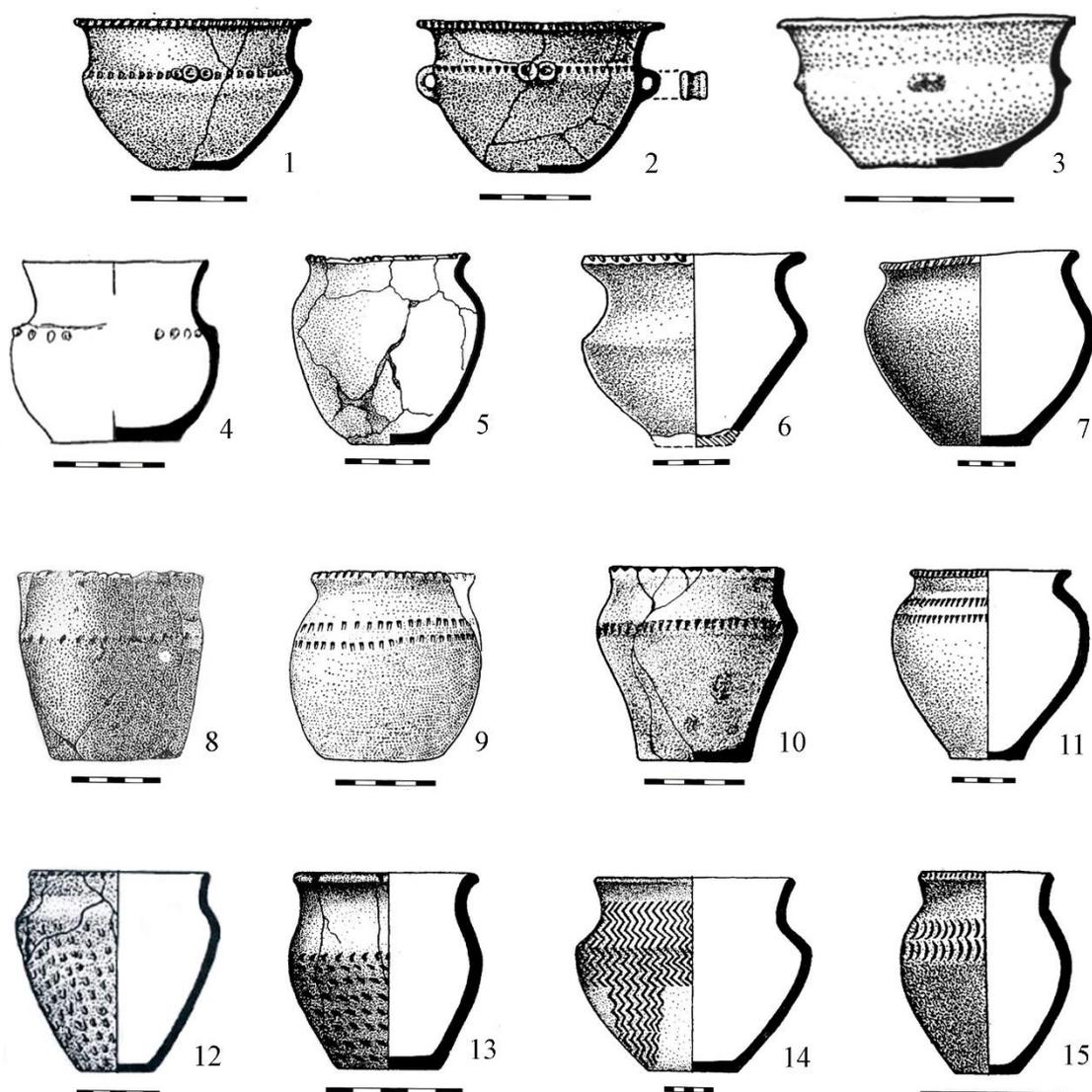


Fig. 3.8. Vessels from the Budzhak culture burials with features of the Cernavodă II culture:

1 – Cazaclia 8/5; 2 – Taraclia 14/1; 3 – Cazaclia 15/1; 4 – Plavni 9/7; 5 – Kholodna Balka 1/6; 6 – Trapivka 6/19; 7 – Bilolissya 11/9; 8 – Kovalivka I, 3/8; 9 – Kovalivka II, 8/4; 10 – Olănești 3/8; 11 – Novohradkivka 1/4; 12 – Burlănești, barrow 2; 13 – Sărăteni 3/14; 14 – Sărăteni 1/13; 15 – Sărăteni 2/5
 (after: 1–3 – Sava, Agulnikov, Manzura 2019; 4 – Andruk, Dobrolubskiy, Toshcev 1985; 5 – Petrenko 2010; 6 – Subbotin, Ostroverkhov, Dzygovskiy 1995; 7 – Subbotin, Dzygovskiy, Ostroverkhov 1998; 8, 9 – Shaposhnikova, Fomenko, Dovzhenko 1986; 10 – Yarovoy 1990; 11 – Subbotin 2000; 12 – Demchenko, Levițki, 2006; 13–15 – Levițki, Manzura, Demcenco 1996)

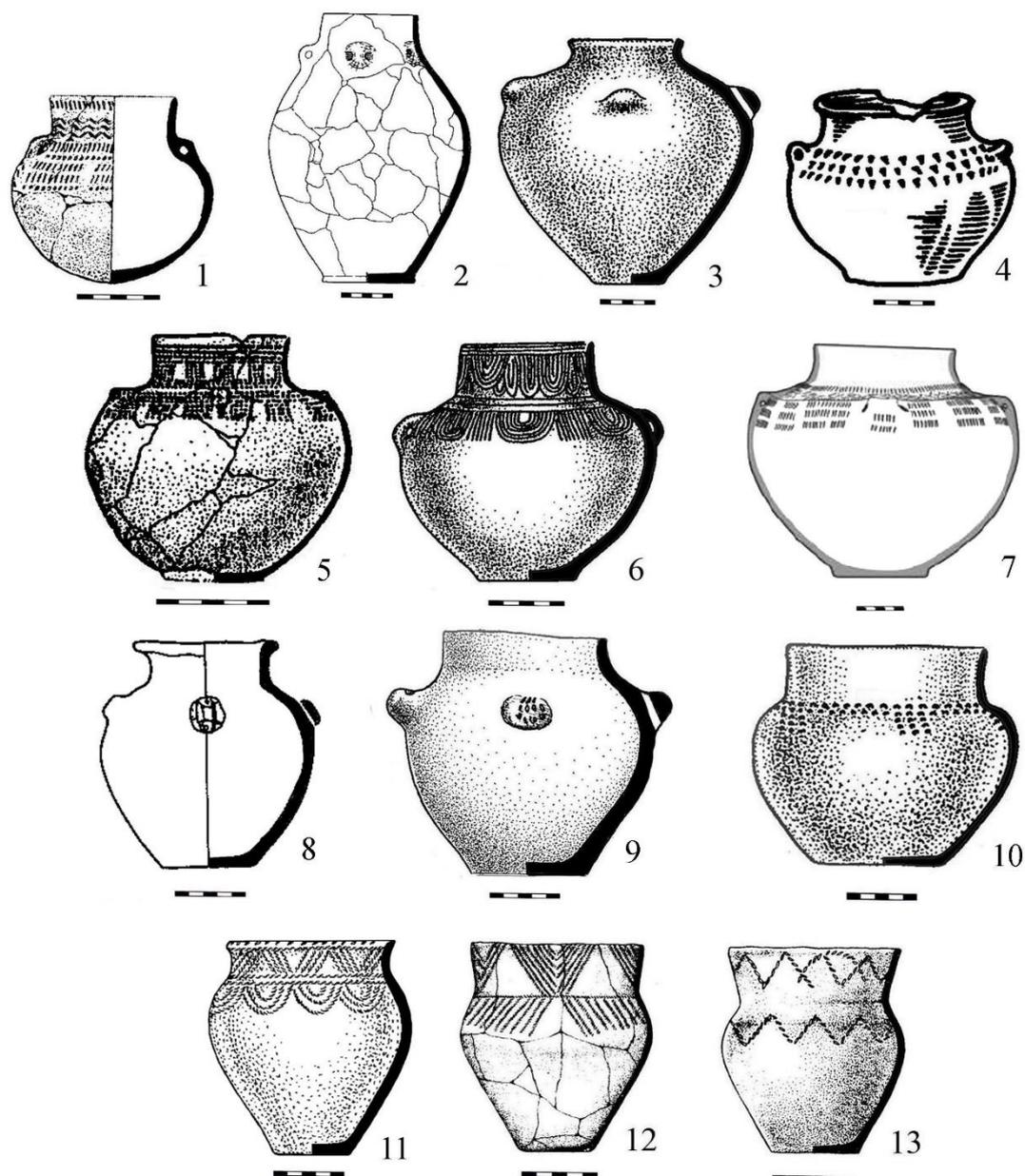


Fig. 3.9. Vessels from the Budzhak culture burials with with features of the Globular Amphora culture:
 1 – Mocra 3/4; 2 – Mărculești 3/4; 3 – Corpaci 2/13; 4 – Yefymivka 2/14; 5 – Kamyanka 3/14; 6 – Corpaci 2/7; 7 – Bădragii Vechi 25/12; 8 – Tatarbunary 1/2; 9 – Novoselytsya 19/14; 10 – Kamyanka 445/7; 11 – Orhei 1/3; 12 – Olănești 15/4; 13 – Olănești 5/5
 (after: 1 – Kashuba, Kurchatov, Shcherbakova 2001/2002; 2 – Beylekchi 1992; 3, 6 – Yarovoy 1984; 4 – Shmagliy, Chernyakov 1985; 5 – Manzura, Klochko, Savva 1992; 7 – Dergachev 2023; 8 – Subbotin 1988; 9 – Subbotin, Ostroverkhov, Dzygovskiy 1995; 10 – Dergachev 1999; 11 – Popovici 2008; 12, 13 – Yarovoy 1990)

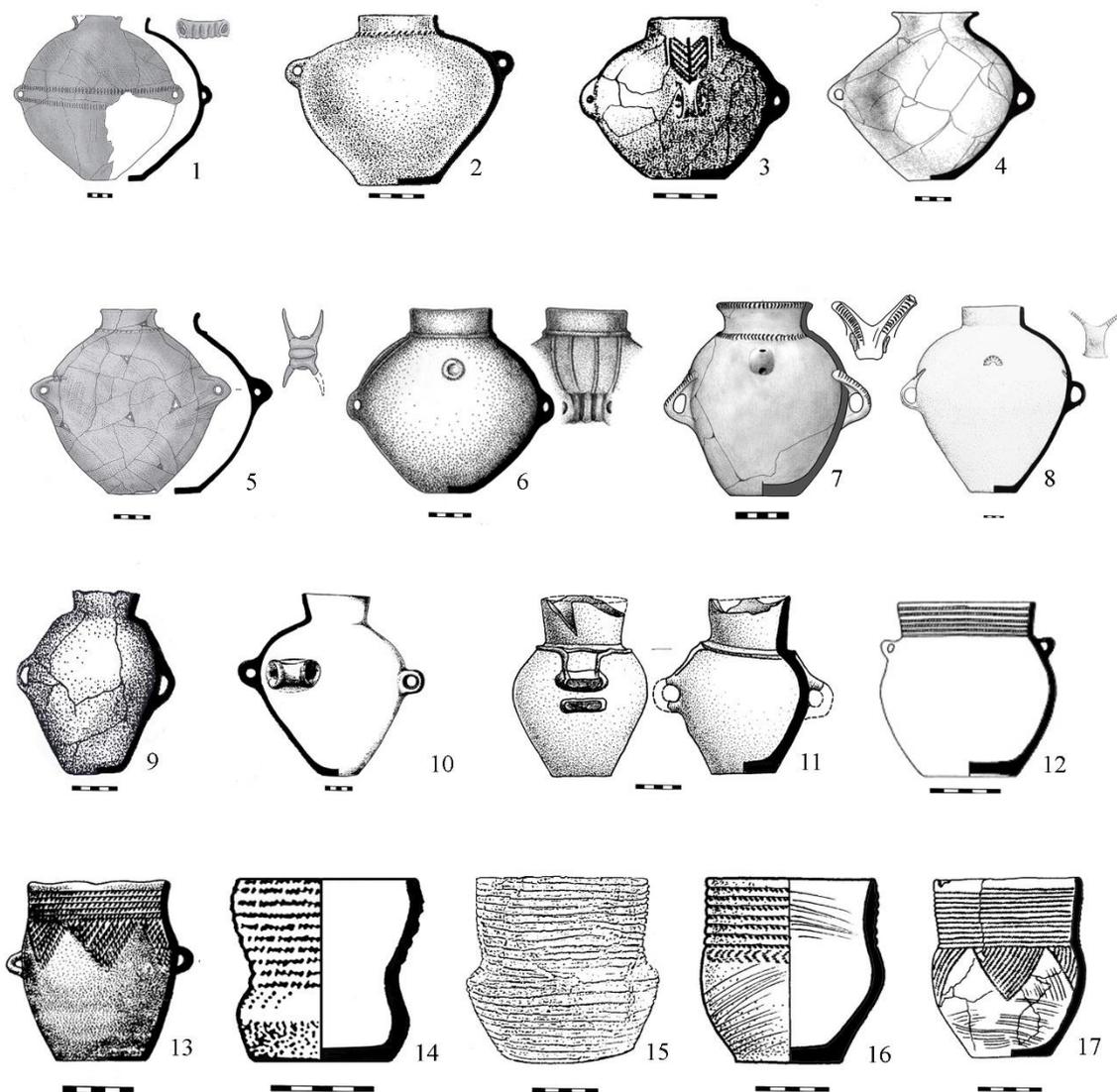


Fig. 3.10. Vessels from the Budzhak culture burials with features of the Corded Ware culture:

1 – Porohy 2/6; 2 – Gura Galbenei 2/5; 3 – Olănești 14/1; 4 – Bursuceni 1/19; 5 – Porohy 4/8; 6 – Kaushany 1/4; 7 – Hlinaia–Sad 1/15; 8 – Petrești II, 1/1; 9 – Taraclia 10/19; 10 – Gorodne, barrow 1; 11 – Trapivka 1/18; 12 – Pererita 1/9; 13 – Purcari 1/29; 14 – Mirne 1/12; 15 – Kamyanka, barrow 1; 16 – Trapivka 6/20; 17 – Kholodna Balka 1/13 (after: 1, 5 – Harat, Potupczyk, Razumov 2014; 2 – Dergachev 1973; 3, 13 – Yarovoy 1990; 4, 6, 8 – Dergachev 2023; 7 – Razumov et al. 2015; 11, 16 – Subbotin, Ostroverkhov, Dzygovskiy 1995; 9 – Sava, Agulnikov, Manzura 2019; 10 – Subbotin, Dzygovskiy, Mayorov 1984; 12 – Kurchatov 2006; 14, 15 – Alexeeva 1992; 17 – Petrenko 2010)

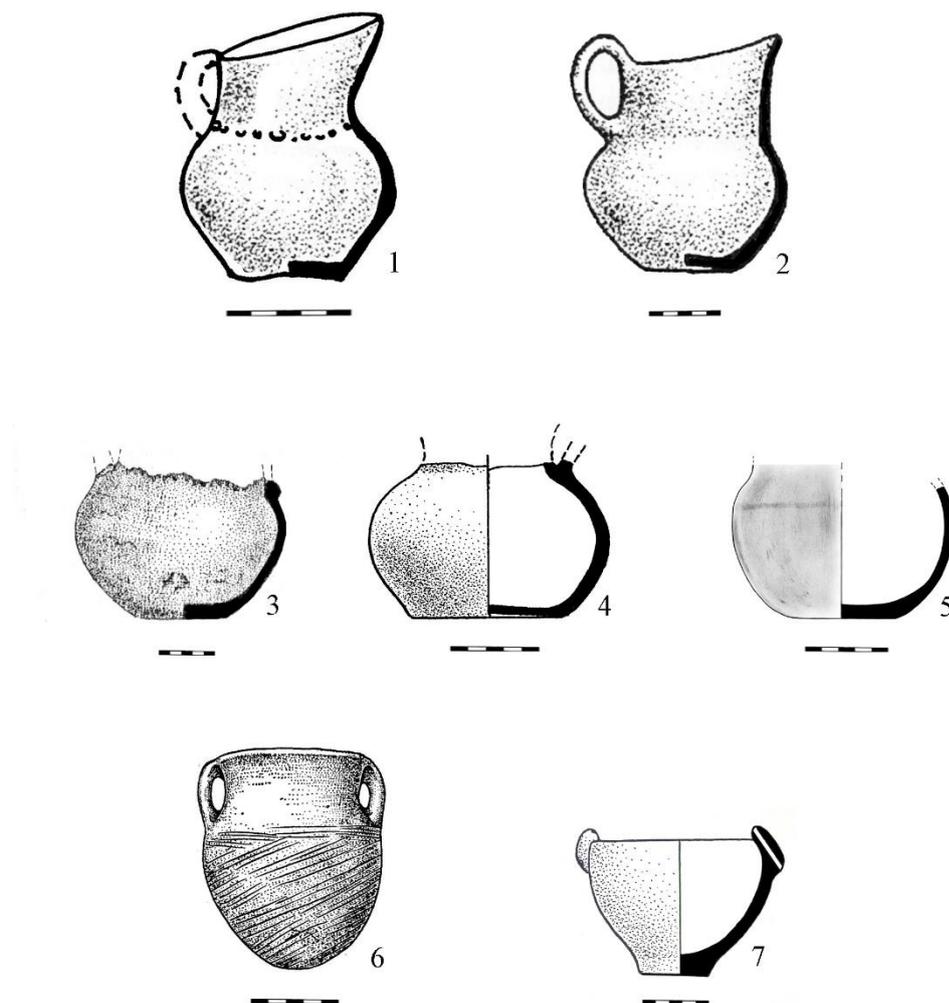


Fig. 11. Vessels from the Budzhak culture burials with features of the Zimnicea culture (1–5) and Glina– III–Schneckenberg culture (6–7):

1 – Kubey 21/5; 2 – Glyboke 2/11; 3 – Ursoaia 3/6; 4 – Dyviziya II 5/7; 5 – Vapnyarka 4/18; 6 – Kovalivka VIII 1/24; 7 – Vyshneve 17/36

(after: 1 – Bruyako, Ivanova, Subbotin 2015; 2 – Shmagliy, Chernyakov 1970; 3 – Chebotarenko, Cherniakov, Toshcev 1989; 4 – Subbotin, Sapozhnikov, Subbotin 2001–2002; 5 – Ivanova, Ostroverkhov, Saveliev 2012; 6 – Shaposhnikova, Fomenko, Dovzhenko 1986; 7 – Dvorianinov, Dzygovskiy, Subbotin 1985)

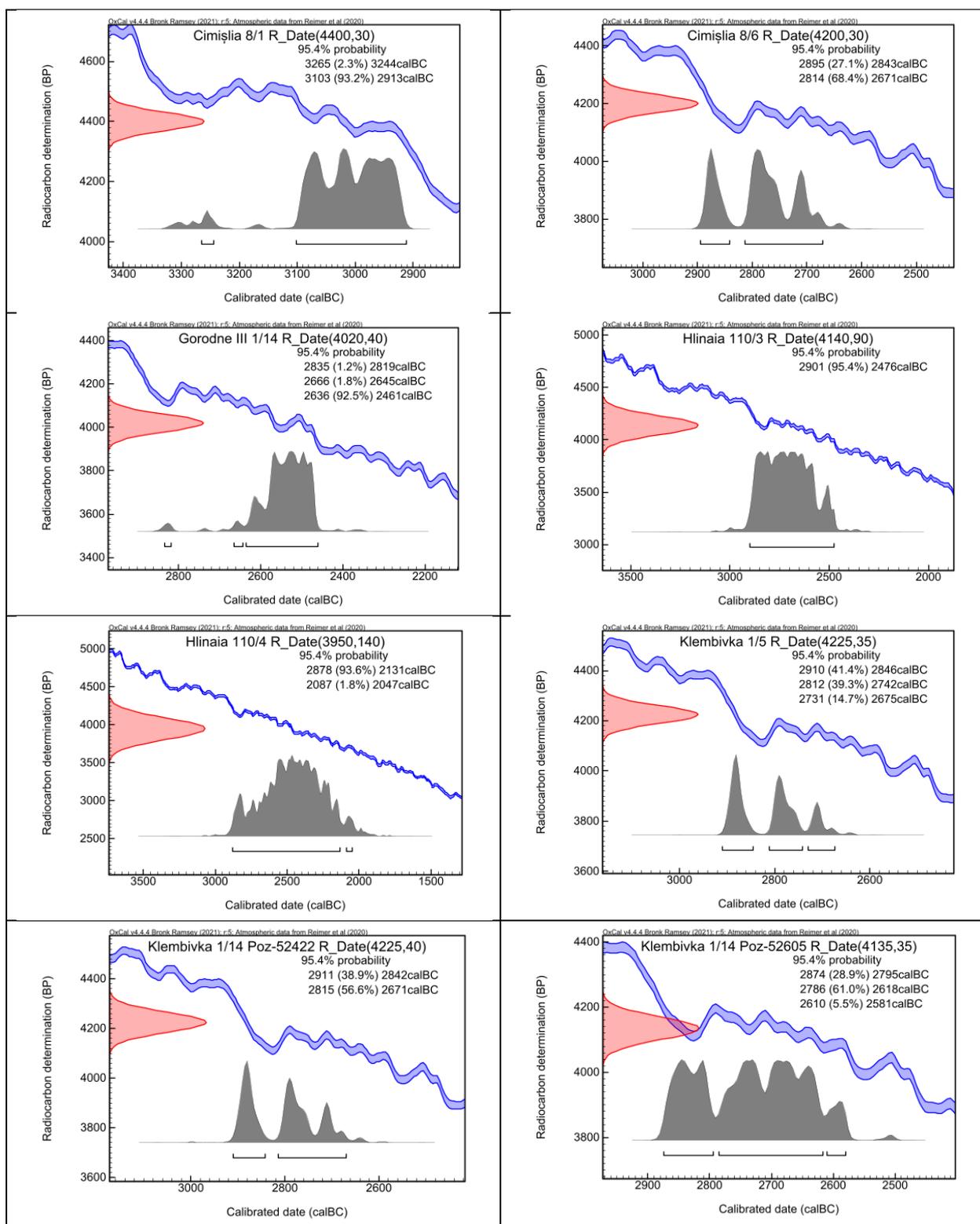


Plate 1. Calibrated dates of the burials from the tumulus of Northwest Pontic

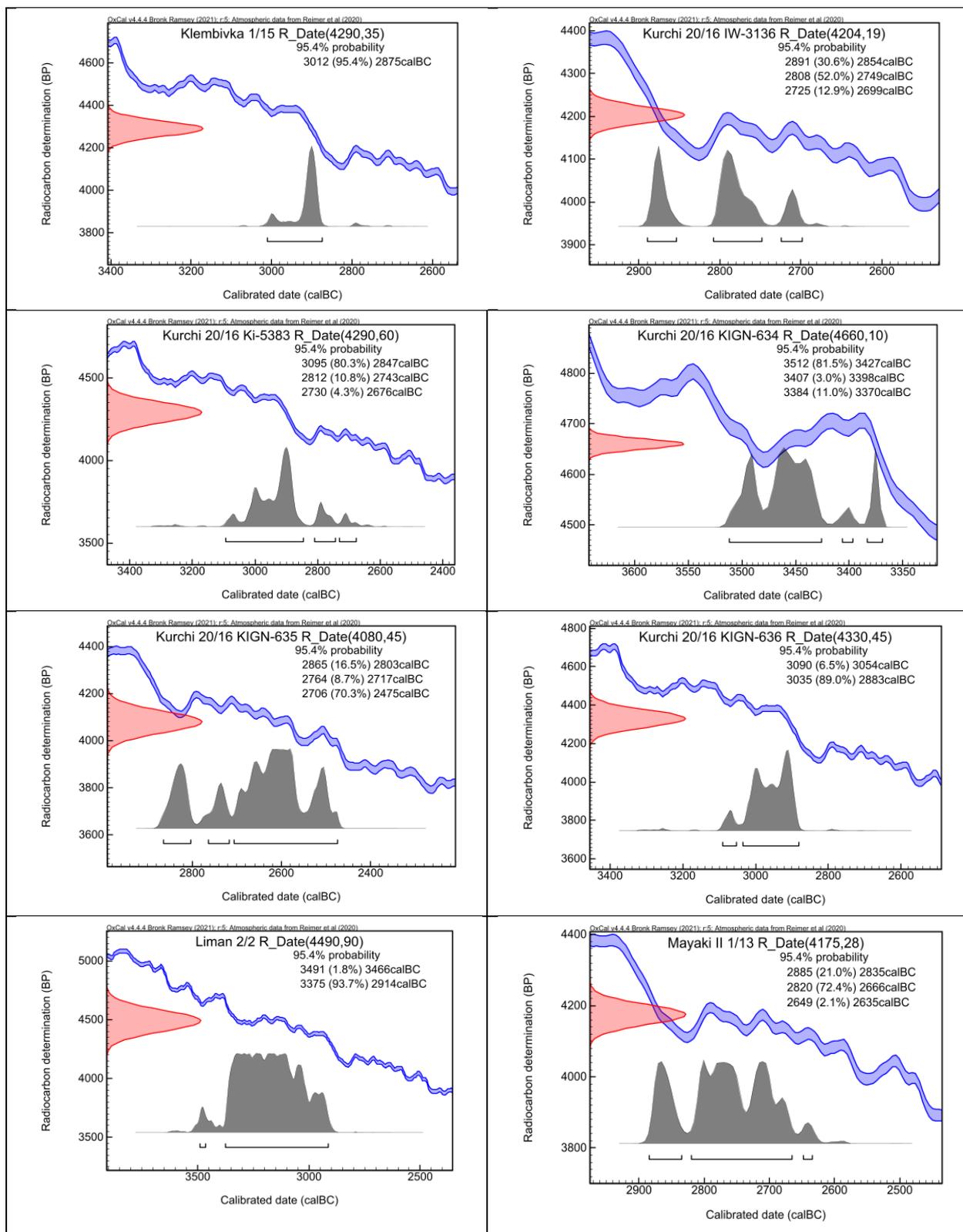


Plate 2. Calibrated dates of the burials from the tumulus of Northwest Pontic

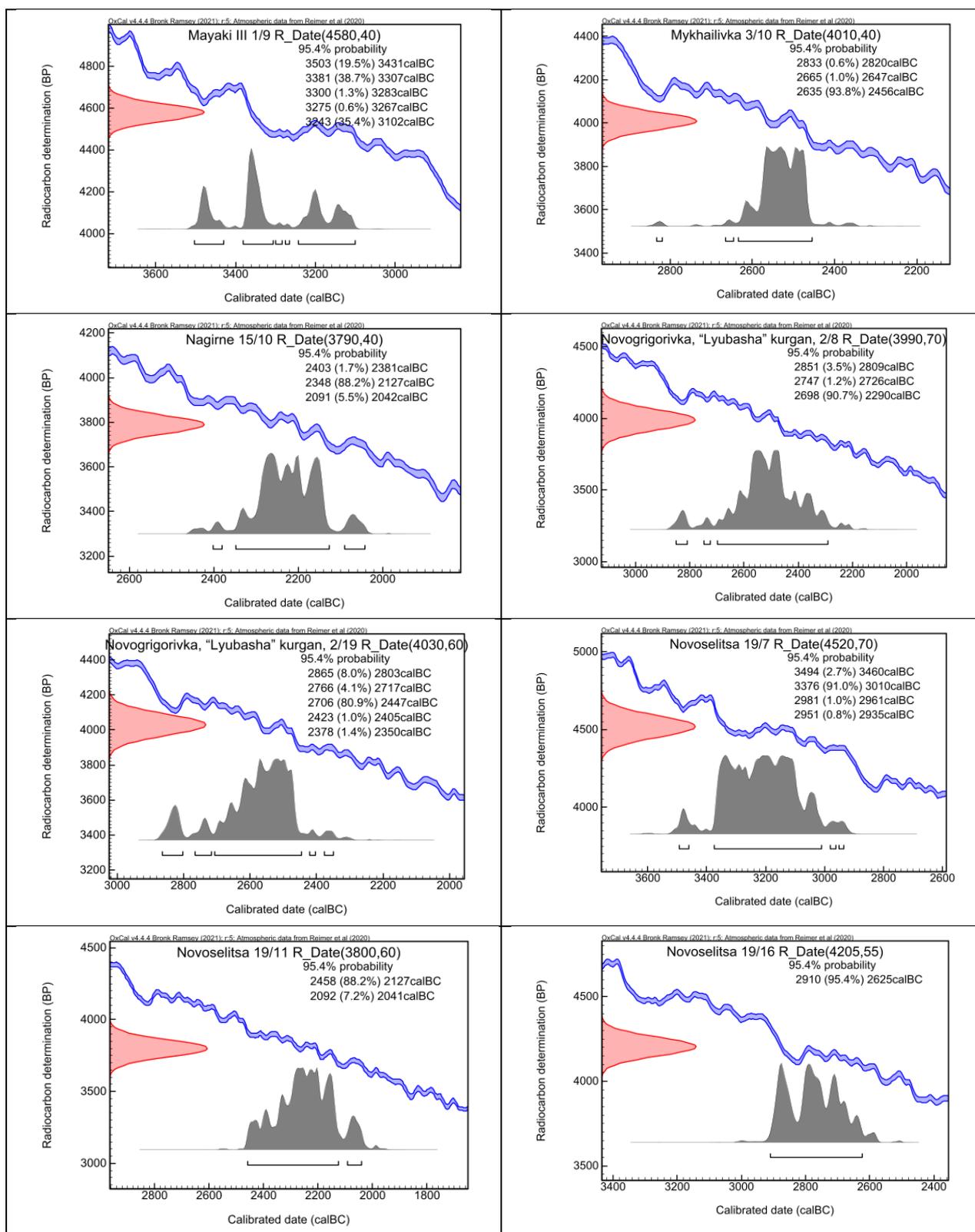


Plate 3. Calibrated dates of the burials from the tumulus of Northwest Pontic

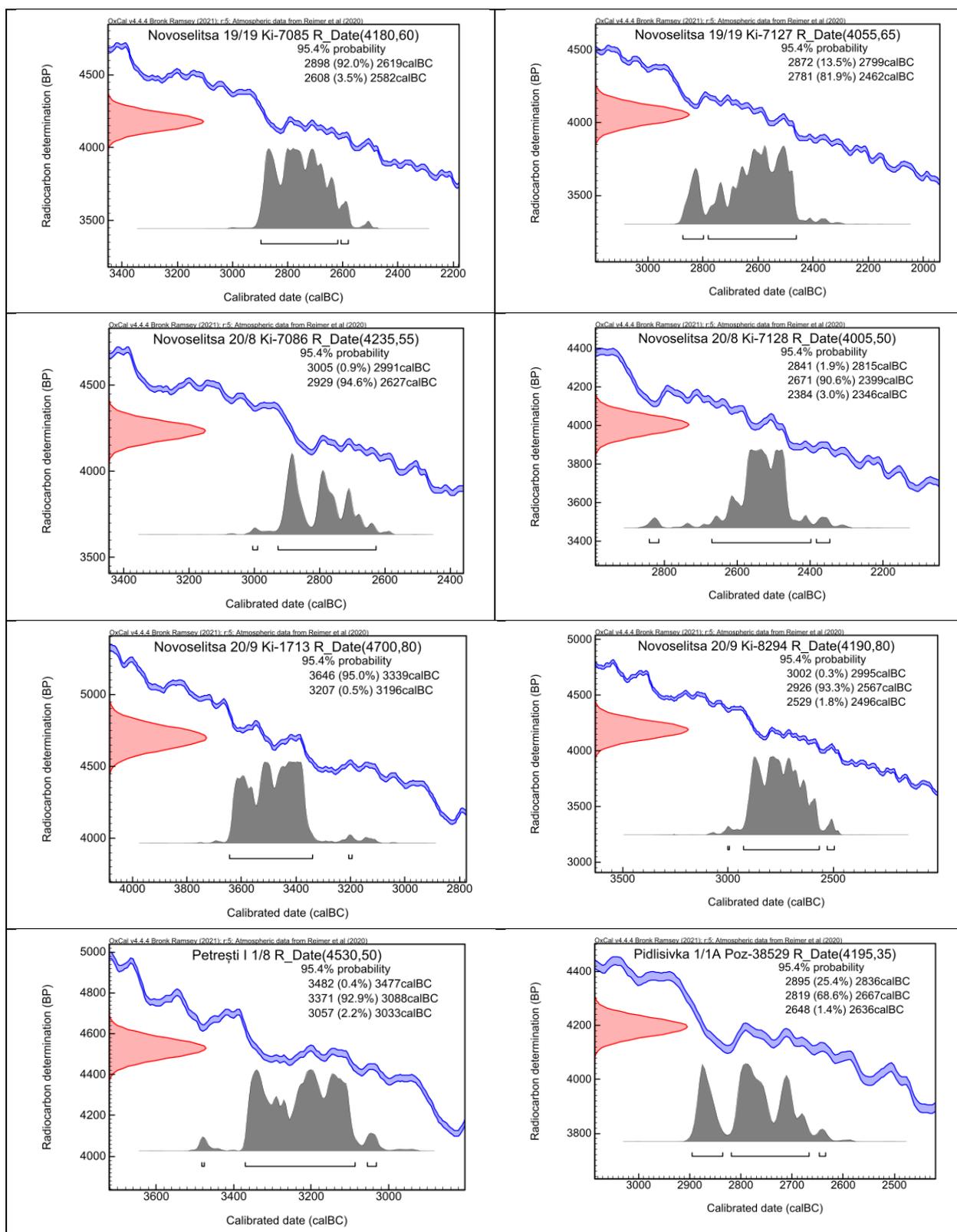


Plate 4. Calibrated dates of the burials from the tumulus of Northwest Pontic

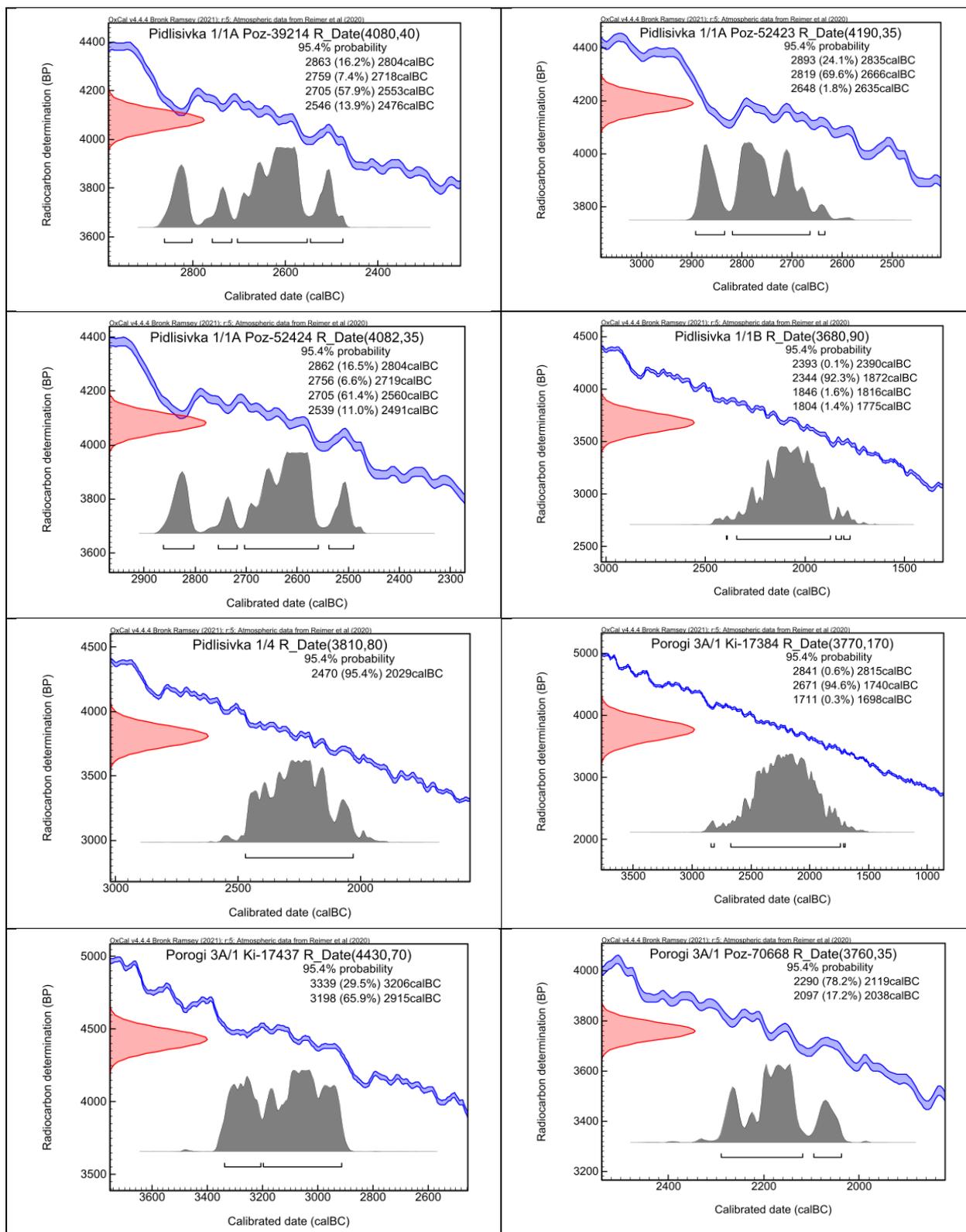


Plate 5. Calibrated dates of the burials from the tumulus of Northwest Pontic

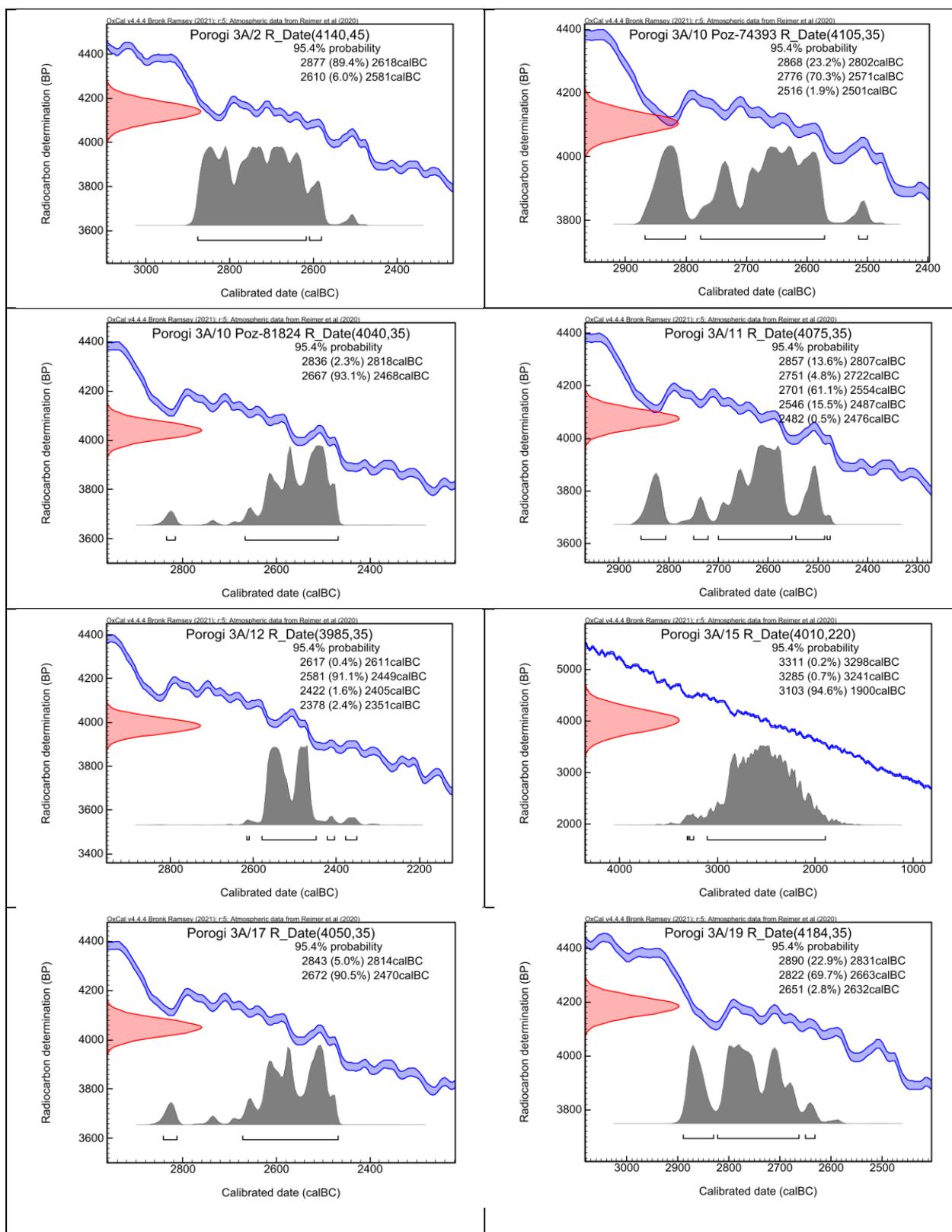


Plate 6. Calibrated dates of the burials from the tumulus of Northwest Pontic

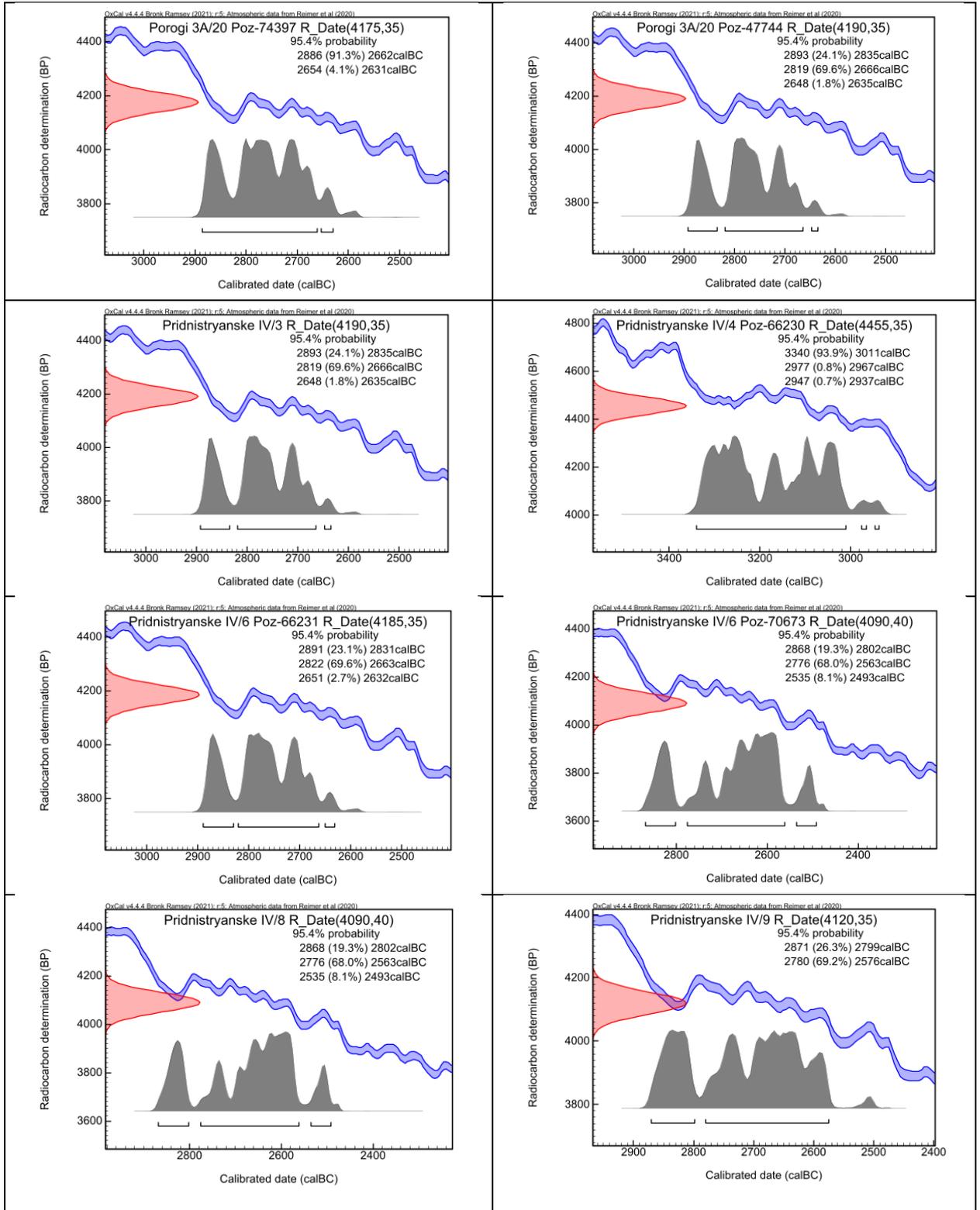


Plate 7. Calibrated dates of the burials from the tumulus of Northwest Pontic

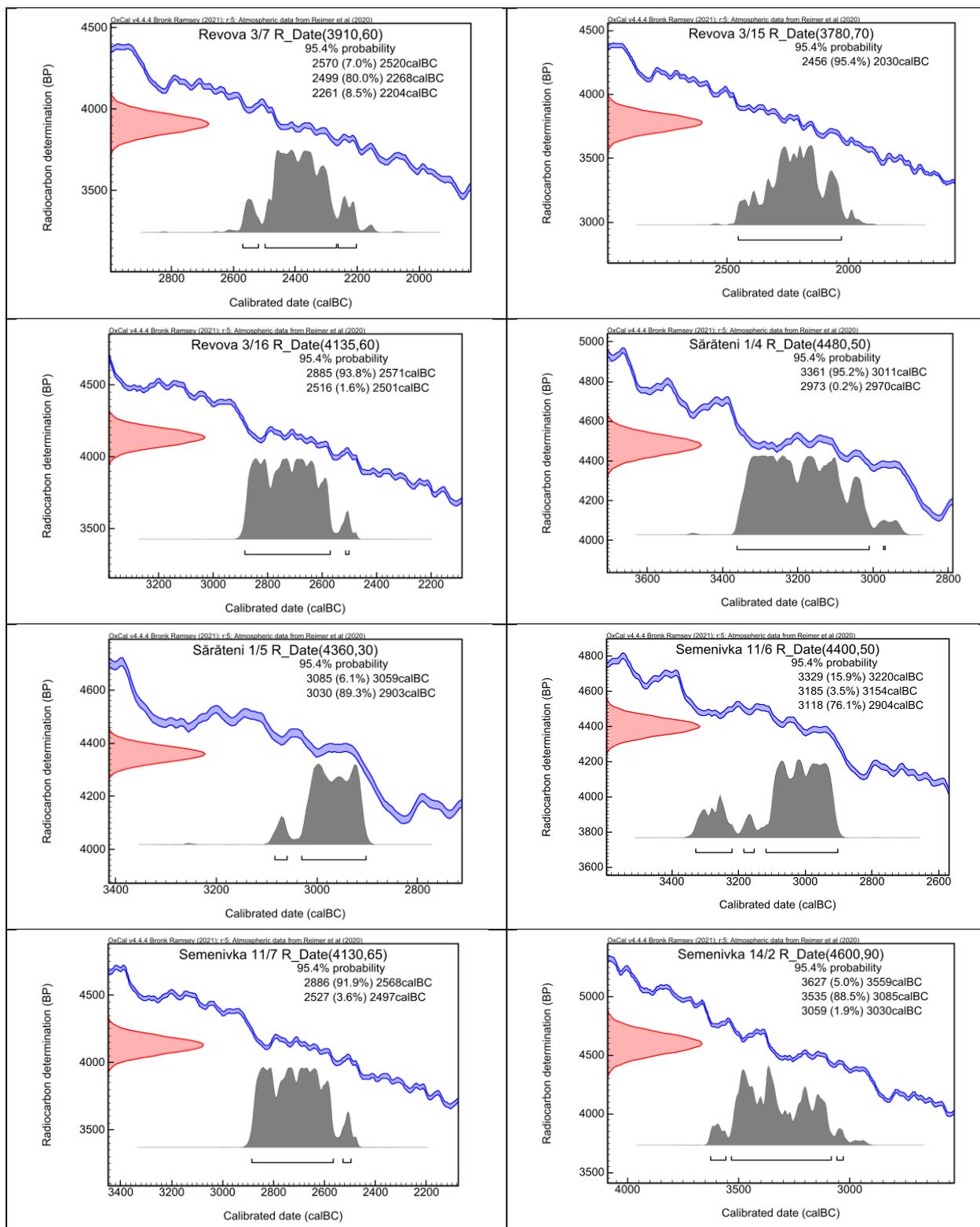


Plate 8. Calibrated dates of the burials from the tumulus of Northwest Pontic

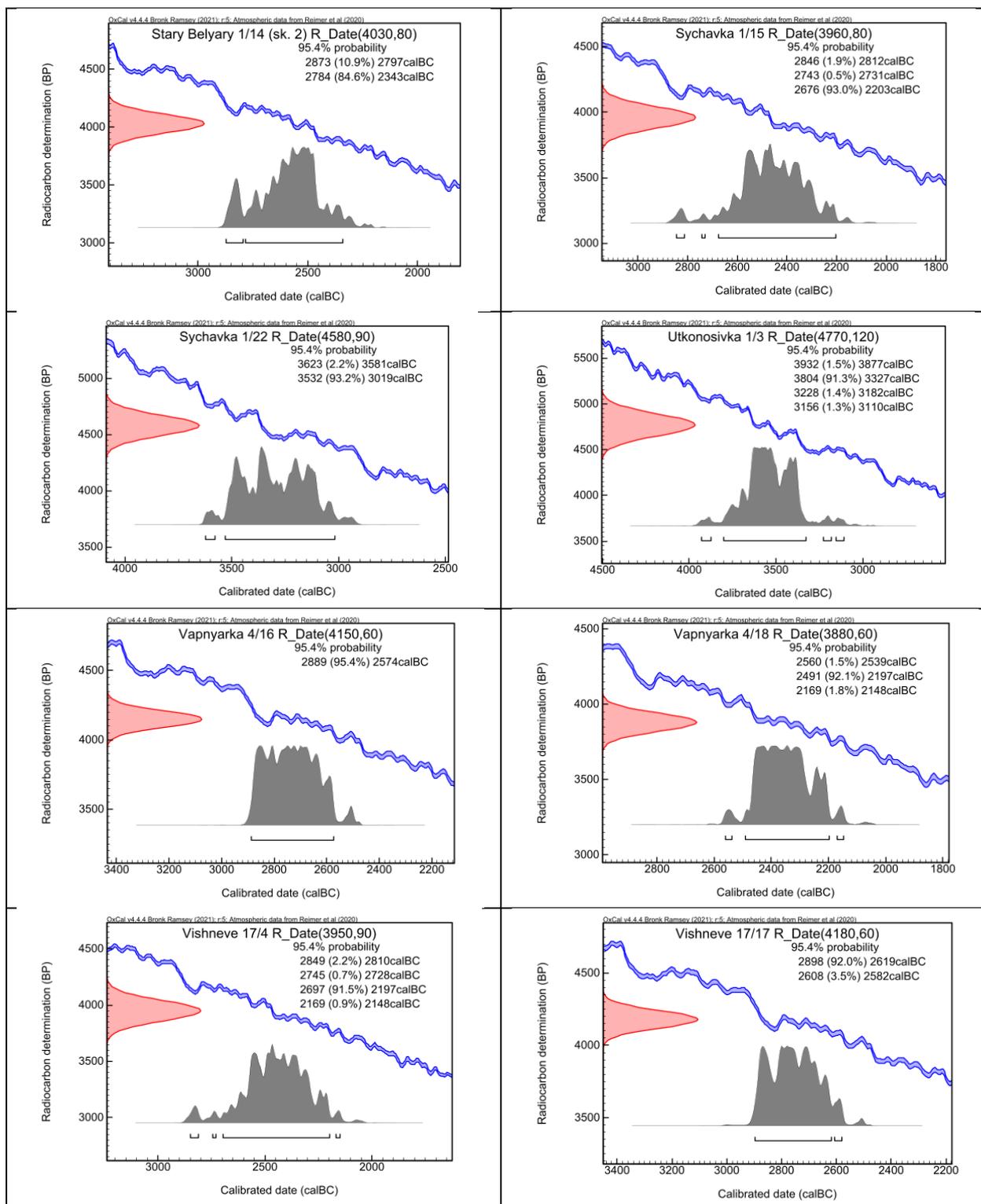


Plate 9. Calibrated dates of the burials from the tumulus of Northwest Pontic

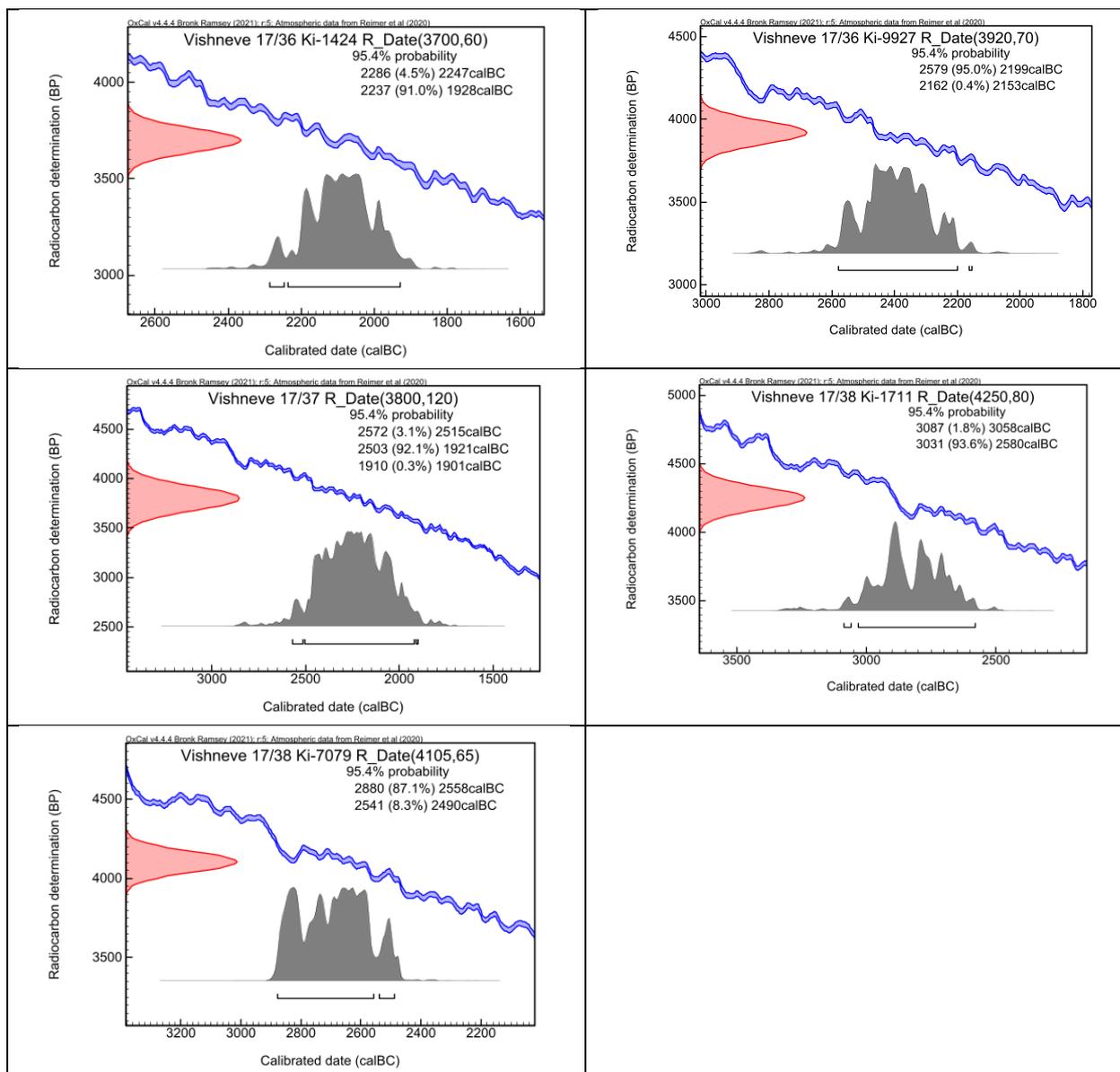
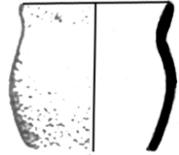
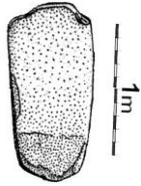
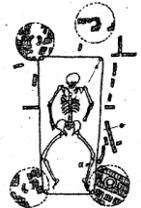
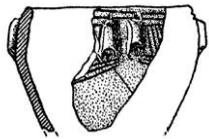


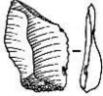
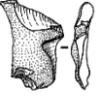
Plate 10. Calibrated dates of the burials from the tumulus of Northwest Pontic

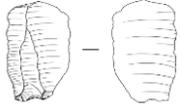
Table 1. Radiocarbon dates and inventory from Budzhak culture burials in the Northwestern Black Sea region

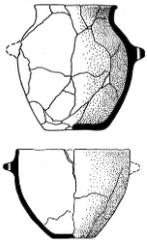
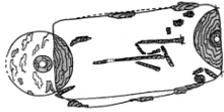
№	Location	Material	Position	Lab №	Date BP	Calibrated date BC 95% (OxCal 4.4.)	References	Inventory
1.	Cimişlia 8/1	human bone	1	Poz-121089	4400±30	3265-2913	Popovici, Ciobanu 2021	
2.	Cimişlia 8/6	human bone	1	Poz-121011	4200±30	2895-2671	Popovici, Ciobanu 2021	
3.	Gorodne III 1/14	wood	2	Le-2323	4020±40	2835-2461	Subbotin 1999	
4.	Hlinaia 110/3	human bone	3	Ki-17712	4140±90	2901-2476	Razumov et al. 2013	
5.	Hlinaia 110/4	human bone	4	Ki-17713	3950±140	2572-2301	Razumov et al. 2013	 flint arrows
6.	Klembivka 1/5	human bone	5	Poz-70670	4225 ±35	2909-2675	Goslar et al. 2015	
7.	Klembivka 1/14	wood human bone	5	Poz-52422 Poz-52605	4260±40 4135±35	3009-2696 2874-2581	Goslar et al. 2015	
8.	Klembivka 1/15	human bone	1	Poz-77470	4290±35	3012-2875	Goslar et al. 2015	

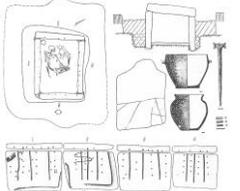
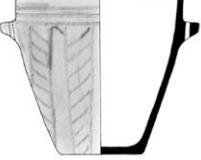
9.	Kurchi 20/16	wood	1	IW-3136 Ki-5383 KIGN-634 KIGN-635 KIGN-636	4204±19 4290±60 4660±10 4080±45 4330±45	2891-2699 3095-2676 3512-3370 2865-2475 3090-2883	Ivanova 2021	 silver pendants wooden wheels
10.	Liman 2/2	wood	1+child	Ki-2394	4490±90	3491-2914	Subbotin 1999	
11.	Mayaki II 1/13	human bone	1	OxA-22955	4175±28	2886-2635	Петренко, Кайзер 2011	
12.	Mayaki III 1/9	wood	1	Le-2328	4580±40	3503-3102	Subbotin 1999	
13.	Mykhailivka 3/10	wood	1	Le-2327	4010±40	2833-2456	Rassamakin, Nikolova 2008	
14.	Nagirne 15/10	?	1	Le-2322	3790±40	2403-2042	Subbotin 1999	
15.	Novogrigorivka, “Lyubasha” kurgan, 2/8	human bone	1	Ki-11177	3990±70	2851-2290	Ivanova 2021	
16.	Novogrigorivka “Lyubasha” kurgan 2/19	human bone	“Packet”	Ki-11249	4030±60	2865-2350	Ivanova 2021	

17.	Novoselitsa 19/7	wood	1	Ki-1219	4520±70	3494-2935	Subbotin 1999	 <p>anthropomorphic stele</p>
18.	Novoselitsa 19/11	wood	1	Ki-1220	3800±60	2458-2041	Subbotin 1999	 <p>silver pendants</p>
19.	Novoselitsa 19/16	wood	1	Ki-7080	4205±55	2910-2625	Rassamakin, Nikolova 2008	 <p>wooden wheels</p>
20.	Novoselitsa 19/19	wood „	1	Ki-7085 Ki-7127	4180±60 4055±65	2898-2582 2872-2462	Rassamakin, Nikolova 2008	
21.	Novoselitsa 20/8	wood „	3	Ki-7086 Ki-7128	4235±55 4005±50	3005-2627 2841-2346	Rassamakin, Nikolova 2008	
22.	Novoselitsa 20/9	wood	1	Ki-1713 Ki-8294	4700±80 4190±80	3646-3196 3002-2496	Subbotin 1999	

23.	Petrești I 1/8	wood	1	Lu-2472	4530±50	3482-3033	Rassamakin, Nikolova 2008	 silver pendants
24.	Pidlisivka 1/1A	human bone ” wood ”	4	Poz-38529 Poz-39214 Poz-52423 Poz-52424	4195±35 4080±40 4190±35 4082±35	2895-2636 2863-2467 2893-2635 2862-2491	Goslar et al. 2015	
25.	Pidlisivka 1/1B	human bone	1	Ki-16674	3680 ± 90	2393-1775	Goslar et al. 2015	
26.	Pidlisivka 1/4	human bone	1	Ki-16675	3810±80	2470-2029	Goslar et al. 2015	
27.	Porogi 3A/1	human bone ” ”	5	Ki-17384 Ki-17437 Poz-70668	3770±170 4430±70 3760±35	2841-1698 3339-2915 2290-2038	Goslar et al. 2015	 flint flake
28.	Porogi 3A/2	human bone	unknown	Poz-74392	4140±35	2877-2581	Goslar et al. 2015	
29.	Porogi 3A/10	human bone	2	Poz-74393 Poz-81824	4105±35 4040±35	2868-2501 2836-2468	Goslar et al. 2015	
30.	Porogi 3A/11	human bone	1	Poz-47741	4075±35	2857-2476	Goslar et al. 2015	 flint arrows and flake
31.	Porogi 3A/12	human bone	3	Poz-47742	3985±35	2617-2351	Goslar et al. 2015	 flint flake

32.	Porogi 3A/15	human bone	3	Ki-17386	4010±220	3311-1900	Goslar et al. 2015	 flint blade
33.	Porogi 3A/17	human bone	5	Poz-47743	4050±35	2843-3470	Goslar et al. 2015	 flint flake
34.	Porogi 3A/19	human bone	1	Poz-70665	4184±35	2890-2632	Goslar et al. 2015	
35.	Porogi 3A/20	human bone	4+5	Poz-74397 Poz-47744	4175±35 4190±35	2886-2635 2893-2635	Goslar et al. 2015	 flint flake
36.	Pridnistrianske IV/3	human bone	1	Poz-66228	4090±35	2893-2635	Goslar et al. 2015	
37.	Pridnistrianske IV/4	wood human bone	1	Poz-66230 Poz-66229	4455±35 4380±35	3340-2937 3098-2906	Goslar et al. 2015	 flint arrow
38.	Pridnistrianske IV/6	wood human bone	1	Poz-66231 Poz-70673	4185±35 4090±40	2891-2632 2868-2493	Goslar et al. 2015	
39.	Pridnistrianske IV/8	human bone	1	Poz-66232	4090±40	2868-2493	Goslar et al. 2015	 flint blade

40.	Pridnistryanske IV/9	human bone	4	Poz-66233	4120±35	2871-2576	Goslar et al. 2015	
41.	Revova 3/7	human bone	5	Ki-11058	3910±60	2570-2204	Ivanova 2021	
42.	Revova 3/15	human bone	1	Ki-11060	3780±70	2456-2030	Ivanova 2021	
43.	Revova 3/16	human bone	1	Ki-11059	4135±60	2885-2501	Ivanova 2021	 anthropomorphic stele
44.	Sărăteni 1/4	wood	1	Lu-2476	4480±50	3361-2970	Rassamakin, Nikolova 2008	 wooden wheels
45.	Sărăteni 1/5	wood	1	Lu-2459	4360±30	3085-2903	Rassamakin, Nikolova 2008	
46.	Semenivka 11/6	wood	3	Ki-1758	4400±50	3329-2904	Subbotin 1999	
47.	Semenivka 11/7	wood	3	Ki-7088	4130 ± 65	2886-2497	Subbotin 1999	
48.	Semenivka 14/2	wood	1	Ki-2126	4600 ± 90	3627-3030	Subbotin 1999	

								anthropomorphic steles
49.	Stary Belyary 1/14 (sk. 2)	human bone	5+ “packet”	Ki-11209	4030±80	2873-2343	Ivanova 2021	 <p>Cist, with painting on slabs, anthropomorphic stele, 2 vessels, copper tubes, bone pin</p>
50.	Sychavka 1/15	human bone	1	Ki-16610	3960±80	2846-2203	Ivanova 2021	
51.	Sychavka 1/22	human bone	3	Ki-16612	4580±90	3650-3000 3623-3019	Ivanova 2021	
52.	Utkonosivka 1/3	wood	1	Ki-660	4770±120	3932-3110	Subbotin 1999	
53.	Vapnyarka 4/16	human bone	2	Ki-15014	4150±60	2889-2574	Ivanova 2021	
54.	Vapnyarka 4/18	human bone	3	Ki-15015	3880±60	2560-2148	Ivanova 2021	

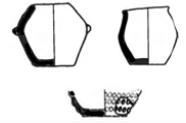
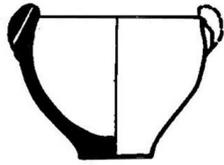
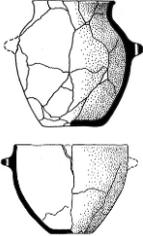
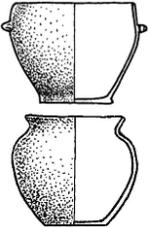
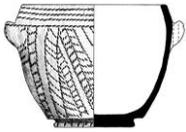
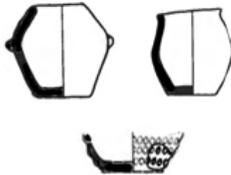
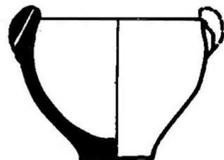
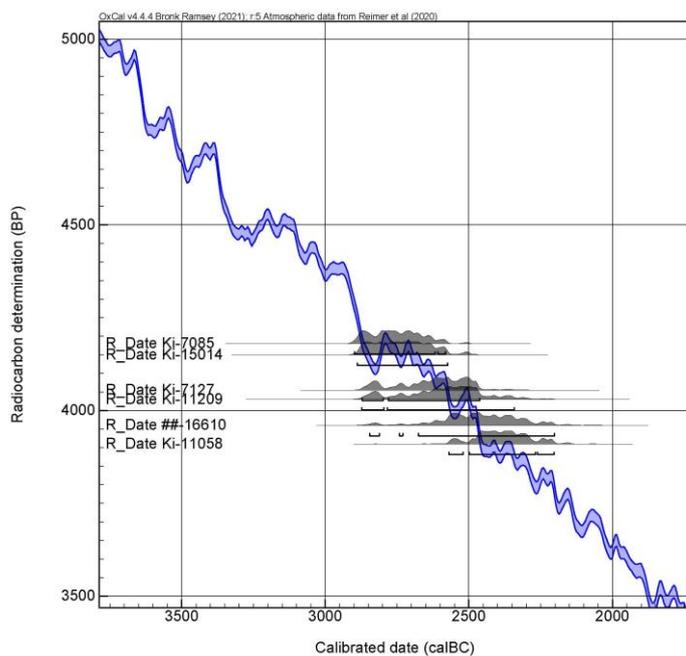
55.	Vishneve 17/4	wood	1	Ki-1217	3950±90	2849-2148	Subbotin 1999	
56.	Vishneve 17/17	wood	1	Ki-7078	4180±60	2898-2582	Rassamakin, Nikolova 2008	
57.	Vishneve 17/36	wood „	3	Ki-1424 Ki-9927	3700±60 3920±70	2286-1928 2579-2153	Subbotin 1999 Rassamakin, Nikolova 2008	
58.	Vishneve 17/37	wood	5	Ki-1439	3800±120	2572-1901	Subbotin 1999	 vessel fragment
59.	Vishneve 17/38	wood „	1	Ki-1711 Ki-7079	4250±80 4105±65	3087-2580 2880-2490	Subbotin 1999 Rassamakin, Nikolova 2008	

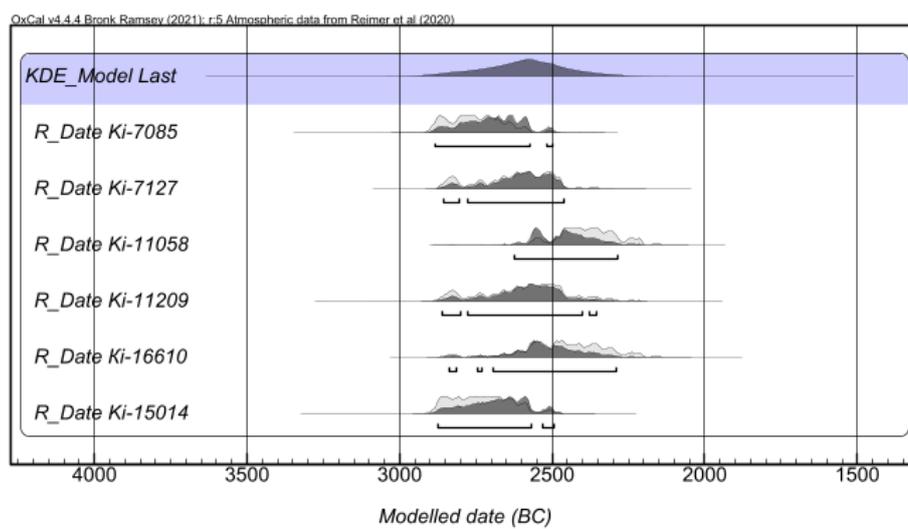
Table 2. Radiocarbon dates of Budzhak burials with vessels

№	Location	Material.	Position	Lab №	Date BP	Calibrated date BC 95% (OxCal 4.4.)	References	vessels
1.	Hlinaia 110/3	human bone	3	Ki-17712	4140±90	2901-2476	Razumov et al. 2013	
2.	Nagirne 15/10	?	1	Le-2322	3790±40	2403-2042	Subbotin 1999	
3.	Novoselitsa 19/19	wood wood	1	Ki-7085 Ki-7127	4180±60 4055±65	2898-2582 2872-2462	Rassamakin, Nikolova 2008	
4.	Revova 3/7	human bone	5	Ki-11058	3910±60	2570-2204	Ivanova 2021	
5.	Stary Belyary 1/14 (sk. 2)	human bone	5+ “packet”	Ki-11209	4030±80	2873-2343	Ivanova 2021	

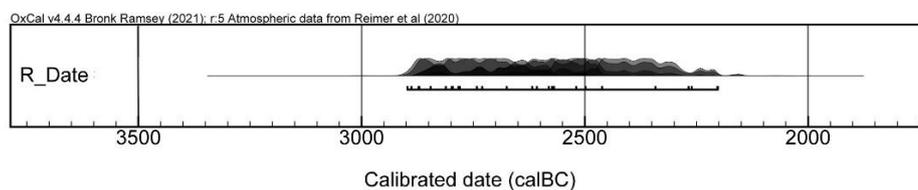
6.	Sychavka 1/15	human bone	1	Ki-16610	3960±80	2846-2203	Ivanova 2021	
7.	Vapnyarka 4/16	human bone	2	Ki-15014	4150±60	2889-2574	Ivanova 2021	
8.	Vapnyarka 4/18	human bone	3	Ki-15015	3880±60	2560-2148	Ivanova 2021	
9.	Vishneve 17/37	wood	5	Ki-1439	3800±120	2572-1901	Subbotin 1999	 vessel fragment
10.	Vishneve 17/4	wood	1	Ki-1217	3950±90	2849-2148	Subbotin 1999	
11.	Vishneve 17/36	wood wood	3	Ki-1424 Ki-9927	3700±60 3920±70	2286-1928 2579-2153	Subbotin 1999 Rassamakin, Nikolova 2008	



1



2



3

Table 3. Calibrated date of Budzhak jars:

1 – Calibrating multiple dates; 2 – KDE date model; 3 – KDE sum date model

CONCLUSION

Based on a systematic approach, the classifiable and statistical characteristics of ceramics are the most acceptable for the integrated consideration of ware made without a potter's wheel. The handmade ware of Budzhak culture, even from a single barrow group, has certain individual differences. Using a systematic method enables us to approach the comparative characteristics of ceramics based on objective criteria, and based, first of all, on the creation of the structural scheme of the vessel. Foreign cultural influences are most often manifested in the shape and ornamentation of ware. Therefore, the analysis of ceramic materials becomes important when considering the problems associated with the reconstruction of cultural and historical processes. The next stage in the study of ceramics may be the comprehensive approach, taking into consideration barrow stratigraphy and absolute dating, revealing imports and imitations, which will allow clarification of the chronology and periodisation of Budzhak culture. The comparative analysis of a pottery complex executed based on a comparative-typological method of synchronous cultures will provide the opportunity to define potential communication among the people of Budzhak culture. These problems make it important to find a unified classification and typology of pottery.

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CATALOG
OF
YAMNA/BUDZHAK CULTURE
POTTERY

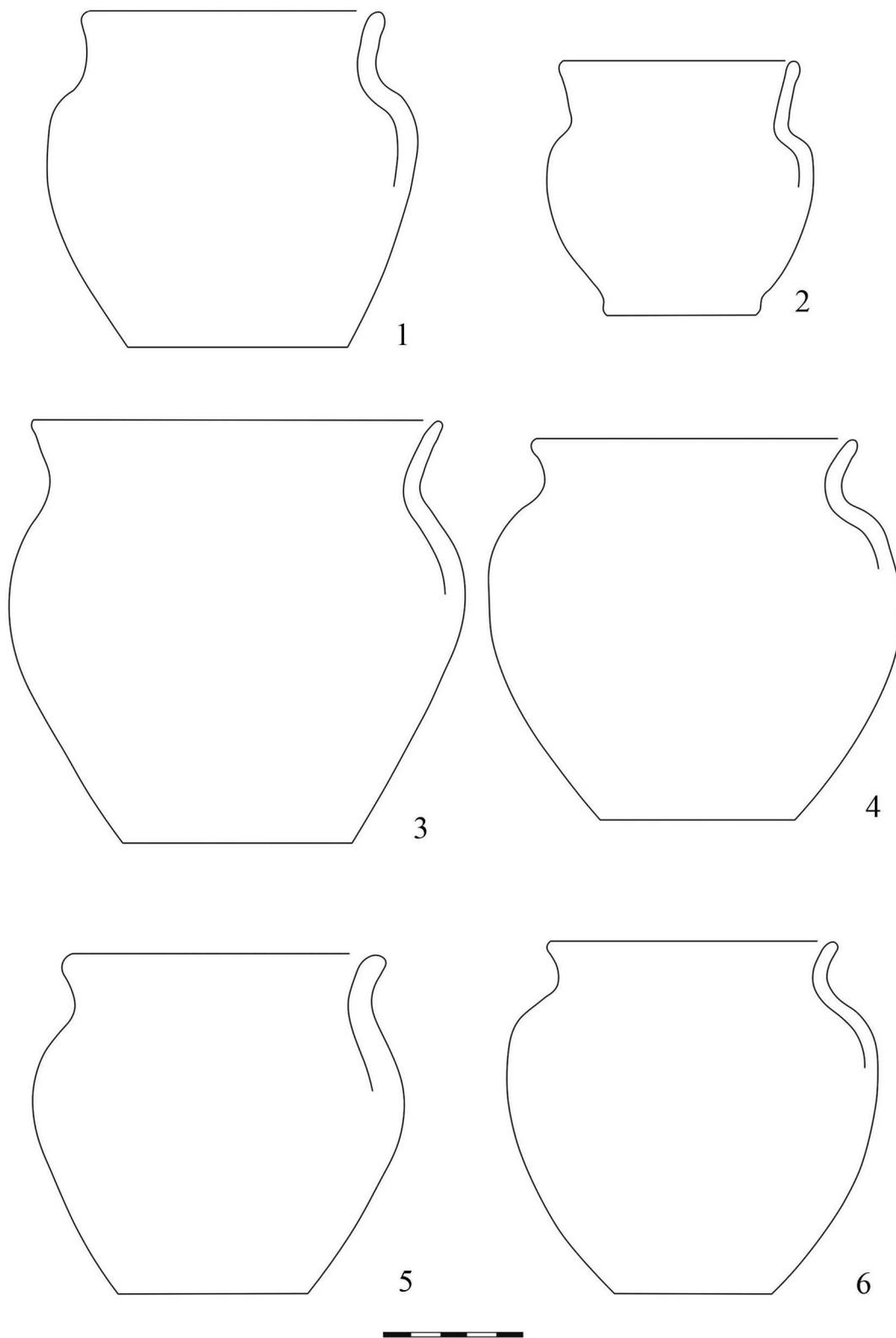


Fig. 1. Pots A I type

1 – Sărăteni 2/1; 2 – Taraclia II 18/10; 3 – Mayaki II 1/15; 4 – Stari Biliary
1/14; 5 – Ocnîța barrow 5; 6 – Brăviceni 2/3

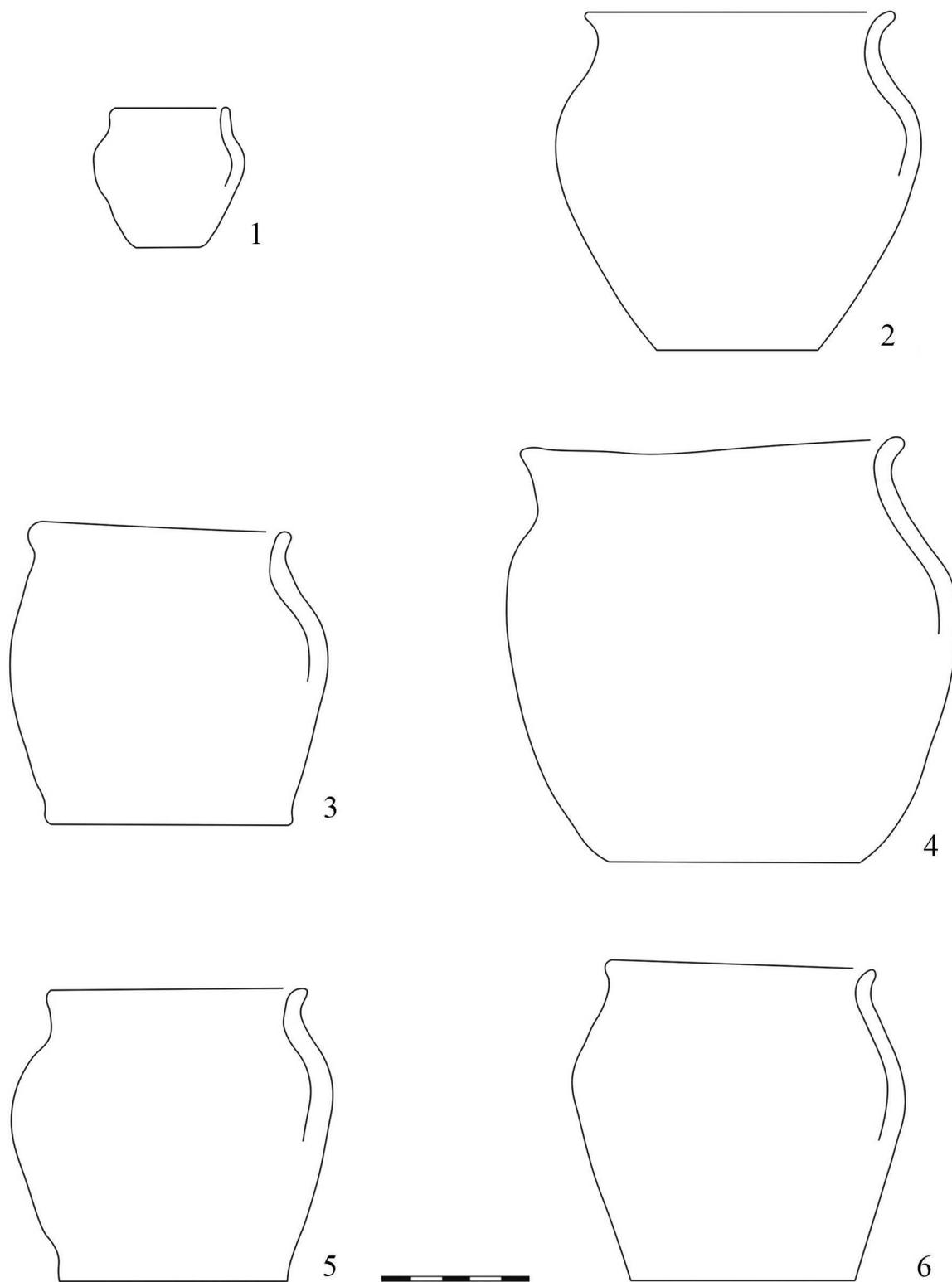


Fig. 2. Pots A I type

1 – Olănești 8/7; 2 – Purcari 3/9; 3 – Plavni 3/9; 4 – Brăviceni 23/3; 5 –
Yasski 6/16; 6 – Parcani, barrow 85

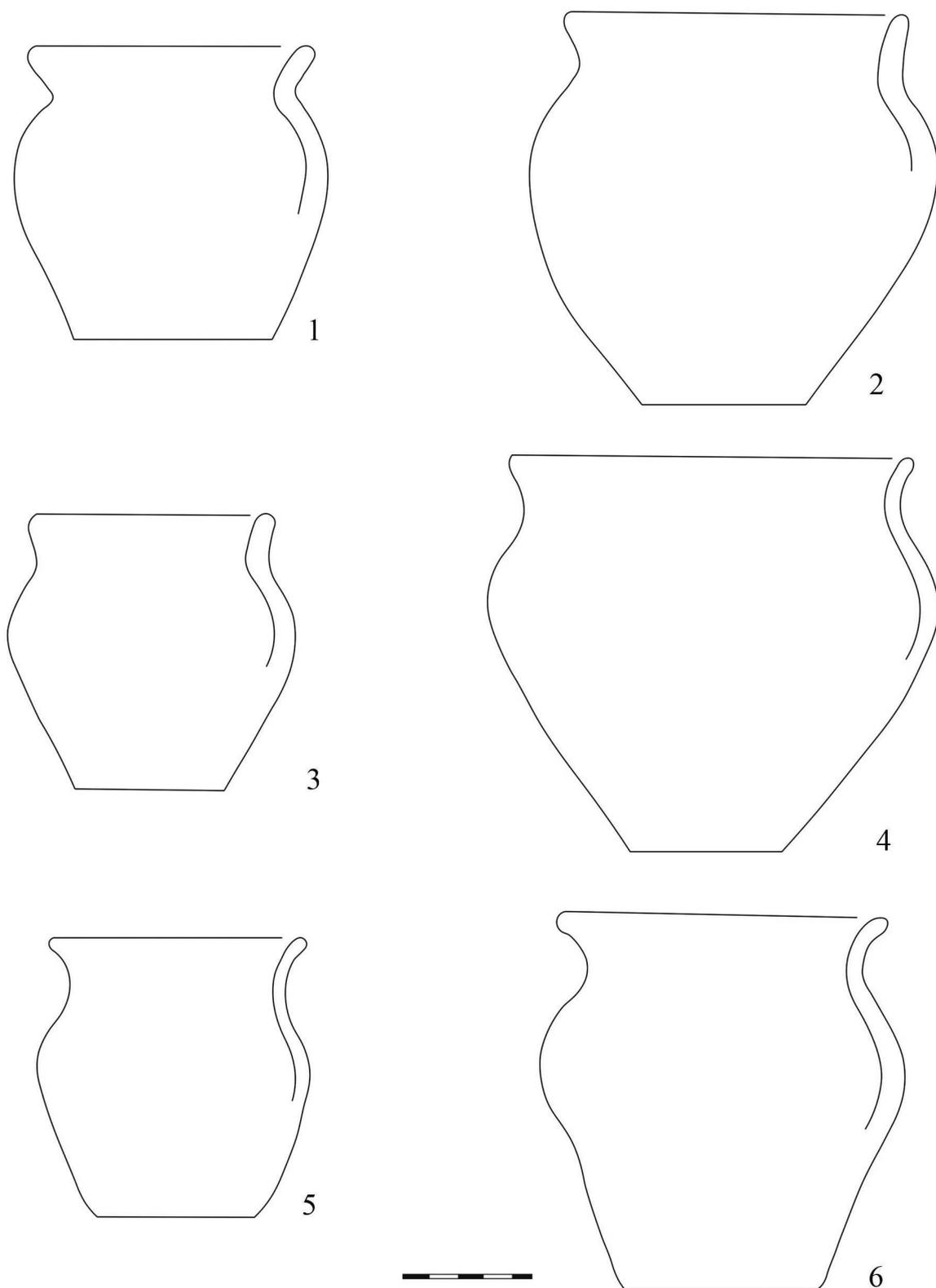


Fig. 3. Pots A I type

1 – Semenivka 19/5; 2 – Novoselytsya 3/24; 3 – Grygorivka 1/3; 4 – Tîrnauca II
2/12; 5 – Chirileni 3/22; 6 – Pidlisivka 1/10

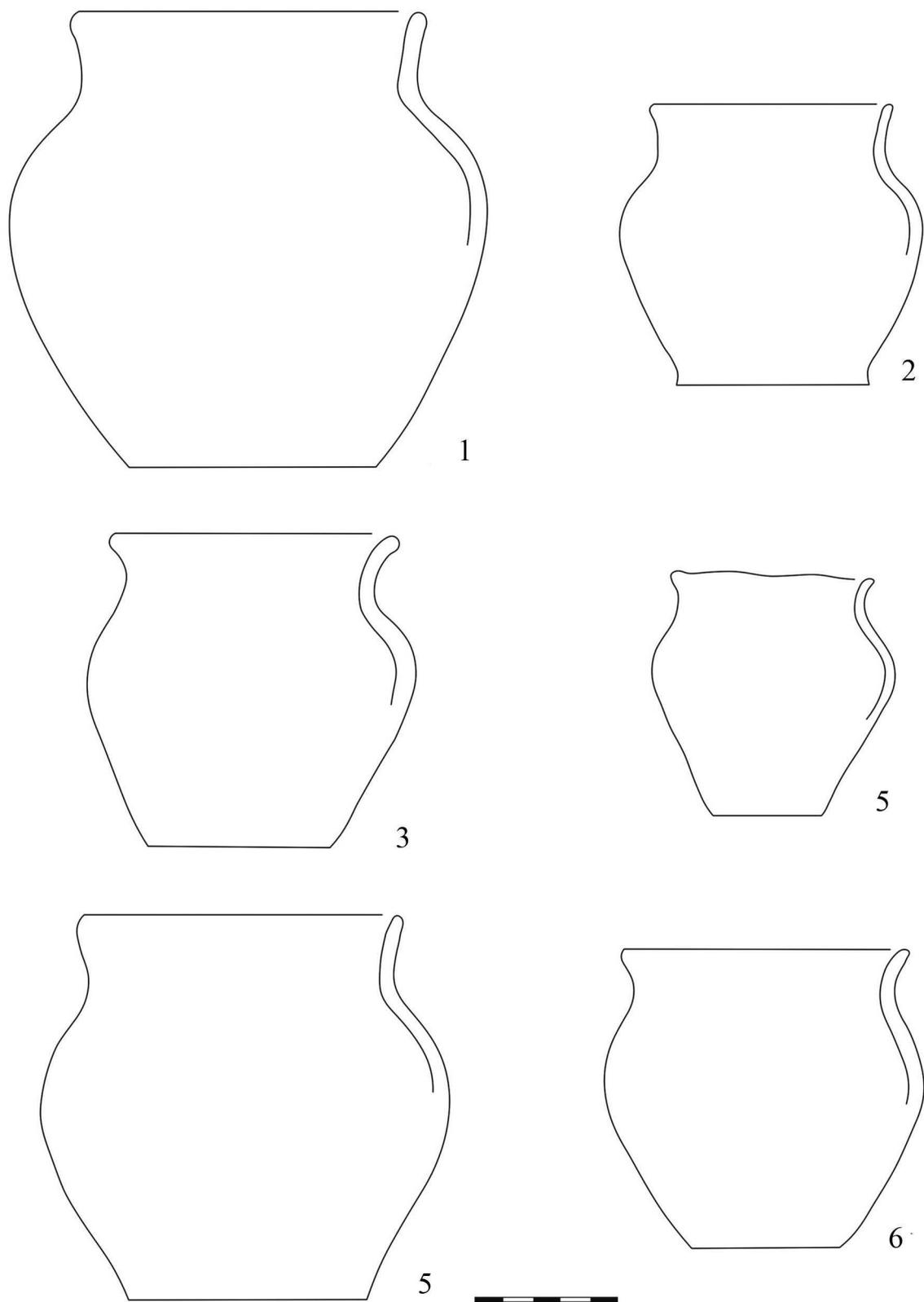


Fig. 4. Pots A I type

1 – Răscăeții Noi 1/2; 2 – Găvănoasa 4/4; 3 – Shcerbanka 1/7; 4 – Mocra 1/12;
5 – Talmaza 3/9; 6 – Brăviceni 16/4

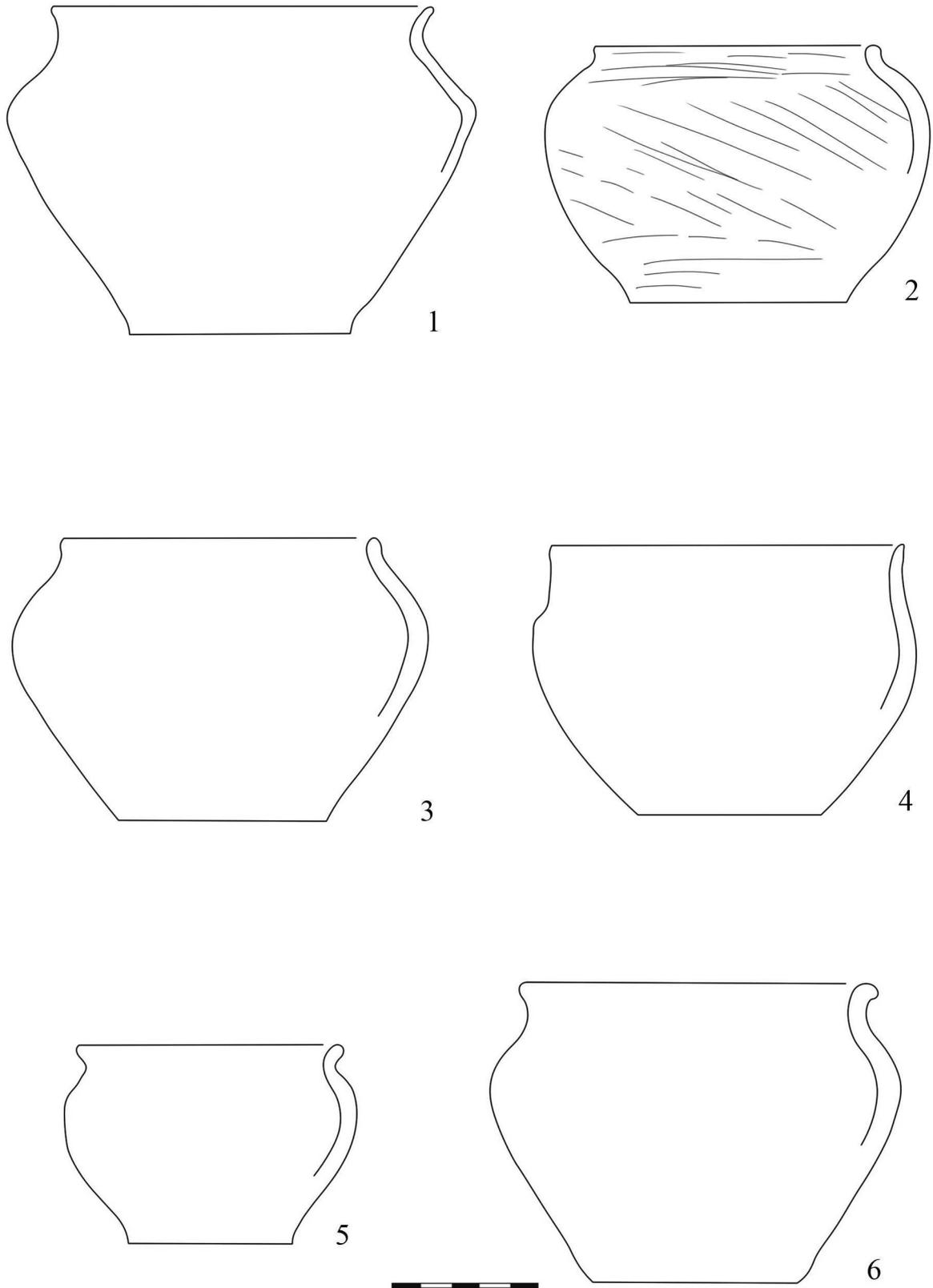


Fig. 5. Pots A I type

1 – Crasnoe 9/5; 2 – Pererîta 1/2; 3, 4 – Gura Bîcului 8/6; 5 – Efymivka 3/10;
6 – Biliaivka 2 /pit 5

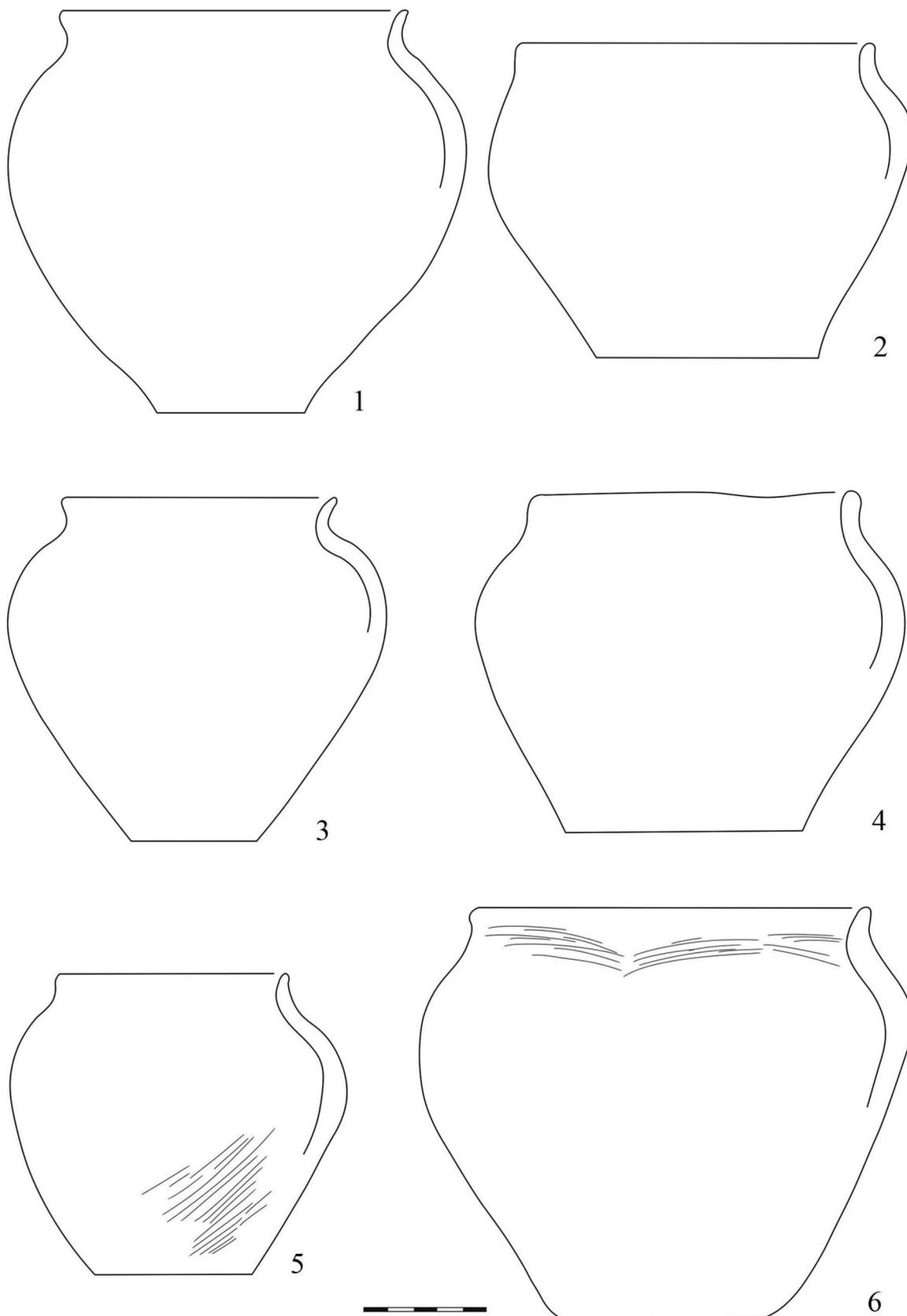


Fig. 6. Pots A I type

1 – Novogradkivka 1/10; 2 – Kubey 21/14; 3 – Shevchenkove 1/2; 4 –
Semenivka 19/9; 5 – Baranove 1/9; 6 – Dubinove 1/13

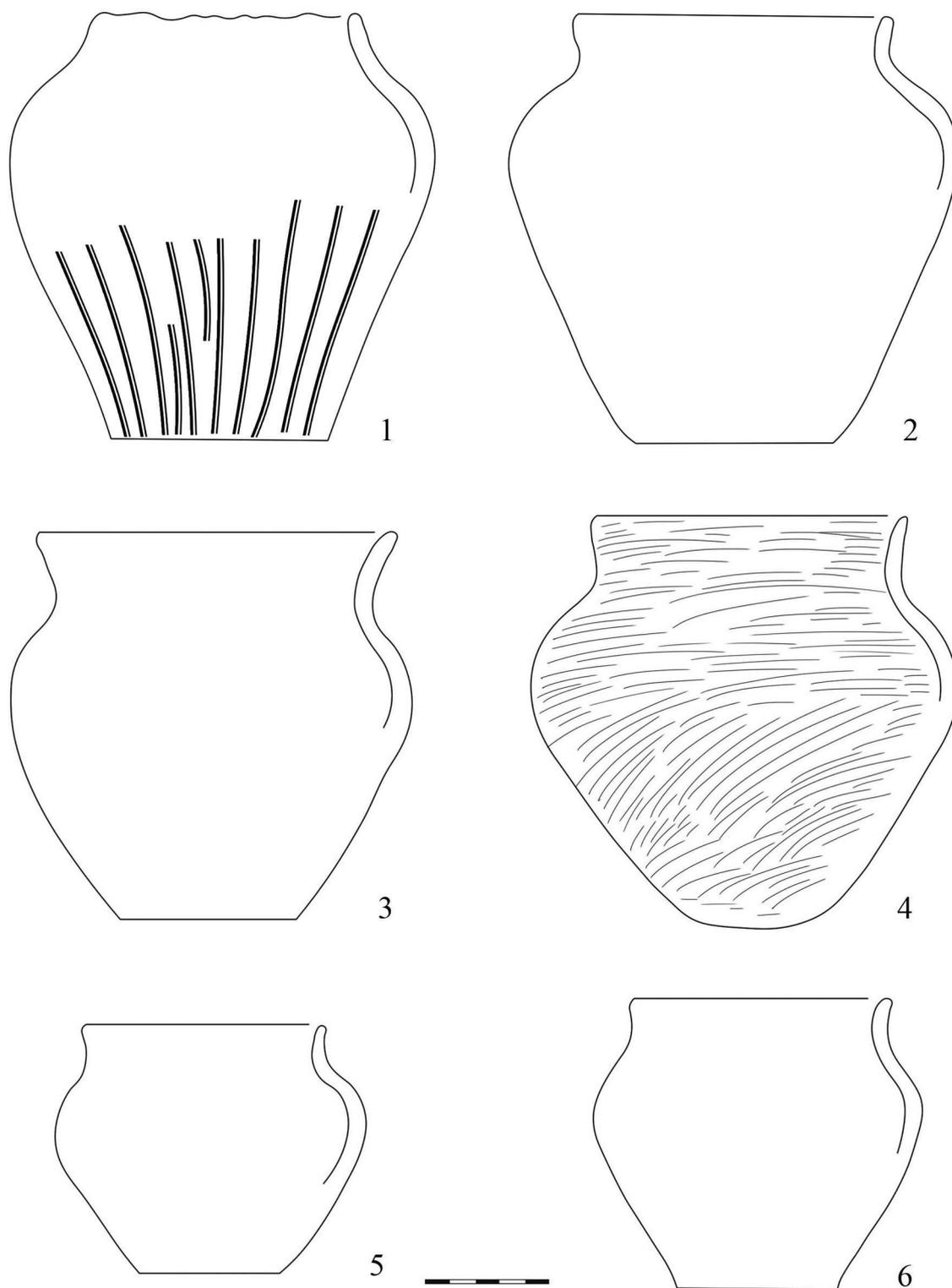


Fig. 7. Pots A I type

1 – Purcari 2/9; 2 – Vapniarka 4/18; 3 – Tomai 1/6; 4 – Tuzly 2/5; 5 –
Khadzhider 13/15; 6 – Taraclia I 1/2

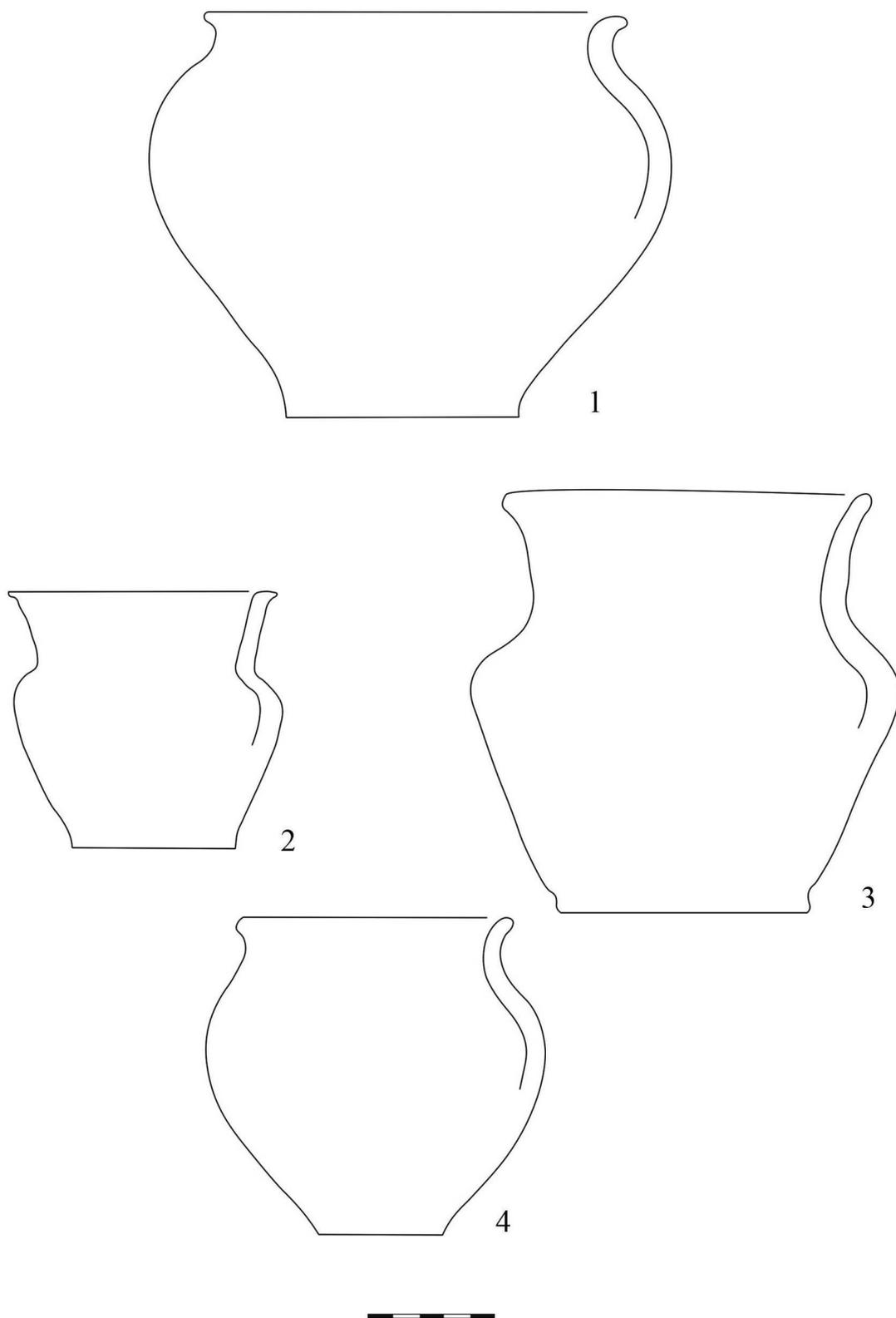


Fig. 8. Pots A I type

1–Giurgiulești 3/13; 2–Plavni III 2/3; 3–Semenivka 2/2; 4–Efymivka 4/10

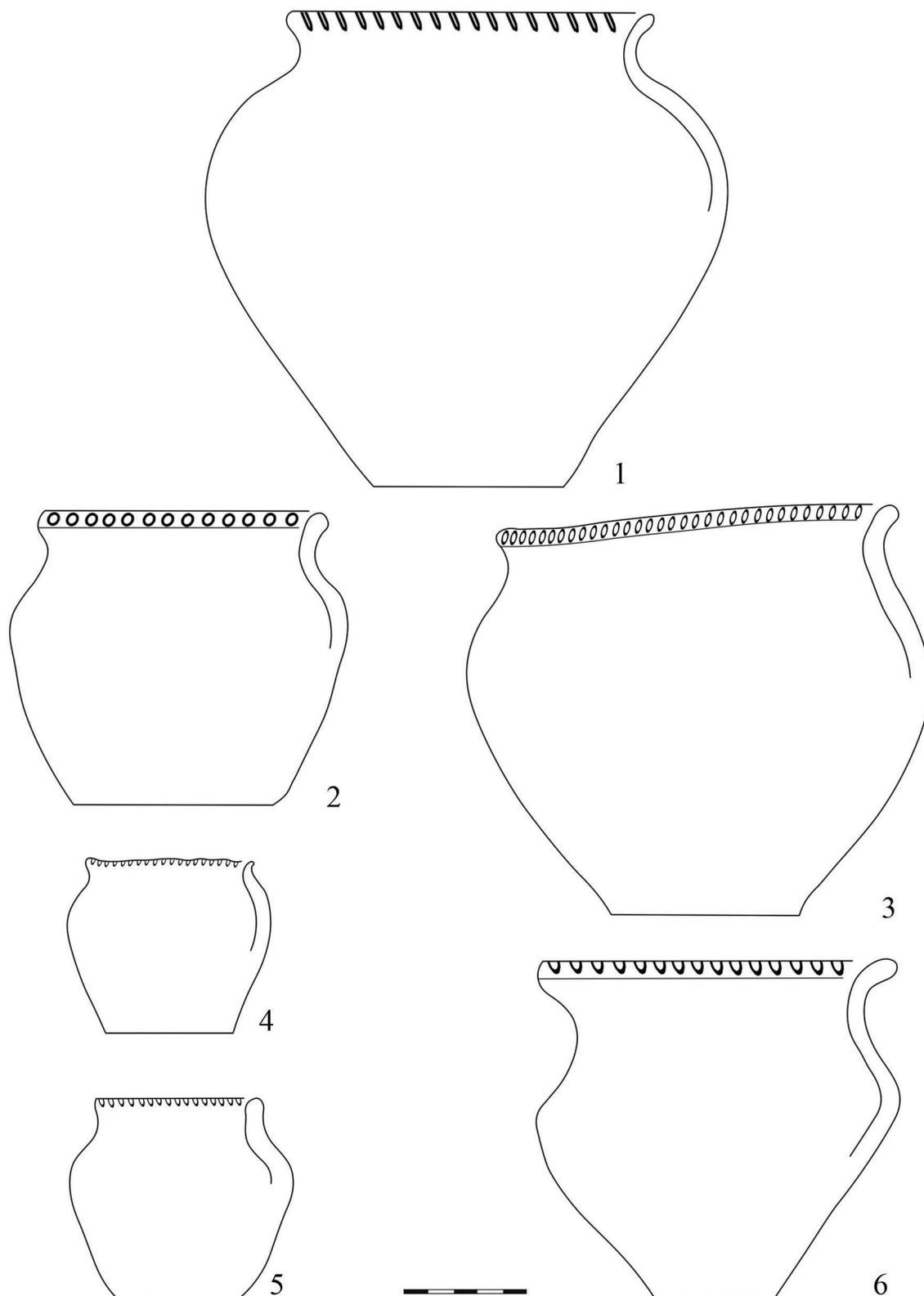


Fig. 9. Pots A I type

1 – Sadove 1/18; 2 – Mocra 1/6; 3 – Bilolissia 11/9; 4 – Feștețița II 1/7; 5 –
Semenivka 19/3; 6 – Trapivka 6/19

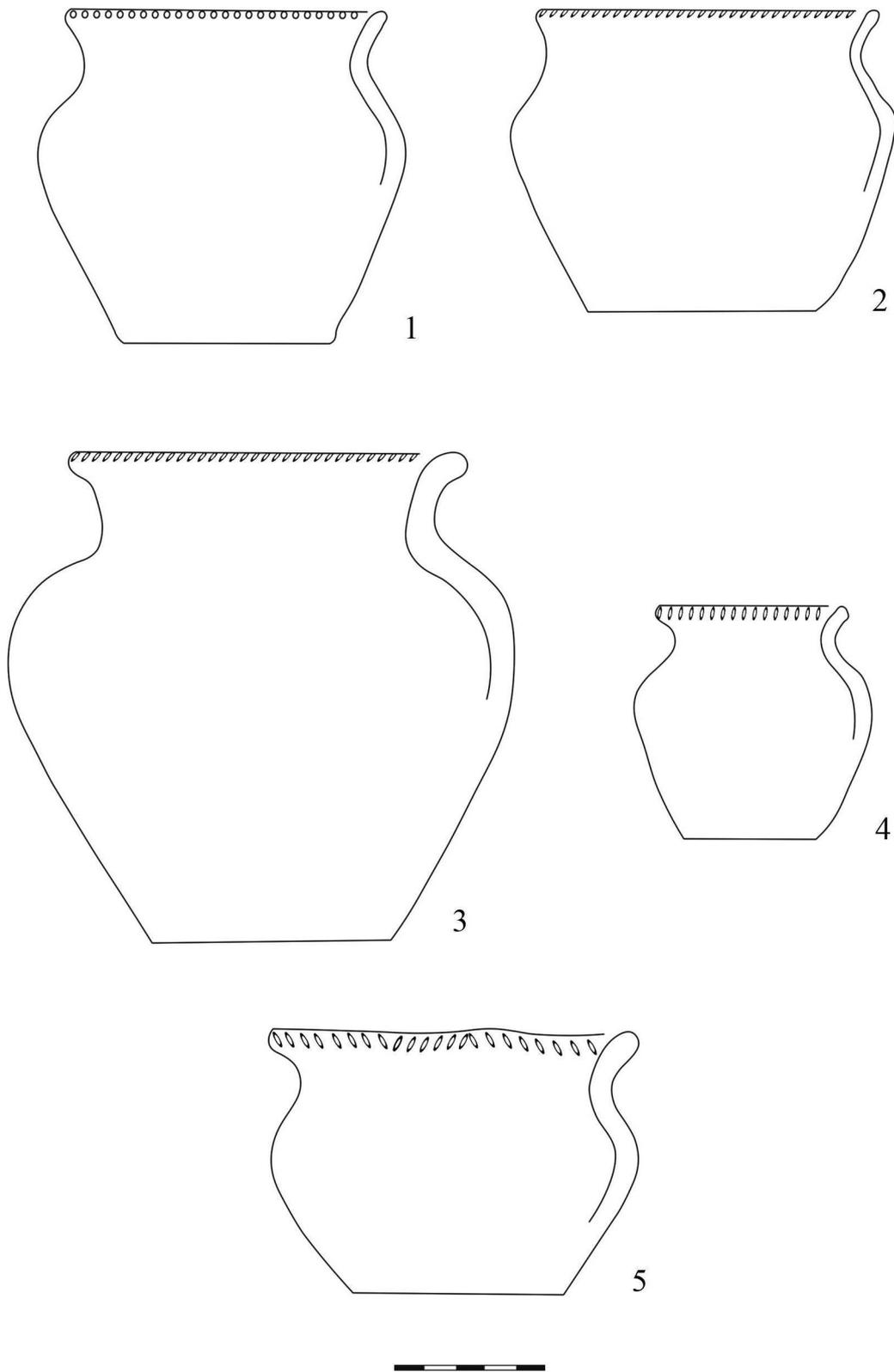


Fig. 10. Pots A I type

1 – Burlănești 1/8; 2 – Nicolscoe 8/21; 3 – Pidgirne 1/19; 4 – Mayaky III 2/8;
 5 – Trapivka 1/8

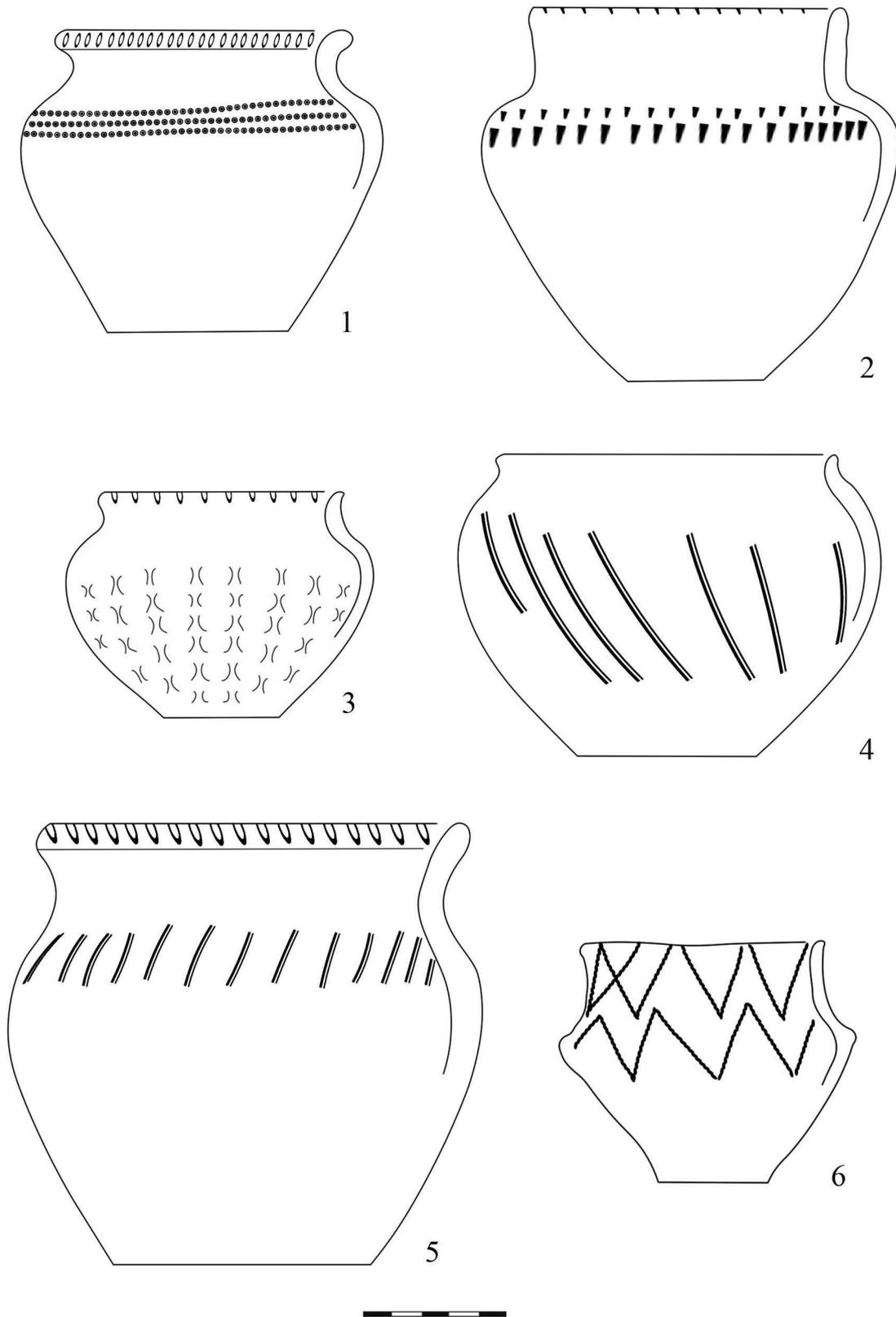


Fig. 11. Pots A I type

1 – Mărculești 3/2; 2 – Plavni III 2/4; 3 – Tochile-Răducani 1/10; 4 – Shevchenkove 3/3; 5 – Trapivka 1/1; 6 – Plavni III 2/11

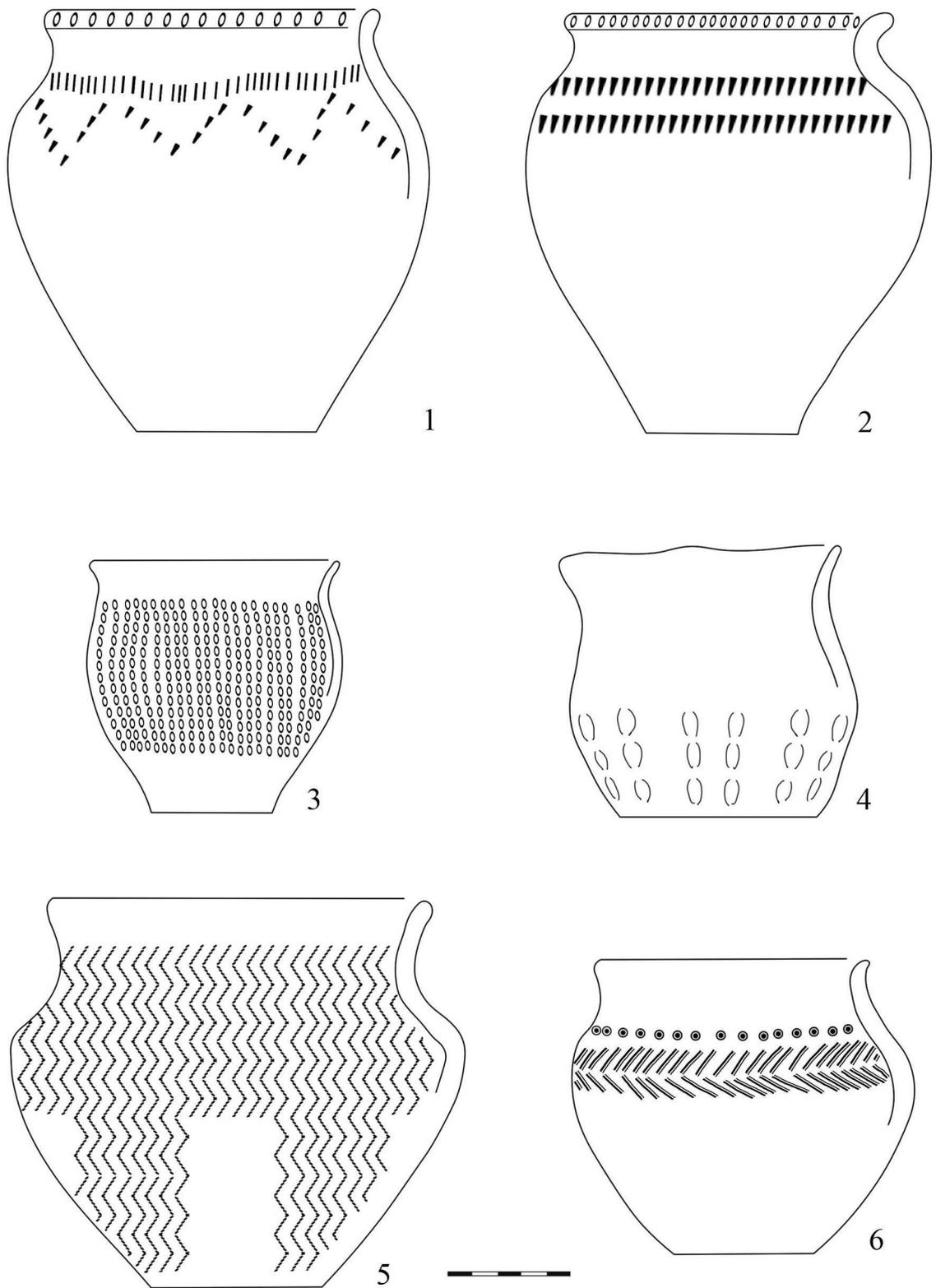


Fig 12. Pots A I type

1 – Gura Bîcului barrow 6; 2 – Novogradkivka 1/4; 3 – Găvănoasa 1/5; 4 – Brăviceni 1/10; 5 – Sărăteni 1/13; 6 – Kovalivka II 4/22

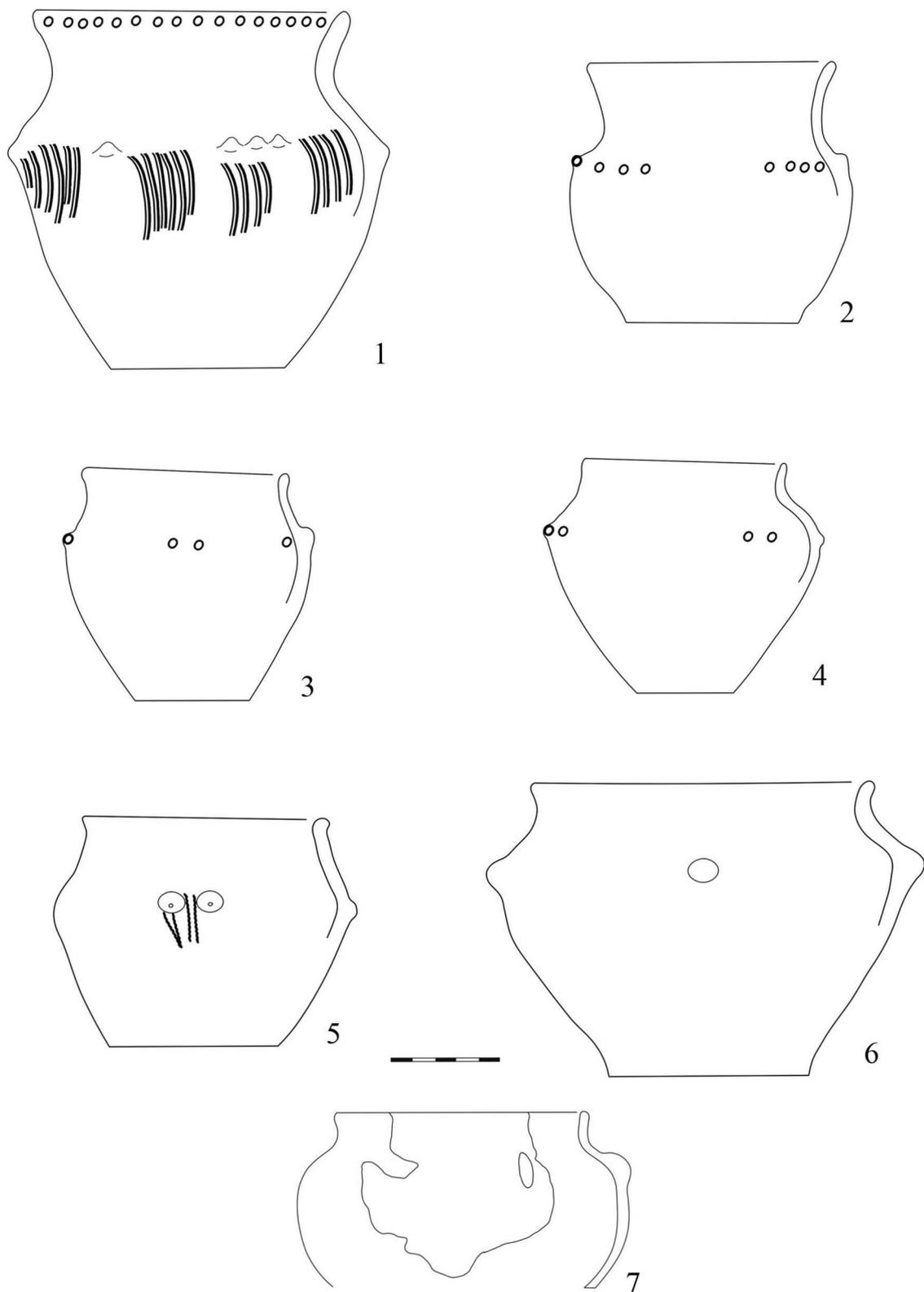


Fig. 13. Pots A I type

1 – Petrodolynske 1/4; 2 – Plavni 9/7; 3 – Medveja 4/4; 4 – Plavni 11/17;
 5 – Mresnota Mogyla 2/4; 6 – Mresnota Mogyla 1/3; 7 – Nerushay 9/9

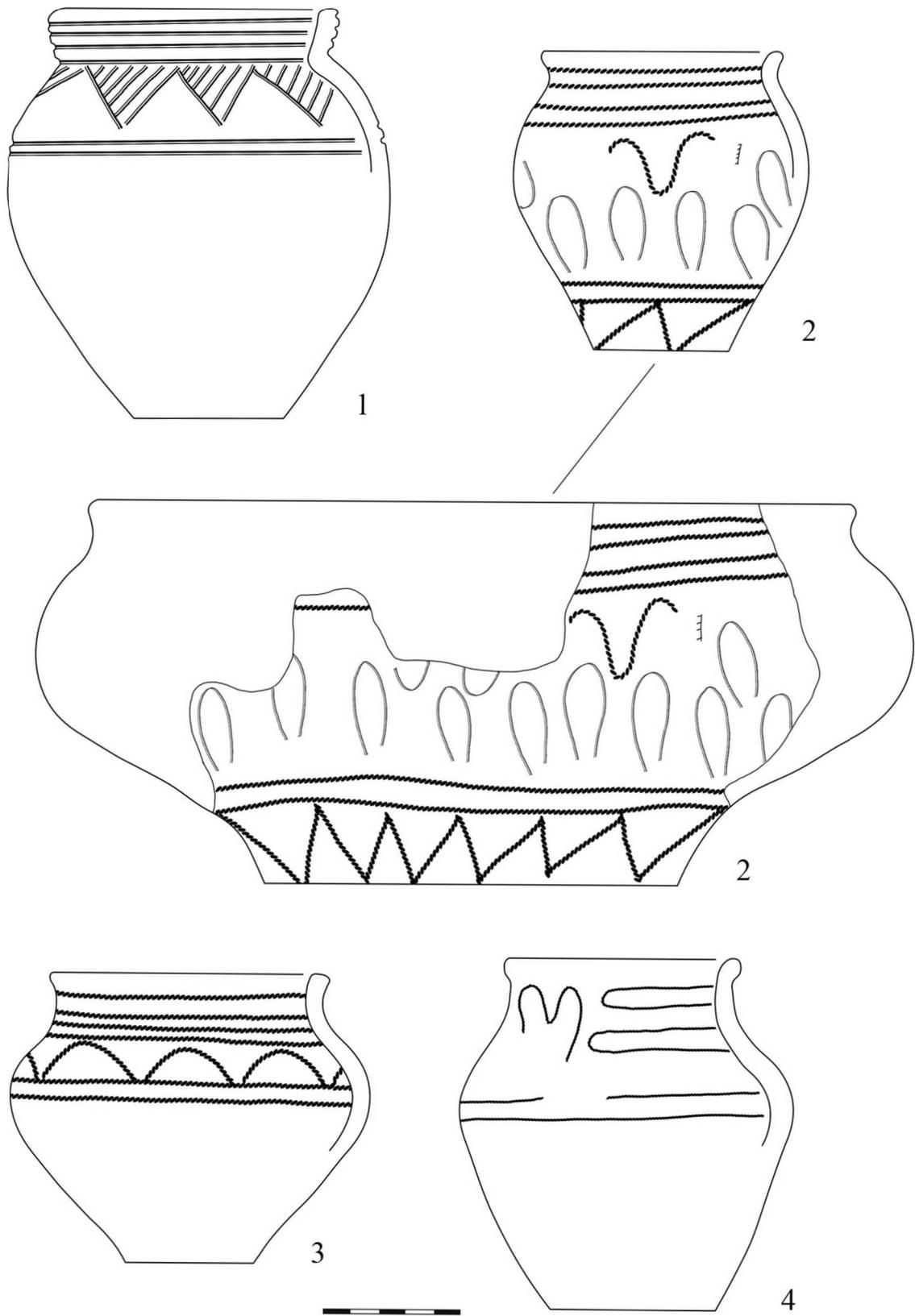


Fig. 14. Pots A I type

1 – Pysarivka 2/3; 2,3 – Pererîta 1/10; 4 – Sărăteni 1/13

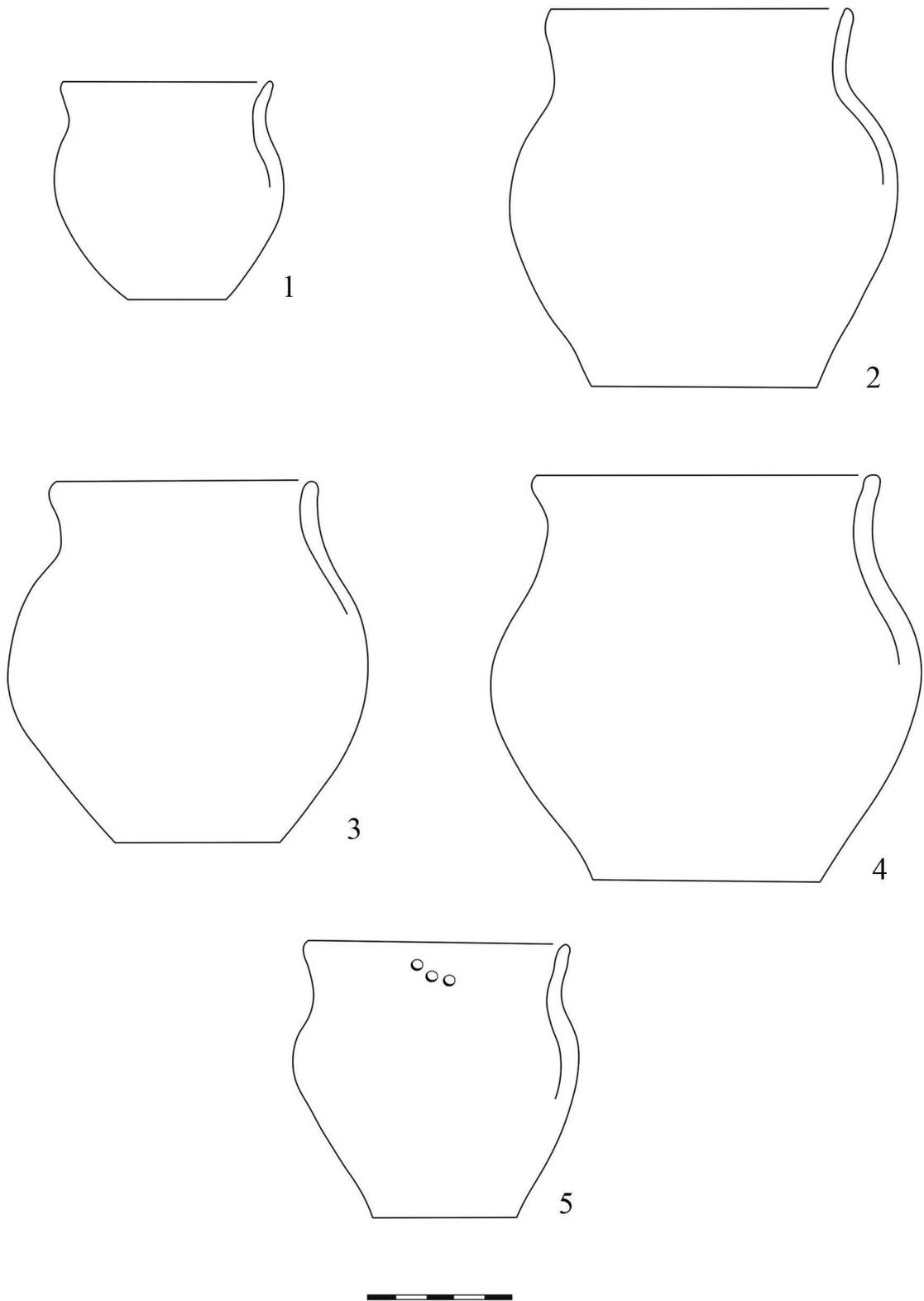


Fig. 15. Pots A II type

1 – Camenca, barrow 280 (445); 2 – Talmaza 13/9; 3 – Balabanu 4/5; 4 – Olănești 8/4; 5 – Ciobruciu II 1/11

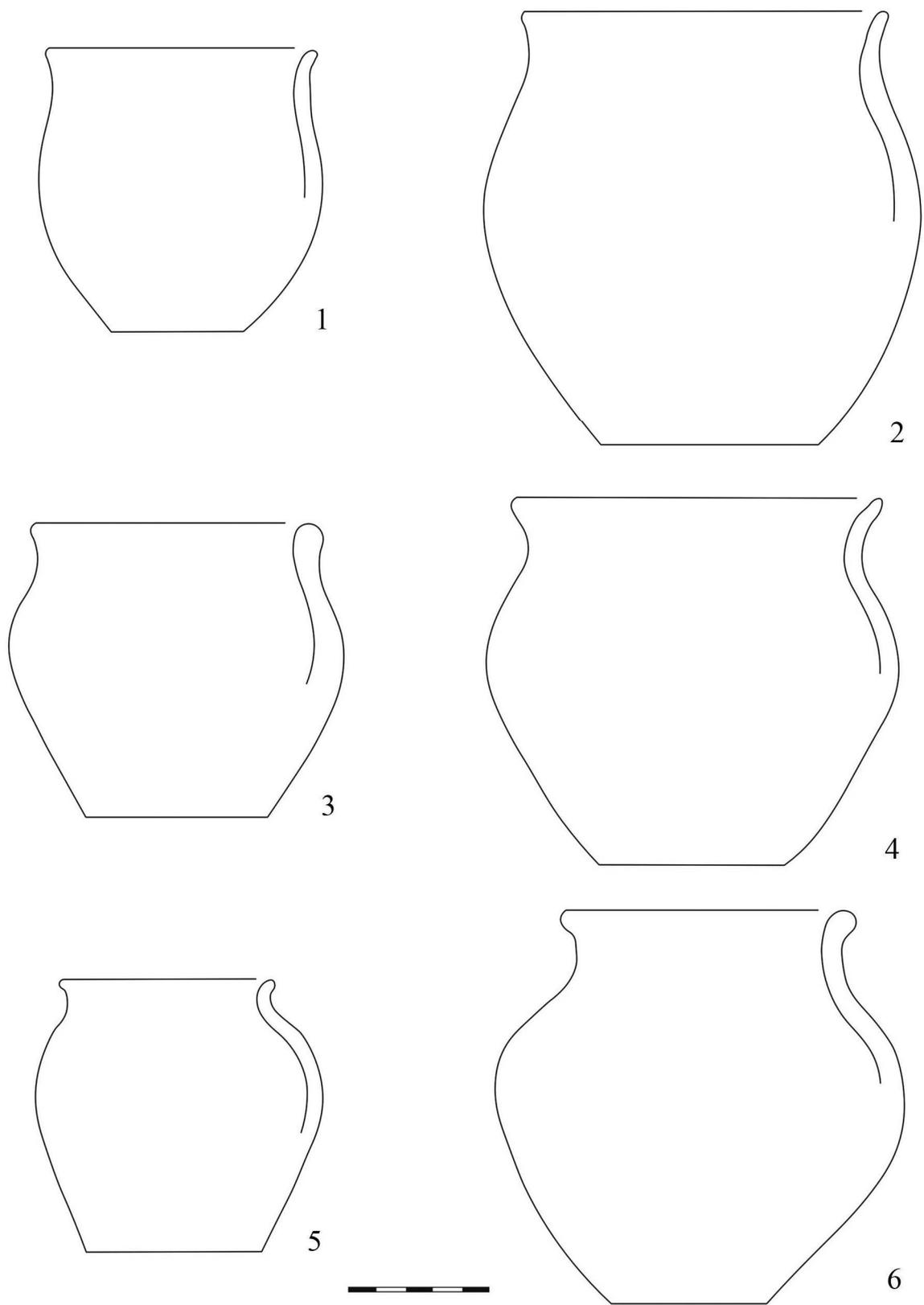


Fig. 16. Pots A II type

1 – Petrești II 1/4; 2 – Mykolaivka 8/10; 3 – Kyslytsia 8/6; 4 – Brăviceni 16/4; 5 – Nicolscoe 16/17; 6 – Kovalivka VI 4/11

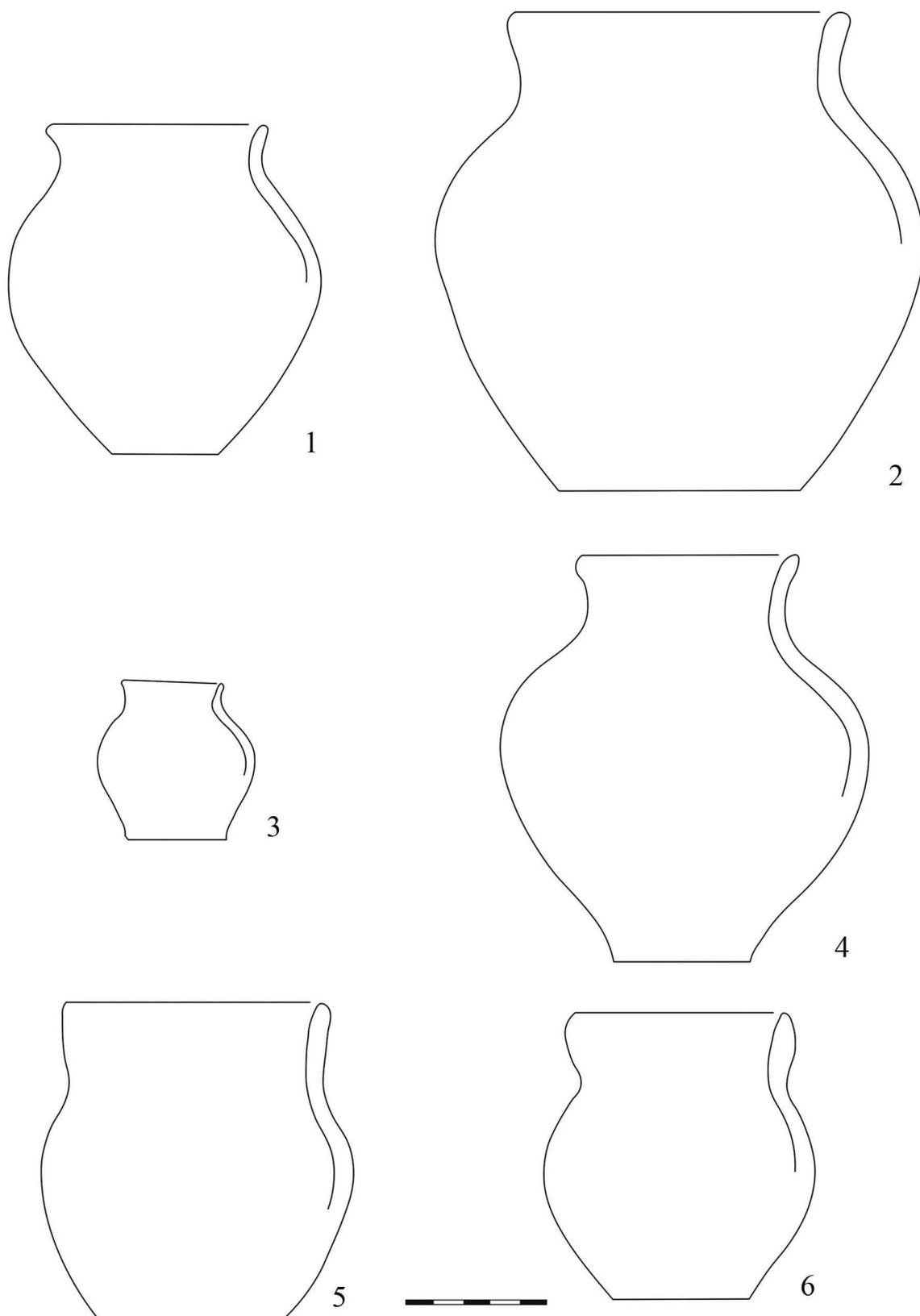


Fig. 17. Pots A II type

1 – Balabanu 3/3; 2 – Dalnik 1/2; 3 – Bădragii Vechi 21/2; 4 – Zhovtyi Yar
5/4; 5 – Kurchi 3/11; 6 – Frikazey 4/29

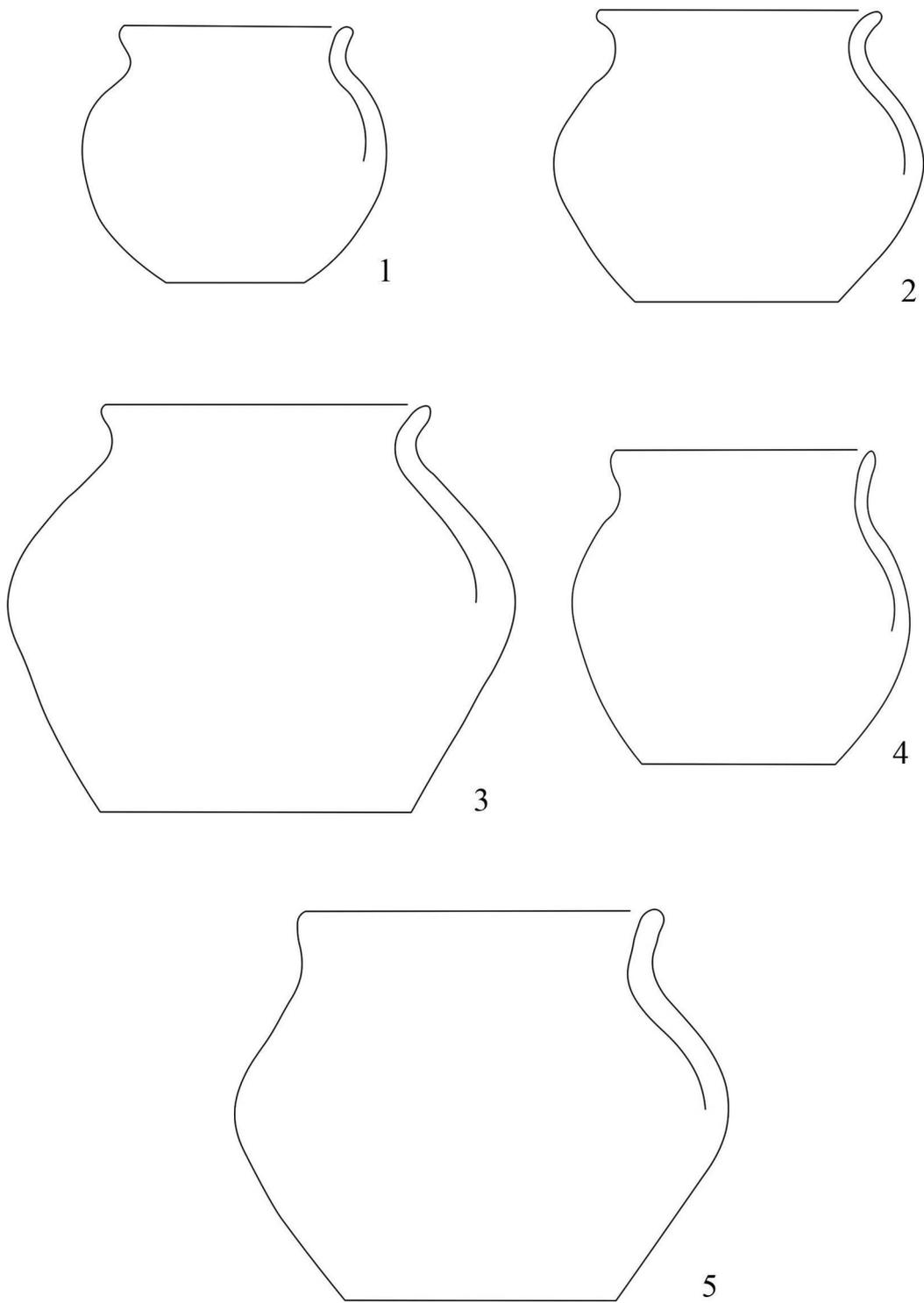


Fig. 18. Pots A II type

1 – Podoima 3/6; 2 – Corjeuți 4/8; 3 – Corjova 2/13; 4 – Nagirne 14/17;
5 – Kubey 1/11

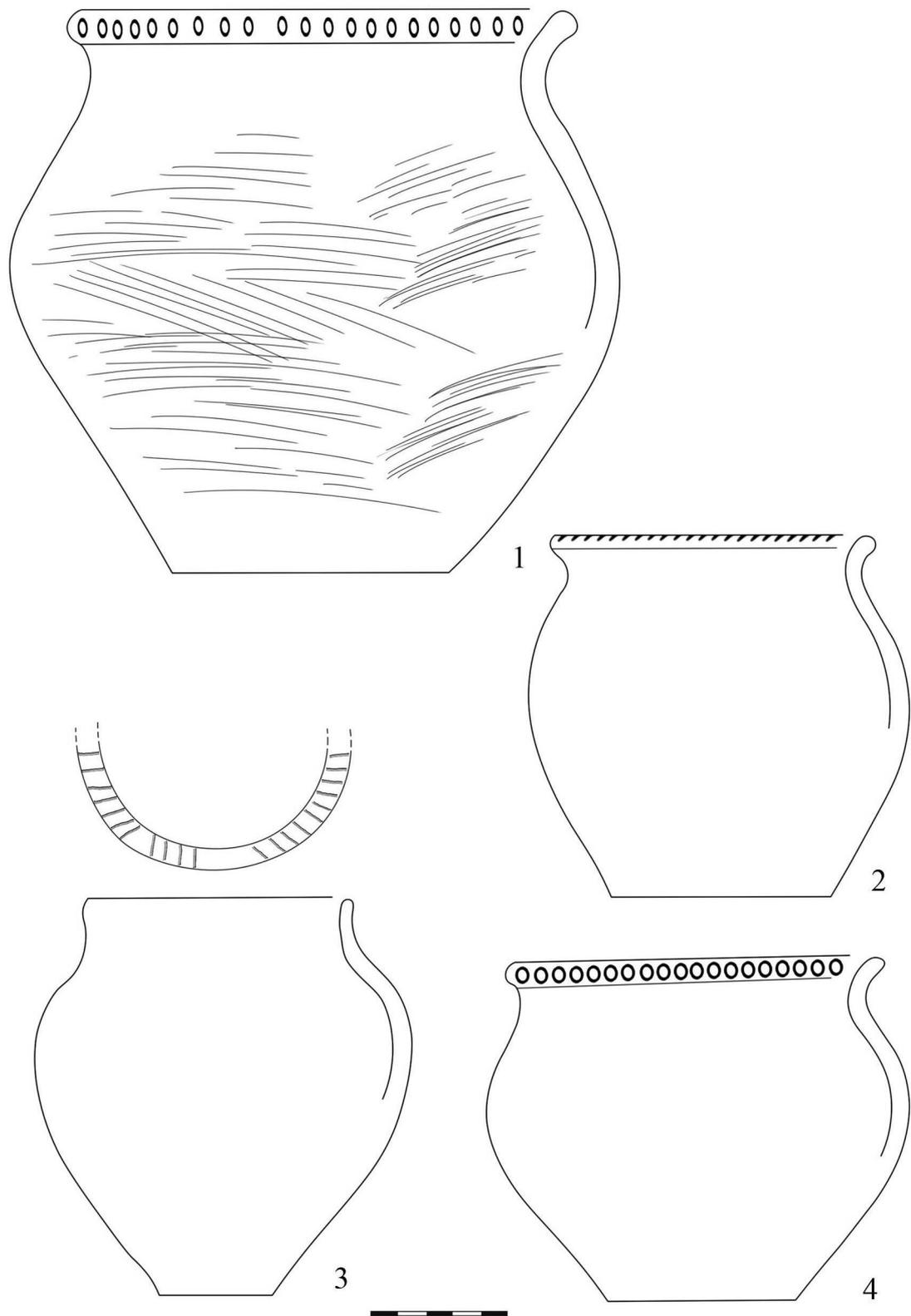


Fig. 19. Pots A II type

1 – Kubey 1/9; 2 – Vyshneve 52/3; 3 – Kovalivka II 9/7; 4 – Copceac 3/9

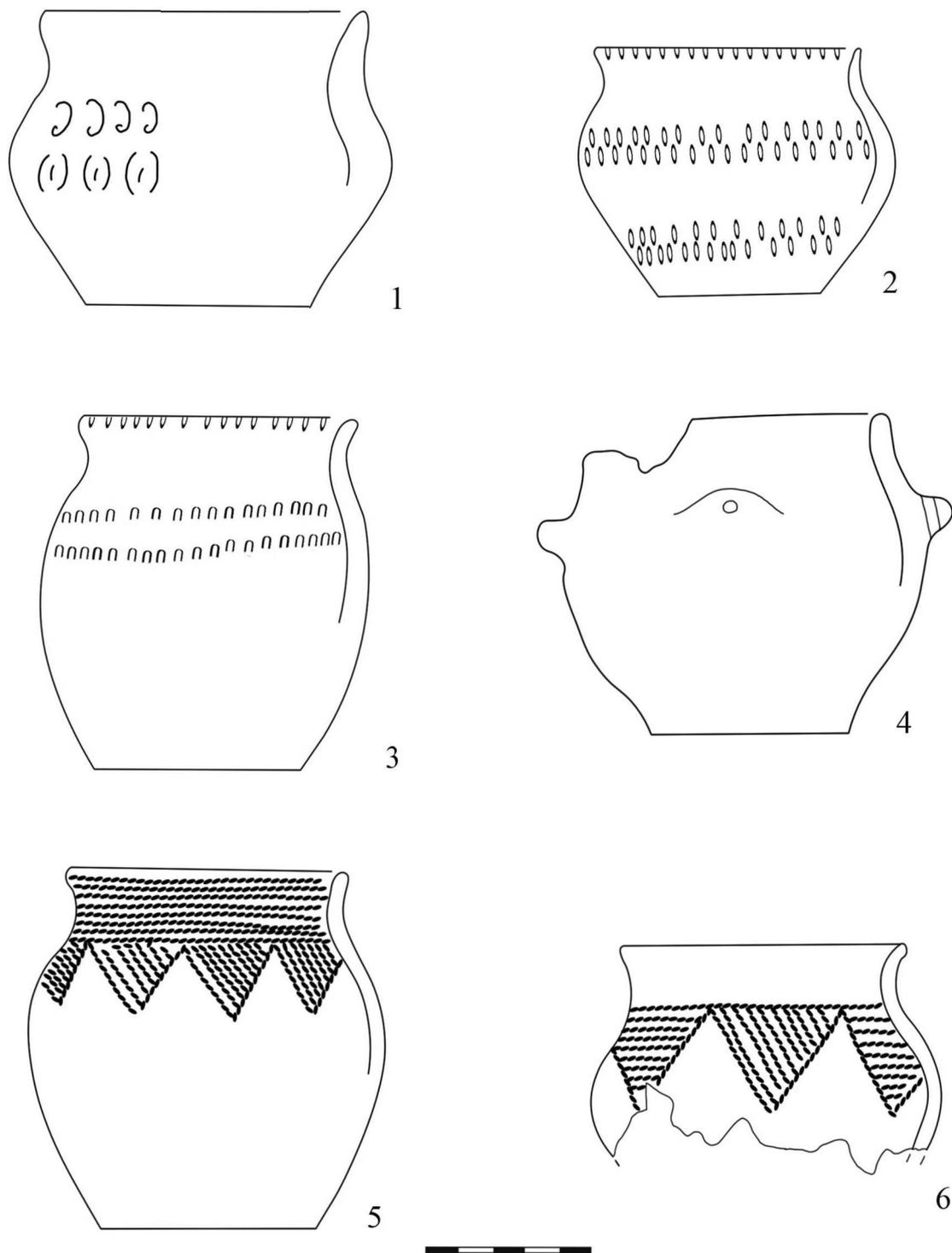


Fig. 20. Pots A II type

1 – Kyslytsia 8/12; 2 – Yasski, barrow 3; 3 – Kovalivka II 8/4; 4 – Taraclia I 1/17; 5 – Glyboke, barrow 2; 6 – Roșcani 4/8

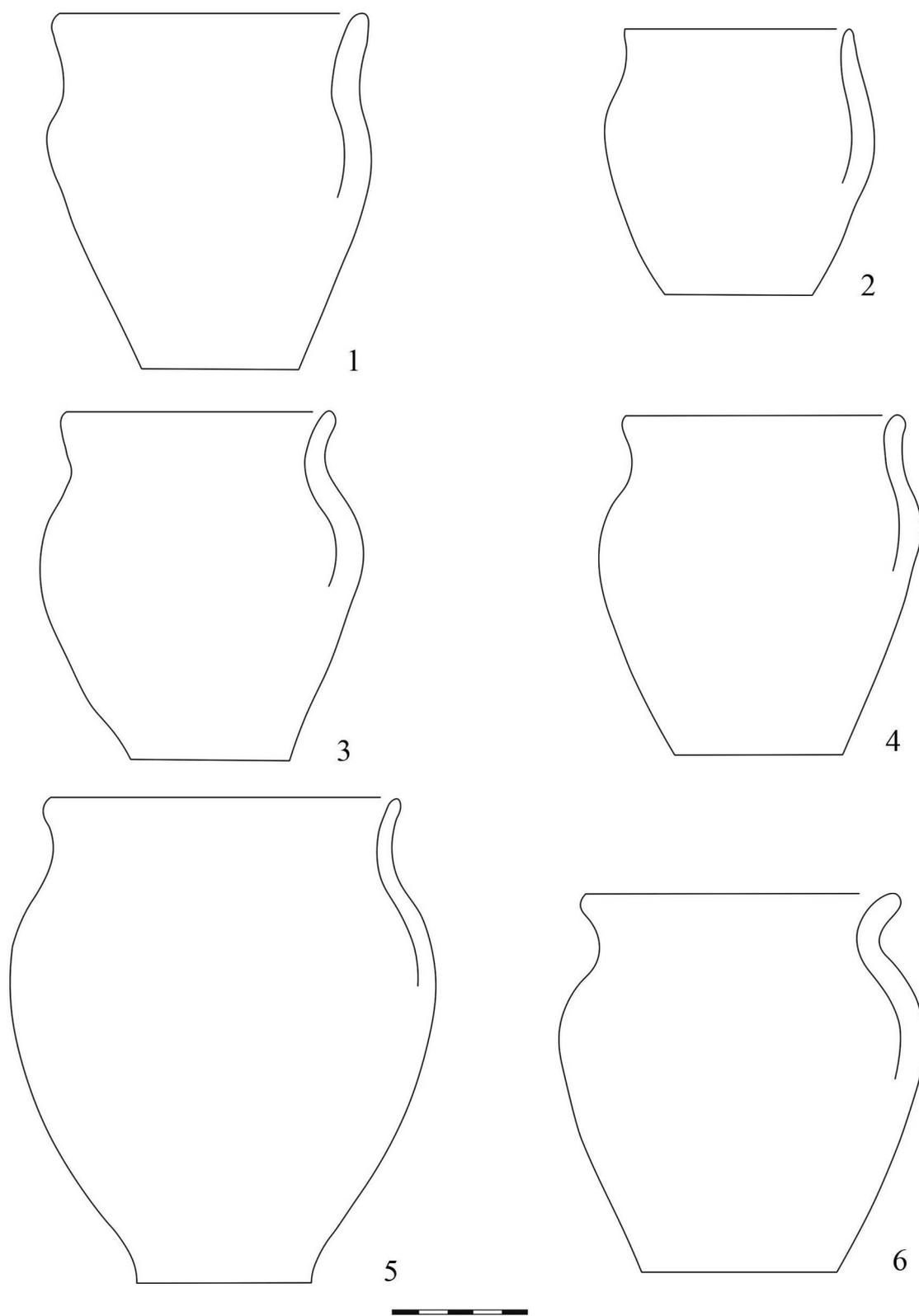


Fig. 21. Pots B I type

1 – Olănești 13/11; 2 – Trapivka 6/19; 3 – Semenivka 1/5; 4 – Trapivka 1/18;
5 – Etulia I 1/14; 6 – Bolgrad 4/4

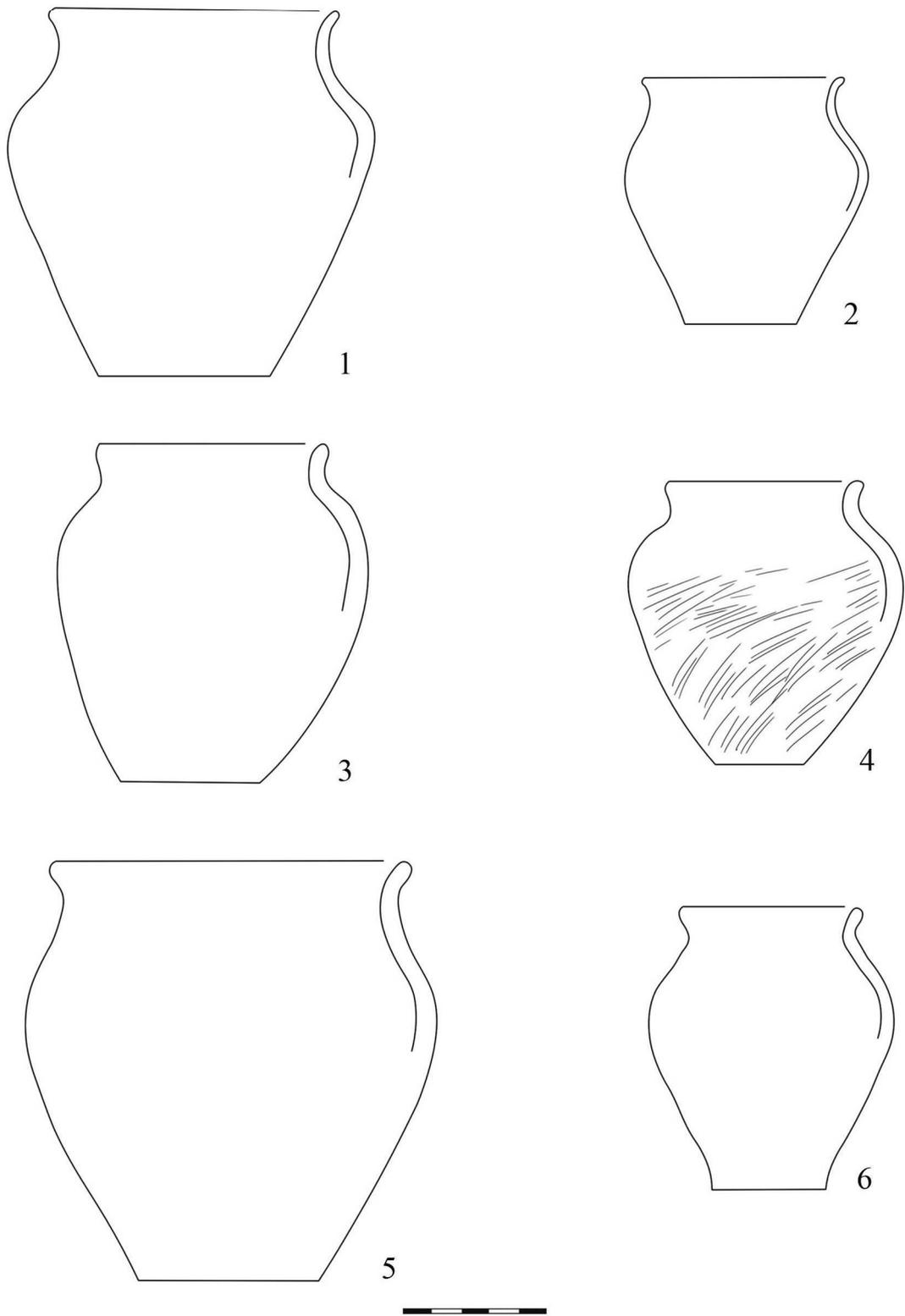


Fig. 22. Pots B I type

1 – Pysarivka 5/2; 2 – Mocra 1/12; 3 – Kovalivka I 4/14; 4 – Kovalivka VIII
1/13; 5 – Vladychen 1/2; 6 – Alkalia 4/10

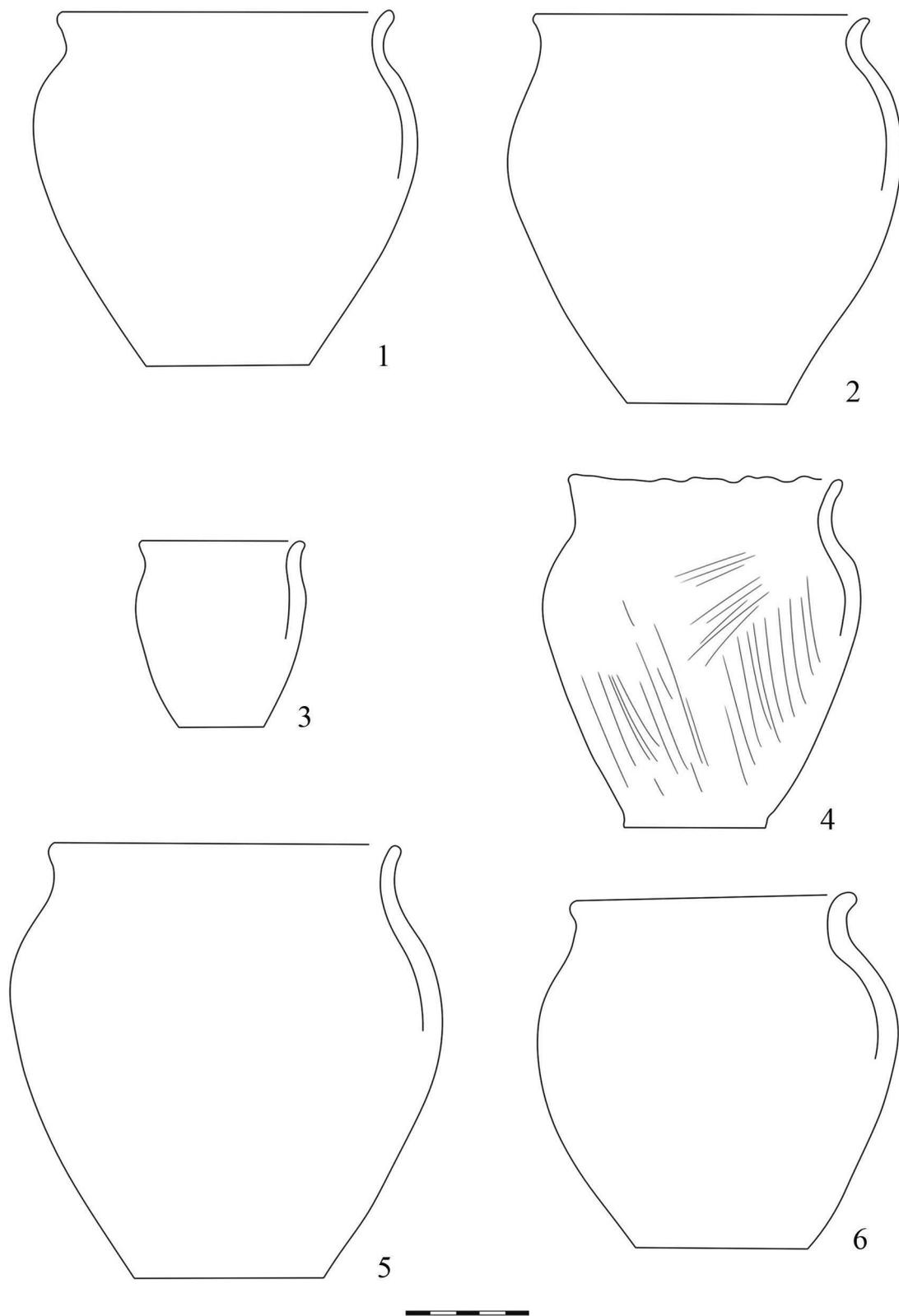


Fig. 23. Pots B I type

1 – Yasski 6/13; 2 – Chervonyi Jar II 1/6; 3 – Balabanu 13/10; 4 – Taraclia II 10/7; 5 – Speia 1/12; 6 – Zhovtyi Yar 8/3

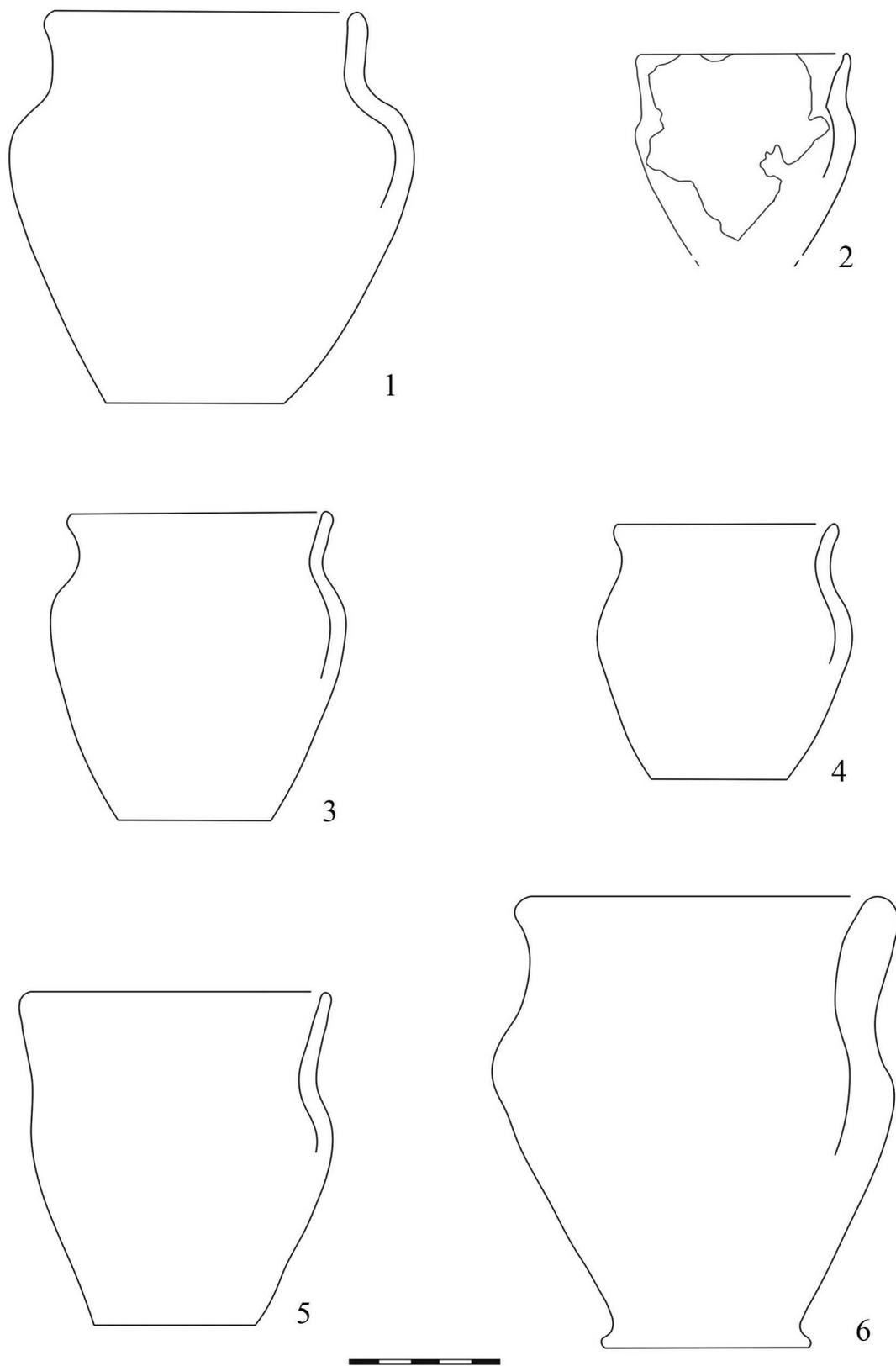


Fig. 24. Pots B I type

1 – Butor 1/13; 2 – Hlinaia “Dot” 1/6; 3 – Mykhaylivka 3/5; 4 – Mykolaivka 8/8; 5 – Crihana Veche 1/12; 6 – Kholmske 2/17

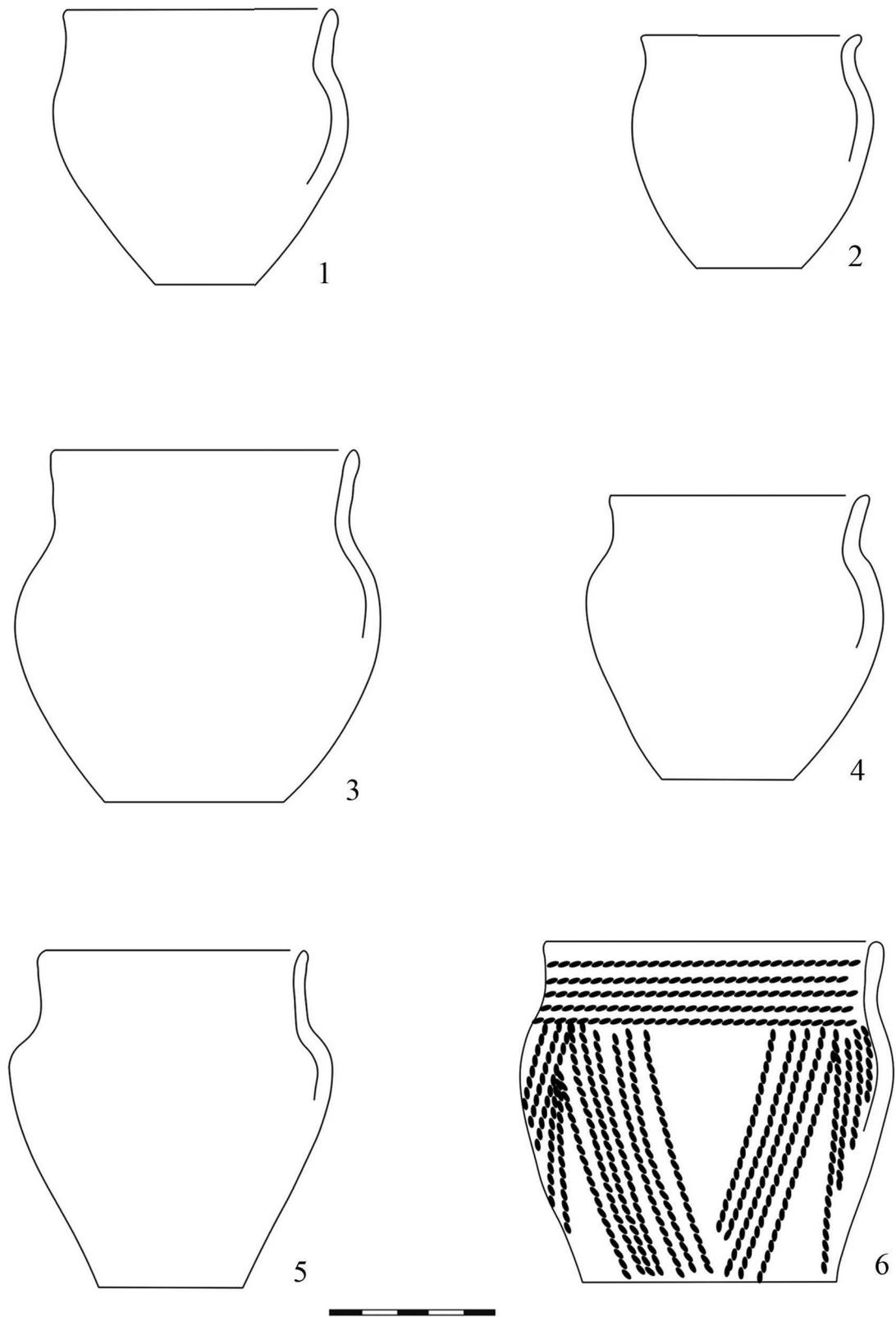


Fig. 25. Pots B I type

1 – Bagate 2/15; 2 – Bagate 2/11; 3 – Mykolaivka 4/6; 4 – Vynogradivka 7/7;
 5 – Glyboke 1/23; 6 – Bashtanivka 7/21

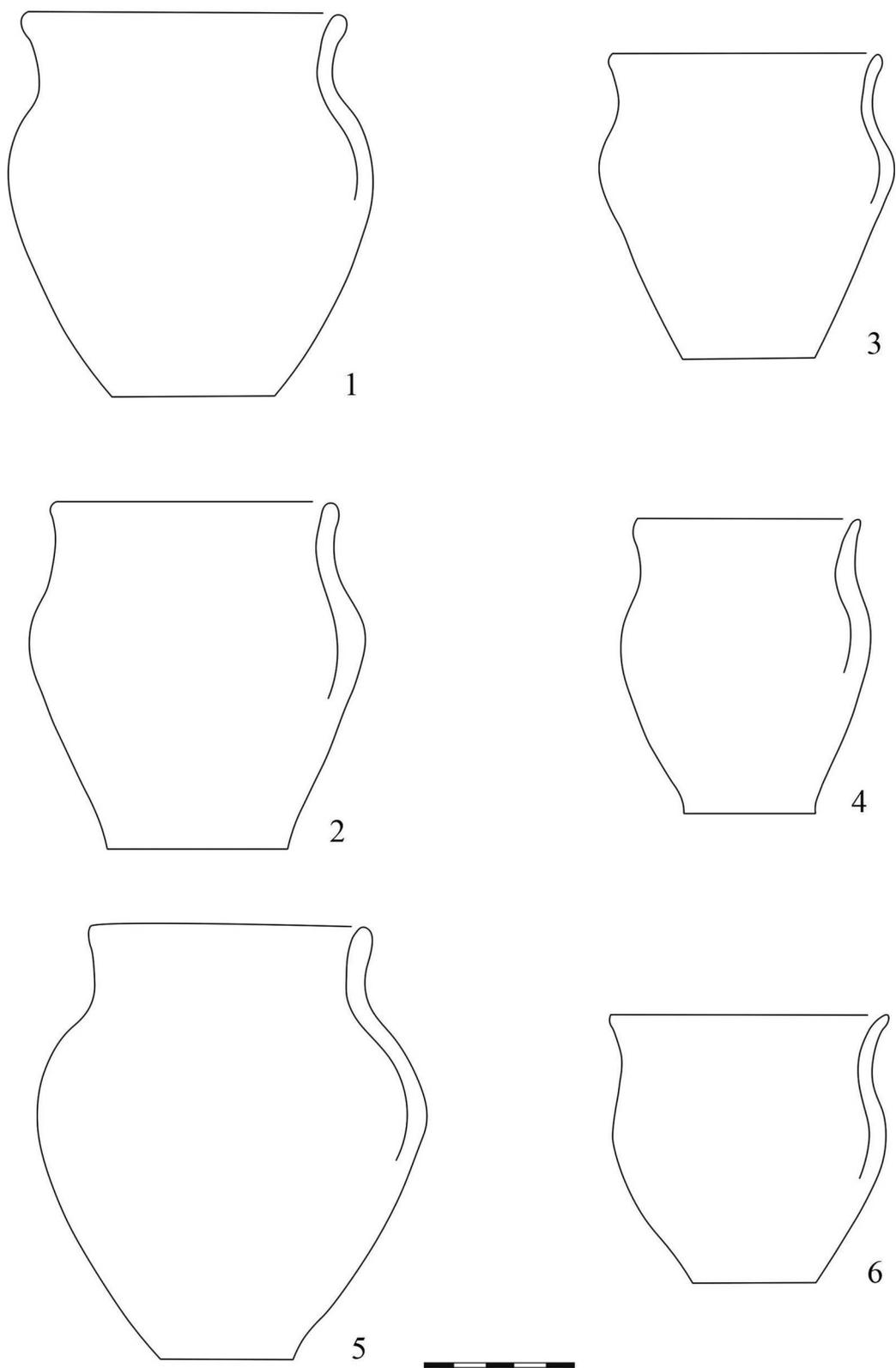


Fig. 26. Pots B I type

1 – Kovalivka VIII 1/1; 2 – Bădragii Vechi 11/3; 3 – Taraclia 1/2; 4 – Kubey 21/5; 5 – Răscăieții Noi 2/1; 6 – Vladychen II 9/2

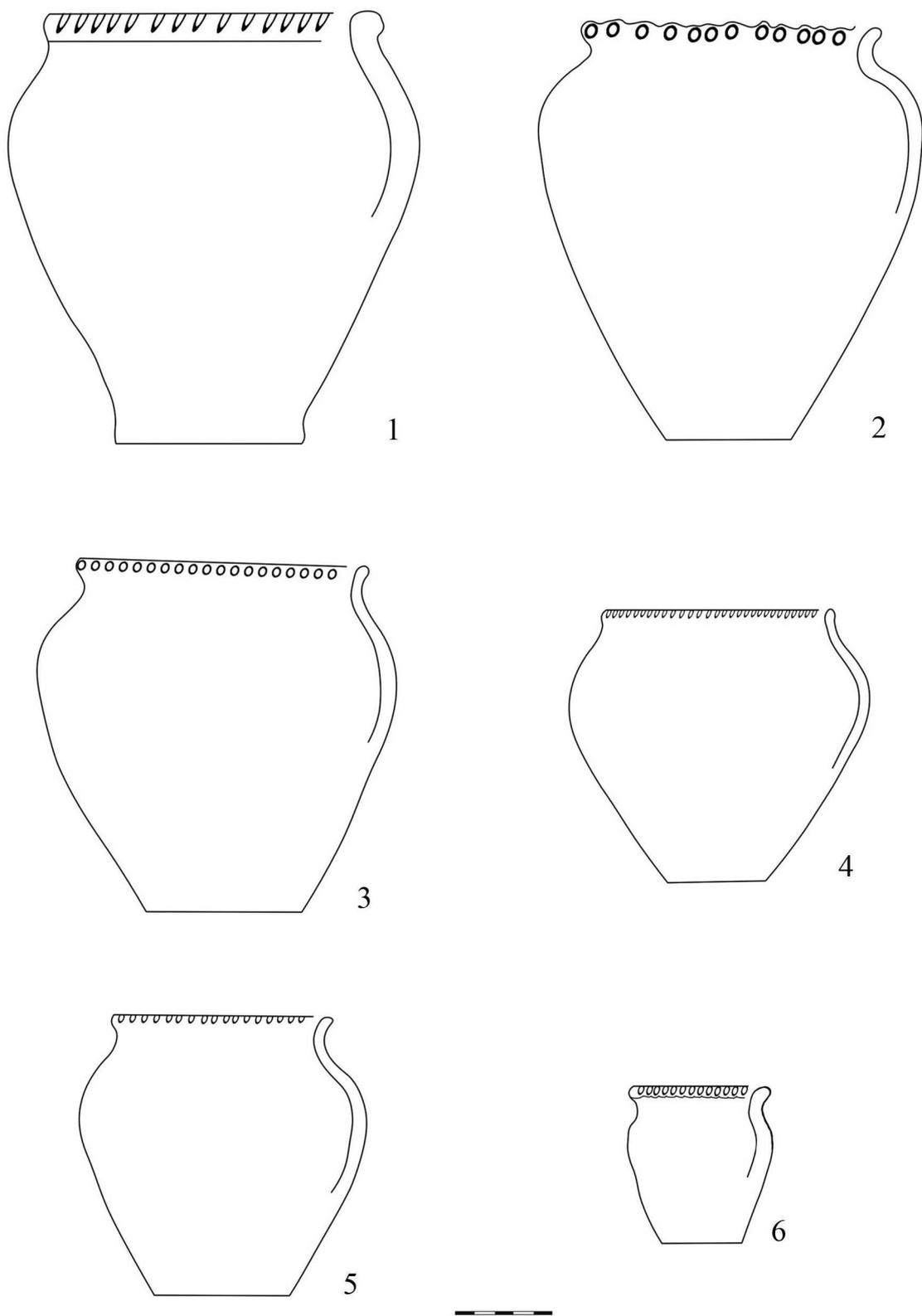


Fig. 27. Pots B I type

1 – Căușeni 1/18; 2 – Tiraspol 3/19; 3 – Gura Bîcului 3/6; 4 – Dubăsari 31/7;
 5 – Yasski 1/27; 6 – Ocnîța 5/4

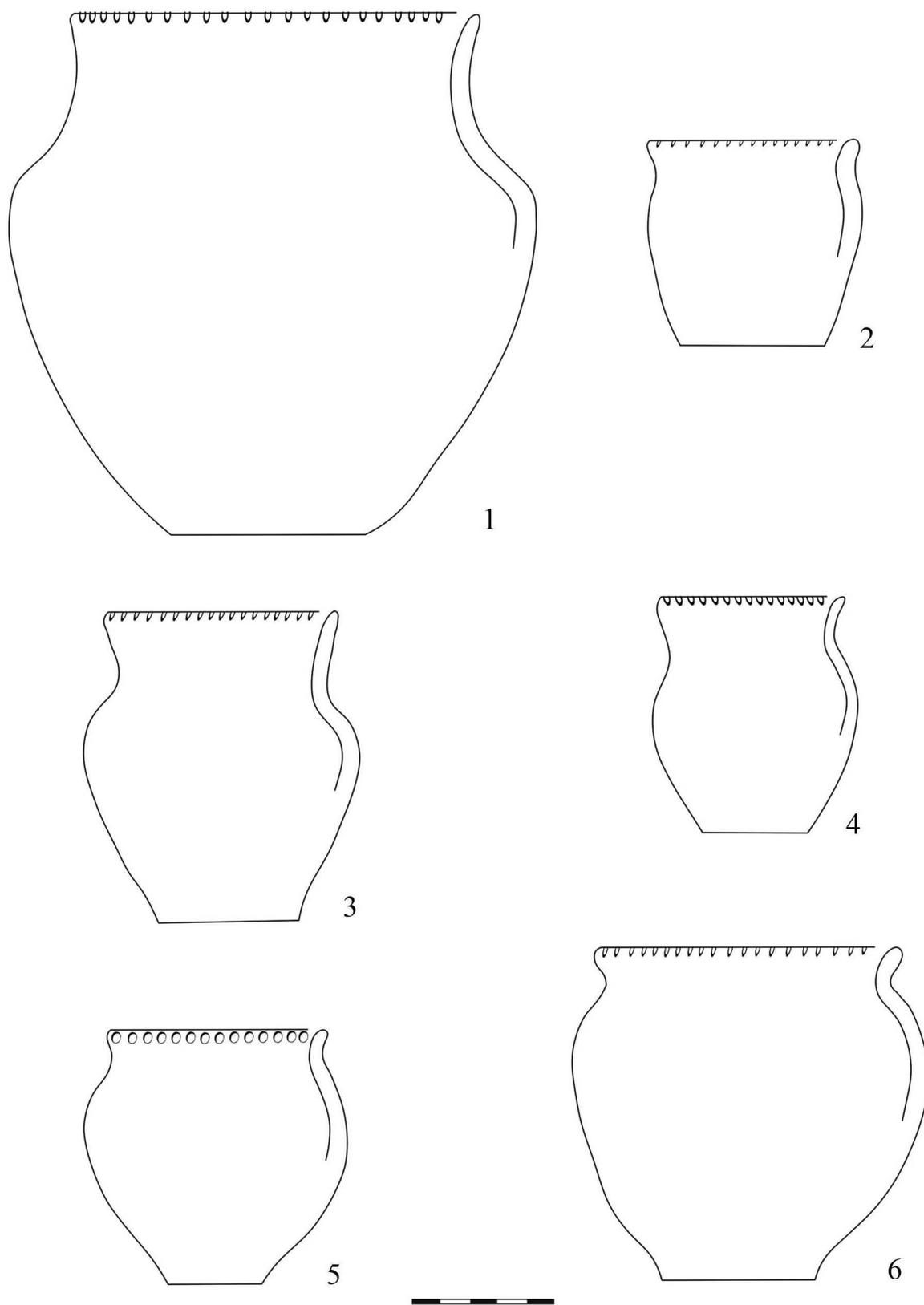


Fig. 28. Pots B I type

1 – Etulia Nouă 1/4; 2 – Ocnîța 7/5; 3 – Mefodiivka 3/4; 4 – Mayaky III 2/7;
 5 – Pokrovka 1/15; 6 – Kovalivka I 2/2

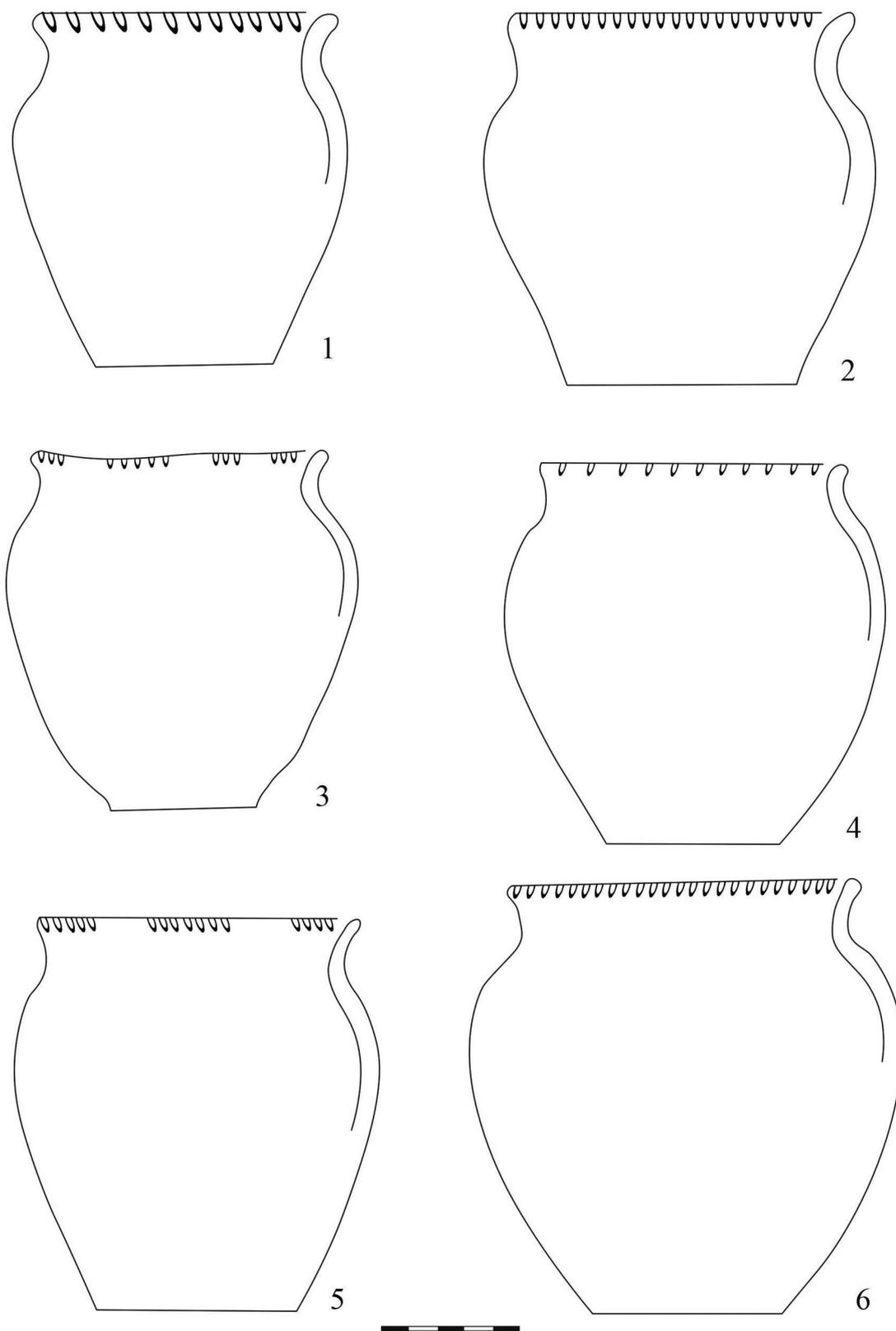


Fig. 29. Pots B I type

1 – Bilolissia 1/5; 2 – Bashtanivka 4/17; 3 – Kholodna Balka 1/6; 4 –
 Novokamyanka 1/5; 5 – Novogradkivka 2/7; 6 – Nagirne 15/12

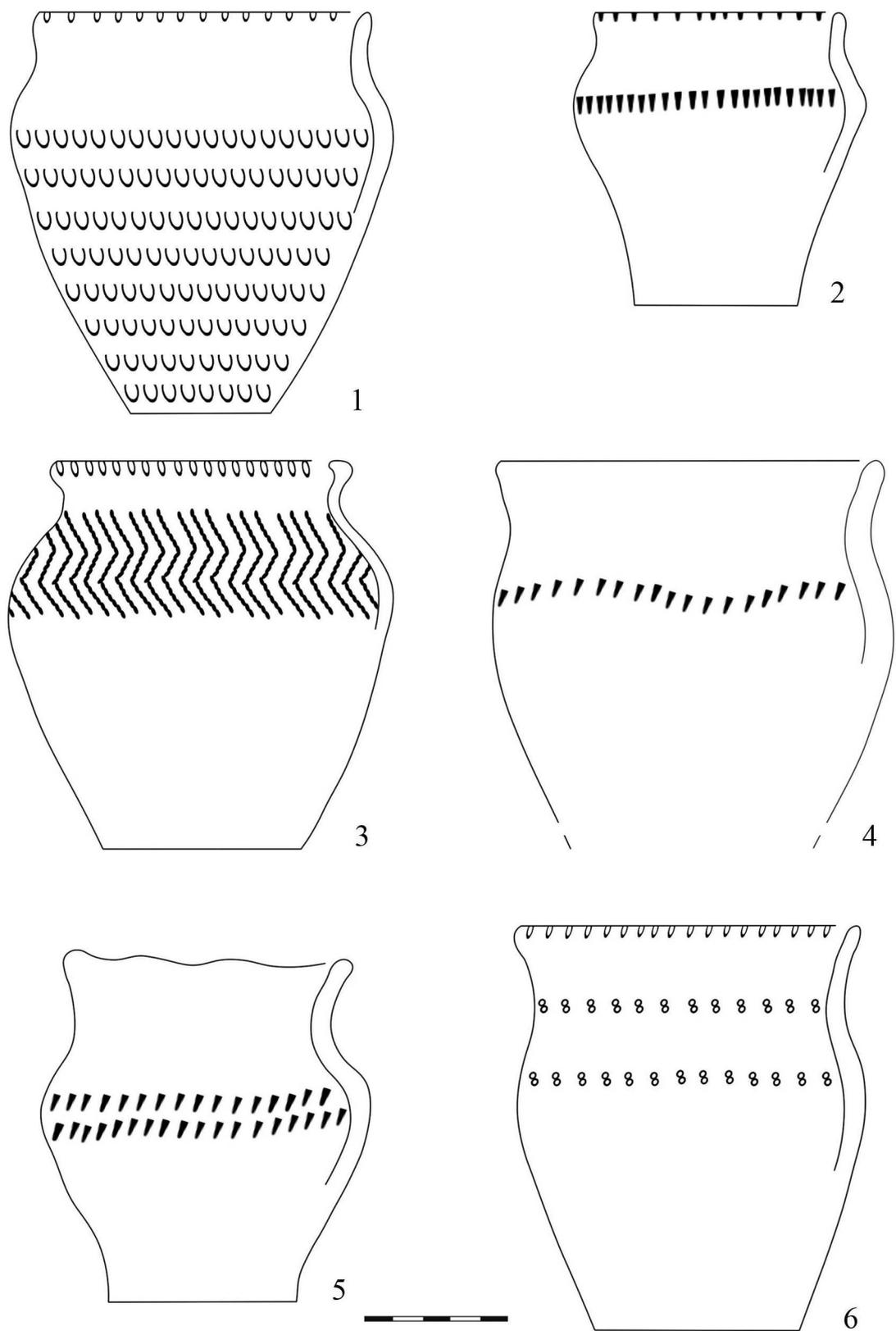


Fig. 30. Pots B I type

1 – Burlănești, barrow 2; 2 – Olănești 13/8; 3 – Sychavka 1/10; 4 – Cîrnățeni 7/3; 5 – Crihana Veche 12/pit; 6 – Parcani, barrow 85

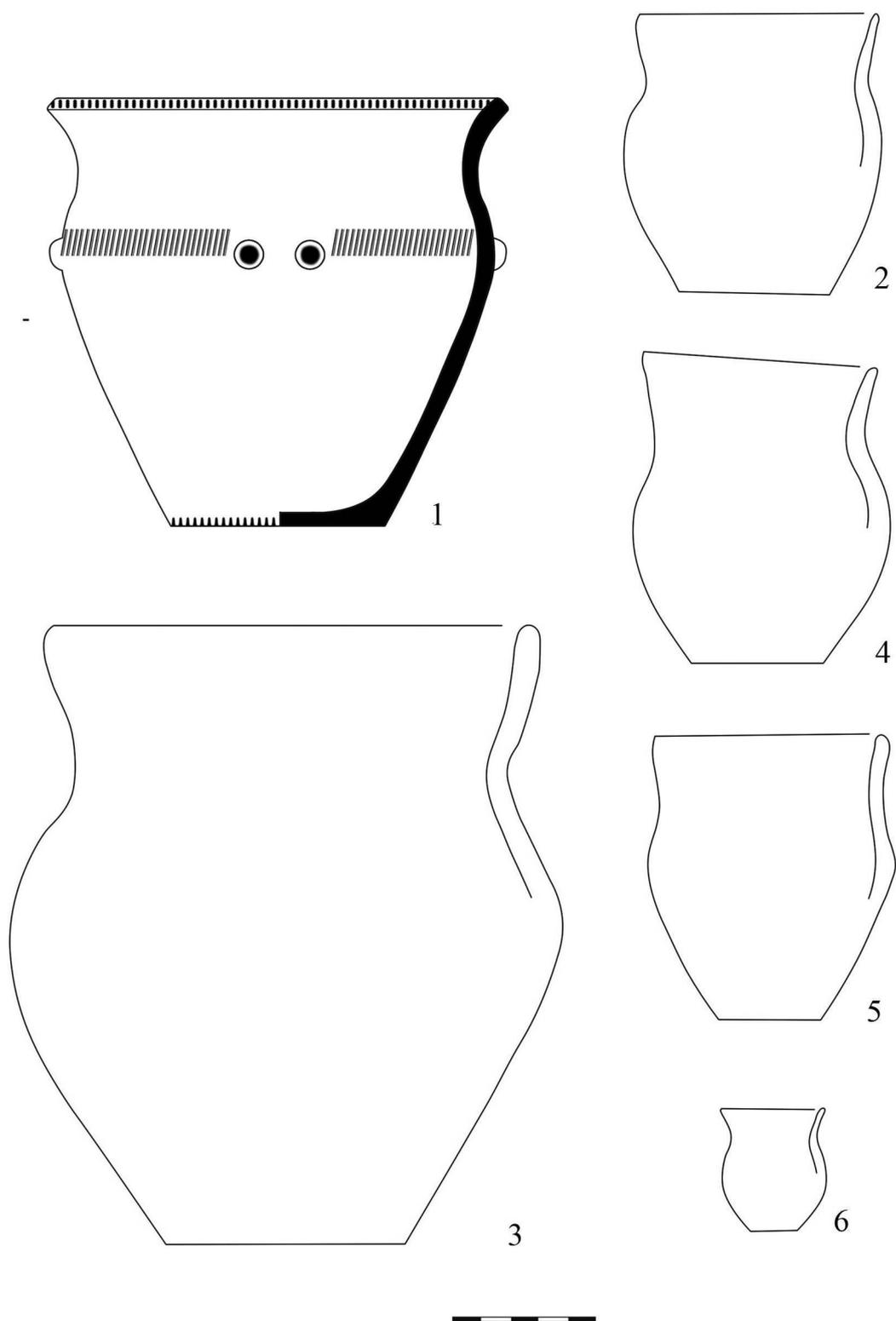


Fig. 31. Pots B I and B II types

1 – Morenii Vechi 4/3; 2 – Dalnik II 3/6; 3 – Taraclia II 18/10; 4 – Trapivka 10/6;
 5 – Taraclia II 10/9; 6 – Vyshneve 56/1

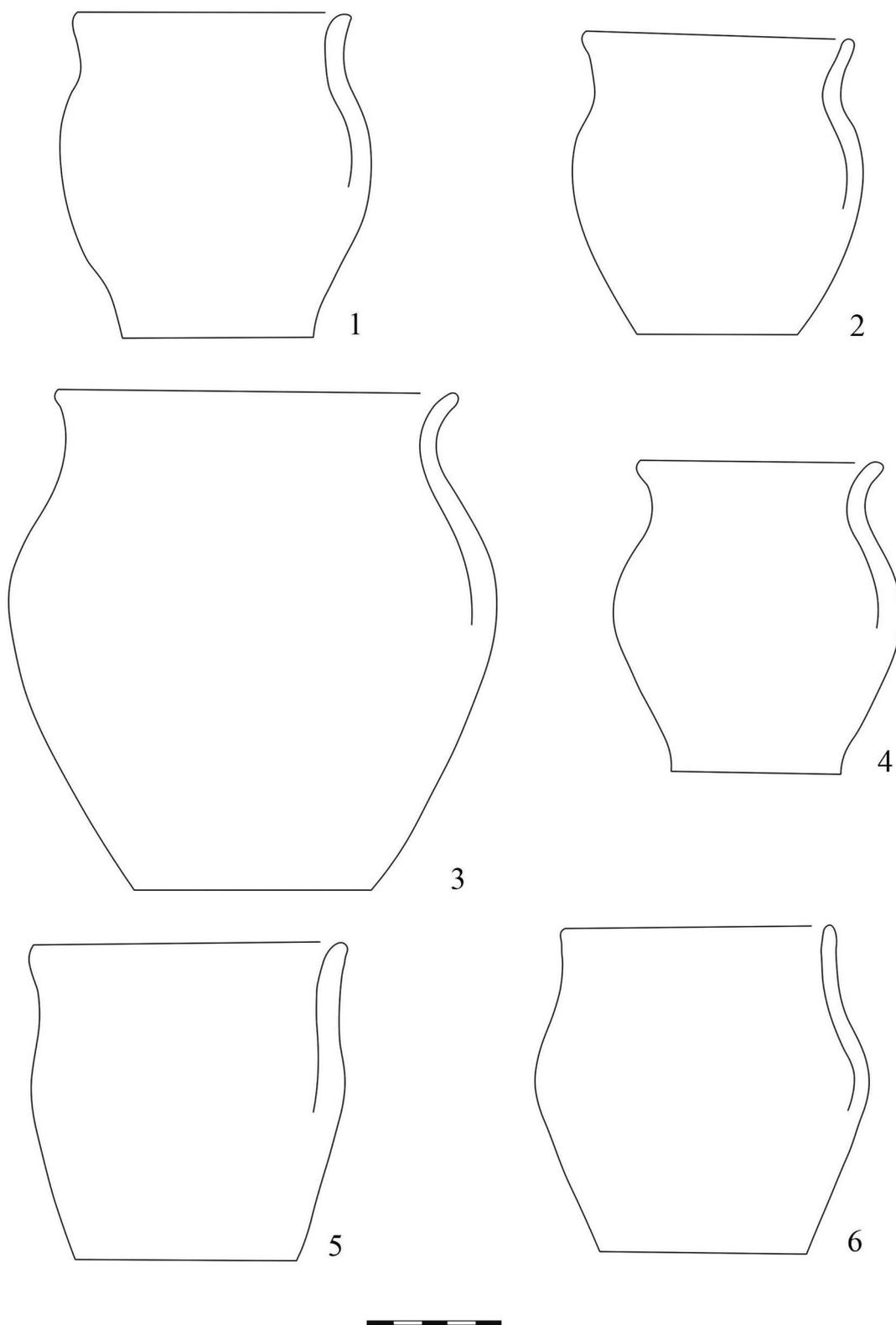


Fig. 32. Pots B II type

1 – Orlivka-Kartal VI/532; 2 – Biliaivka 2/19; 3 – Feștelița II 1/7; 4 – Brăviceni 7/13; 5 – Ocnîța 7/5; 6 – Olănești, barrow 13

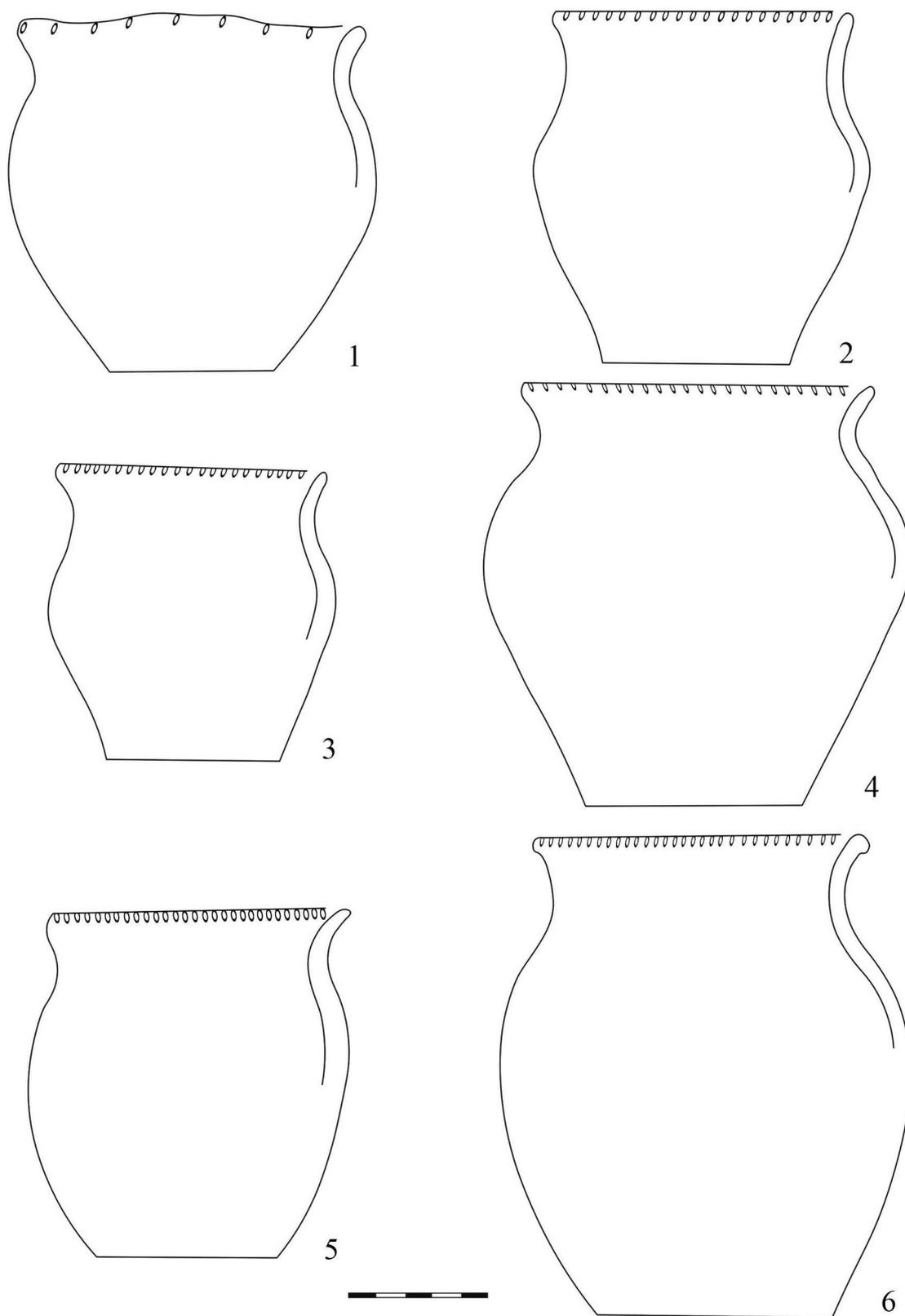


Fig. 33. Pots B II type

1 – Glyboke 1/11; 2 – Sărăteni 4/13; 3 – Gradeshka I 5/12; 4 – Grybivka 5/5;
 5 – Očnița 5/6; 6 – Severynivka 2/9

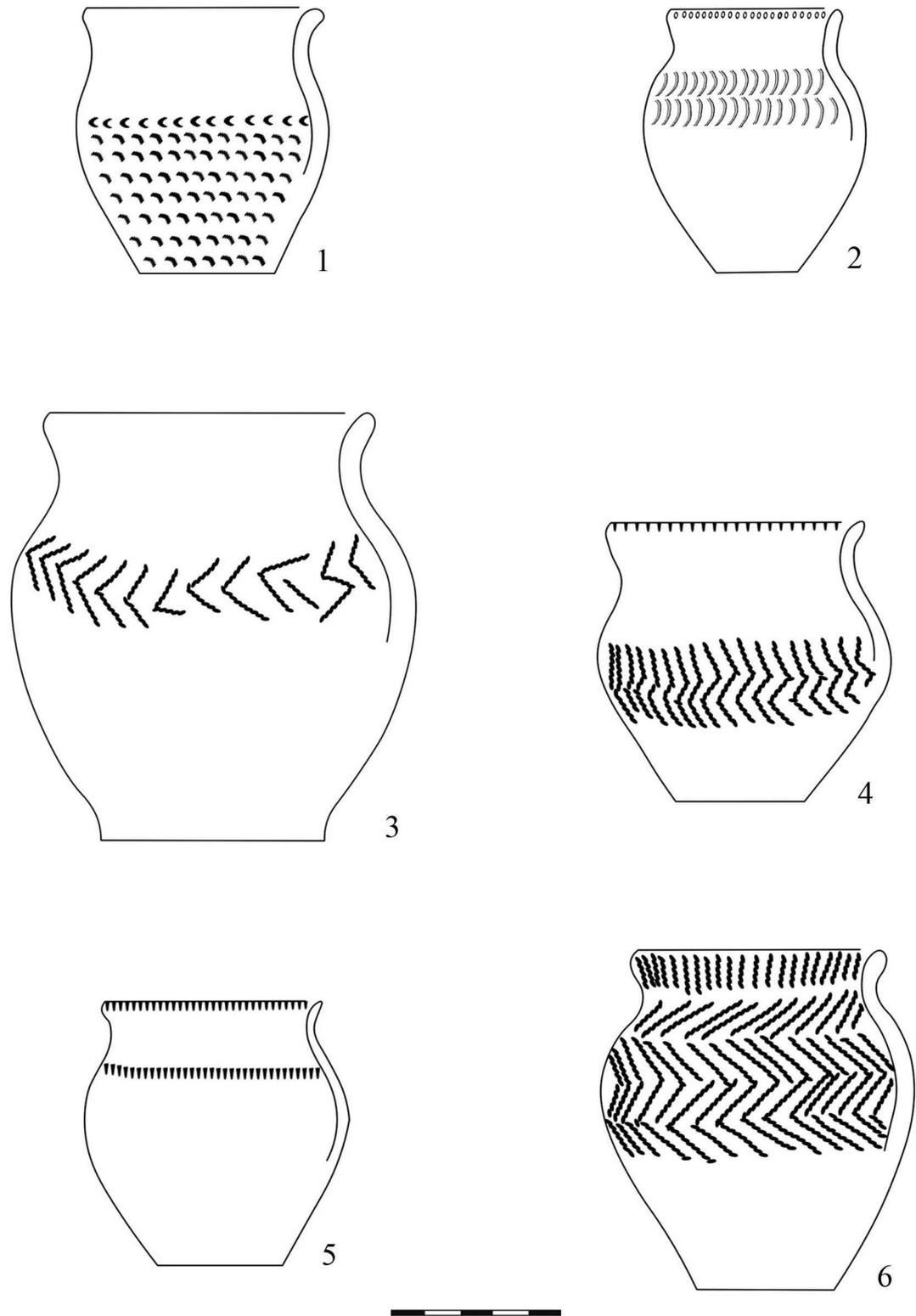


Fig. 34. Pots B II type

1 – Sărăteni 3/14; 2 – Sărăteni 2/5; 3 – Nerushay 9/56; 4 – Vladychen II 10/3;
 5 – Popeasca I 1/5; 6 – Kovalivka IV 1/13;

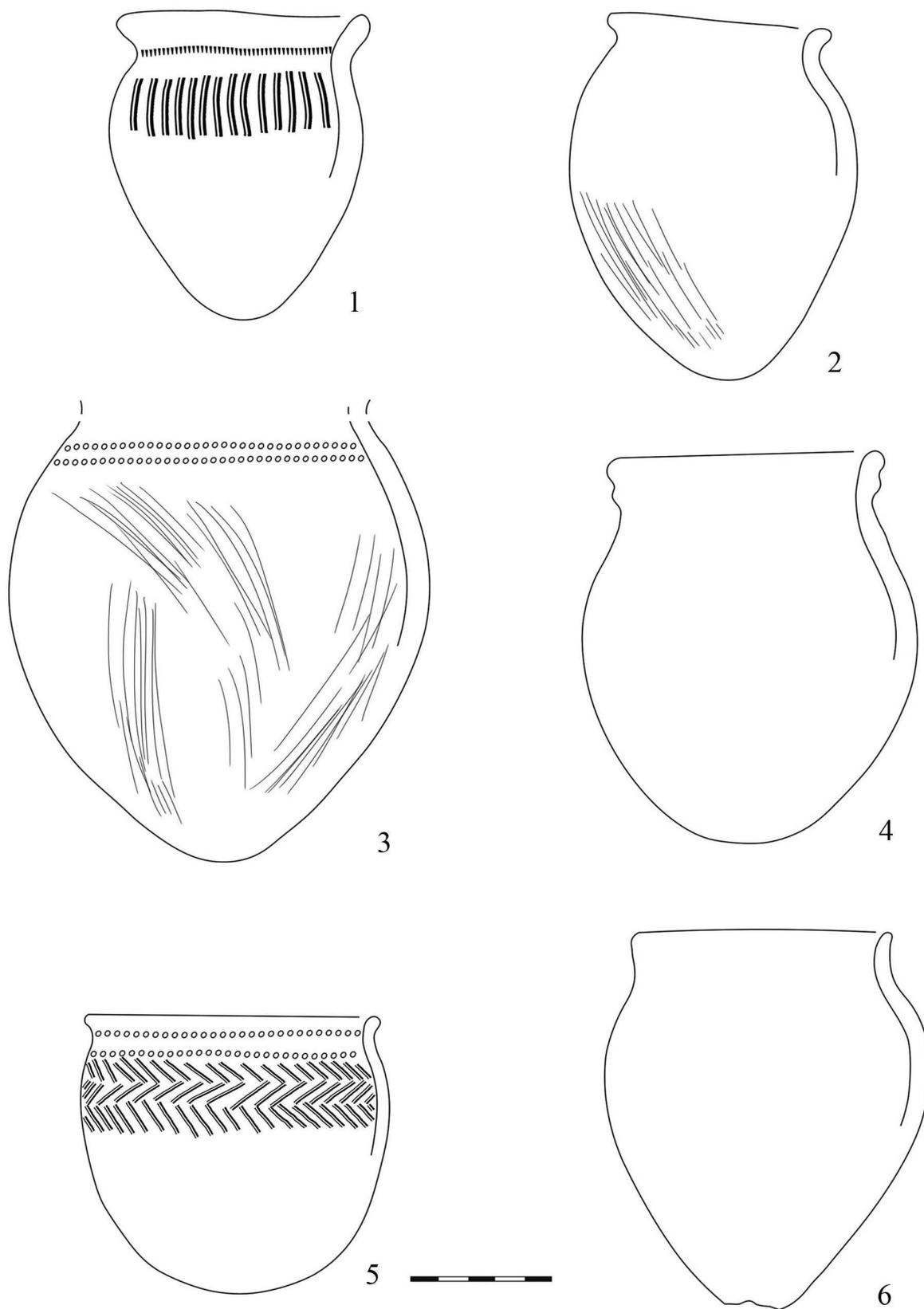


Fig. 35. Pots C I type

1 – Dalnik 3/1; 2 – Dalnik 3/3; 3 – Sergiivka 1/10; 4 – Gradiște 1/16; 5 –
Cuconeștii Vechi 12/9; 6 – Kovalivka III 1/9

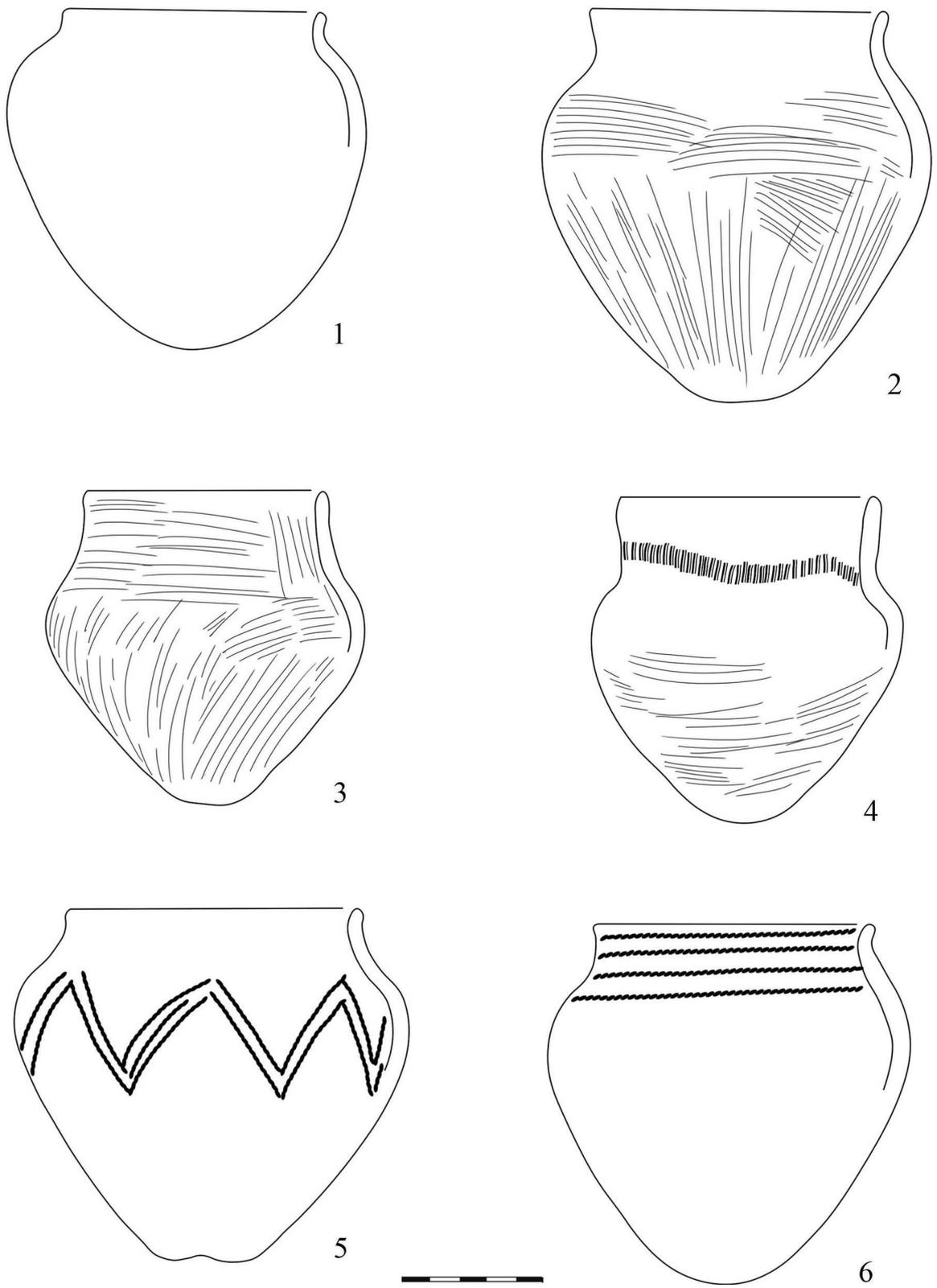


Fig. 36. Pots C I type

1–Kovalivka I 6/2; 2–Nechayane 2/9; 3 – Kovalivka I 1/11; 4 – Kovalivka II 6/11; 5 – Kovalivka II 1/10; 6 – Kovalivka VI 4/7

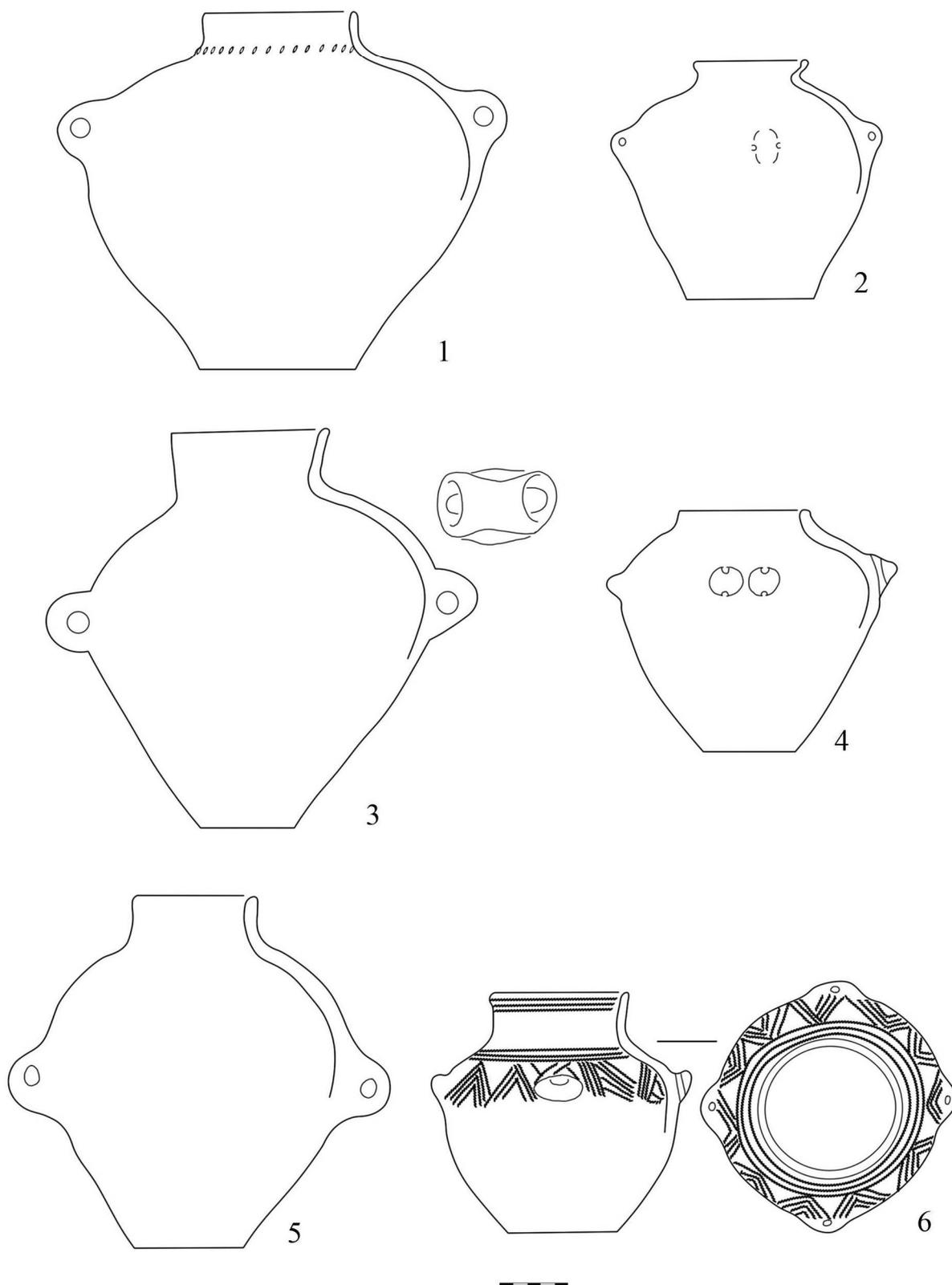


Fig. 37. Amphorae type AI

1 – Gura Galbenei; 2 – Tochile-Răducani; 3 – Gorodne, barrow 1; 4 – Hlinaia 110/3; 5 – Ostrivne 2/12; 6 – Gradeshka I, 5/11

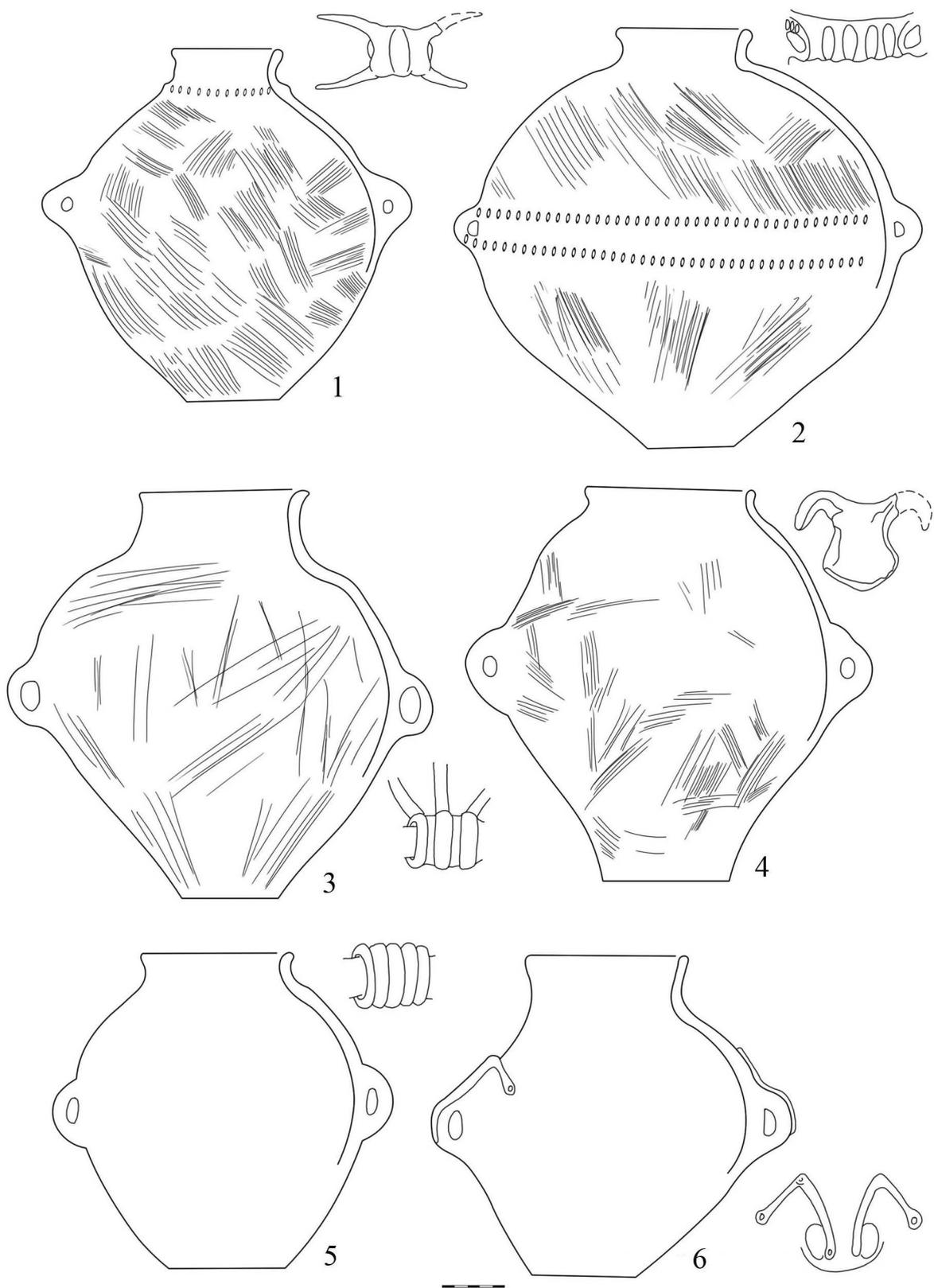


Fig. 38. Amphorae type A II

1 – Porogi 1/8; 2 – Porogi 2/6; 3 – Cazaclia 3/13; 4 – Porogi 3/4; 5 – Efymivka 10/7; 6 – Gradeshka I, 5/11

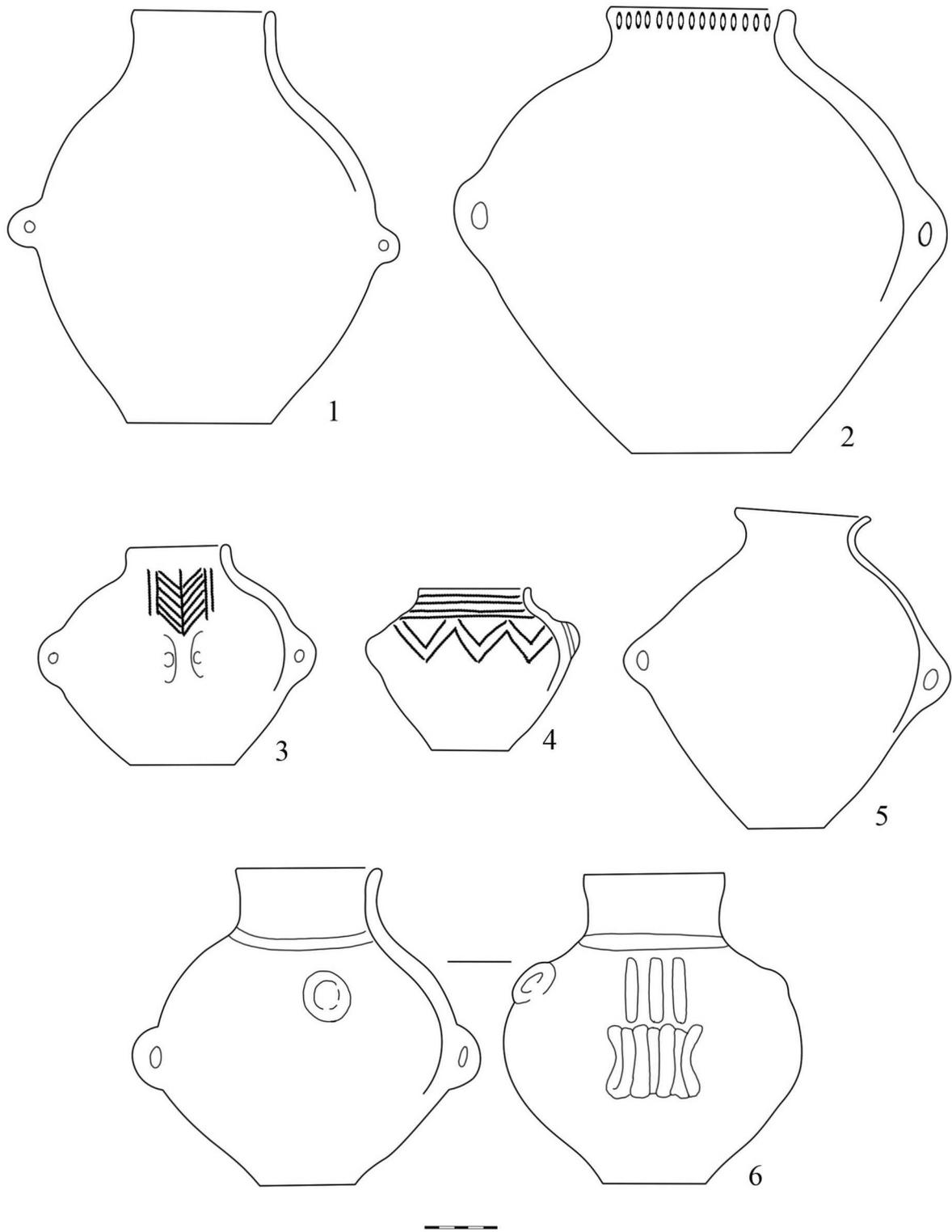


Fig. 39. Amphorae type A II

1 – Sărăteni 2/10; 2 – Căușeni 1/18; 3 – Olănești 14/1; 4– Bilolissia, barrow 1;
 5 – Bursuceni 1/19; 6 – Căușeni 1/4

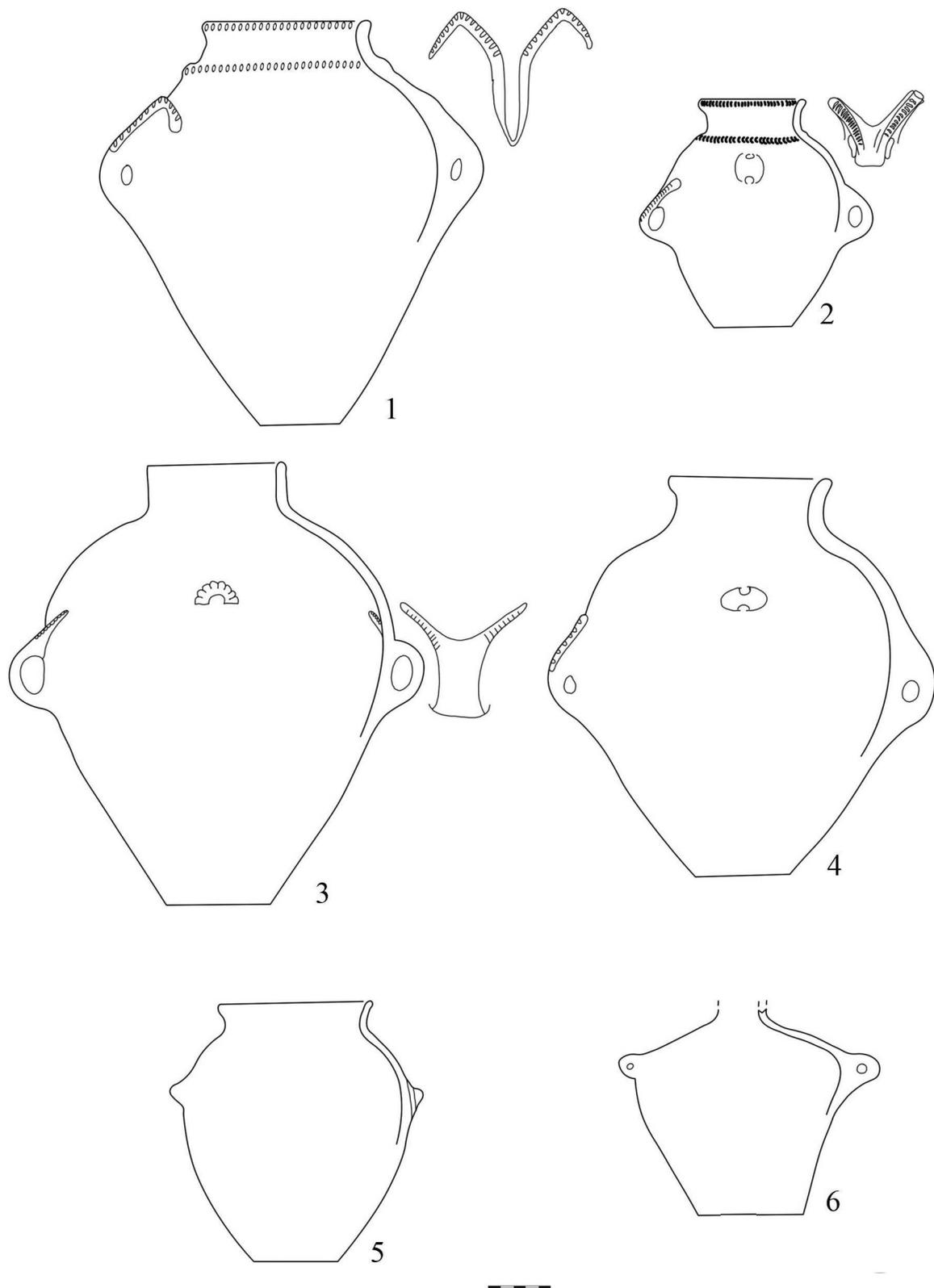


Fig. 40. Amphorae type B I

1 – Ocnița 6/18; 2 – Hlinaia “Sad” 1/15; 3 – Petrești II, 1/1; 4 – Ocnița 3/13;
 5 – Bădragii Vechi 3/1; 6 – Kurchi 1/6

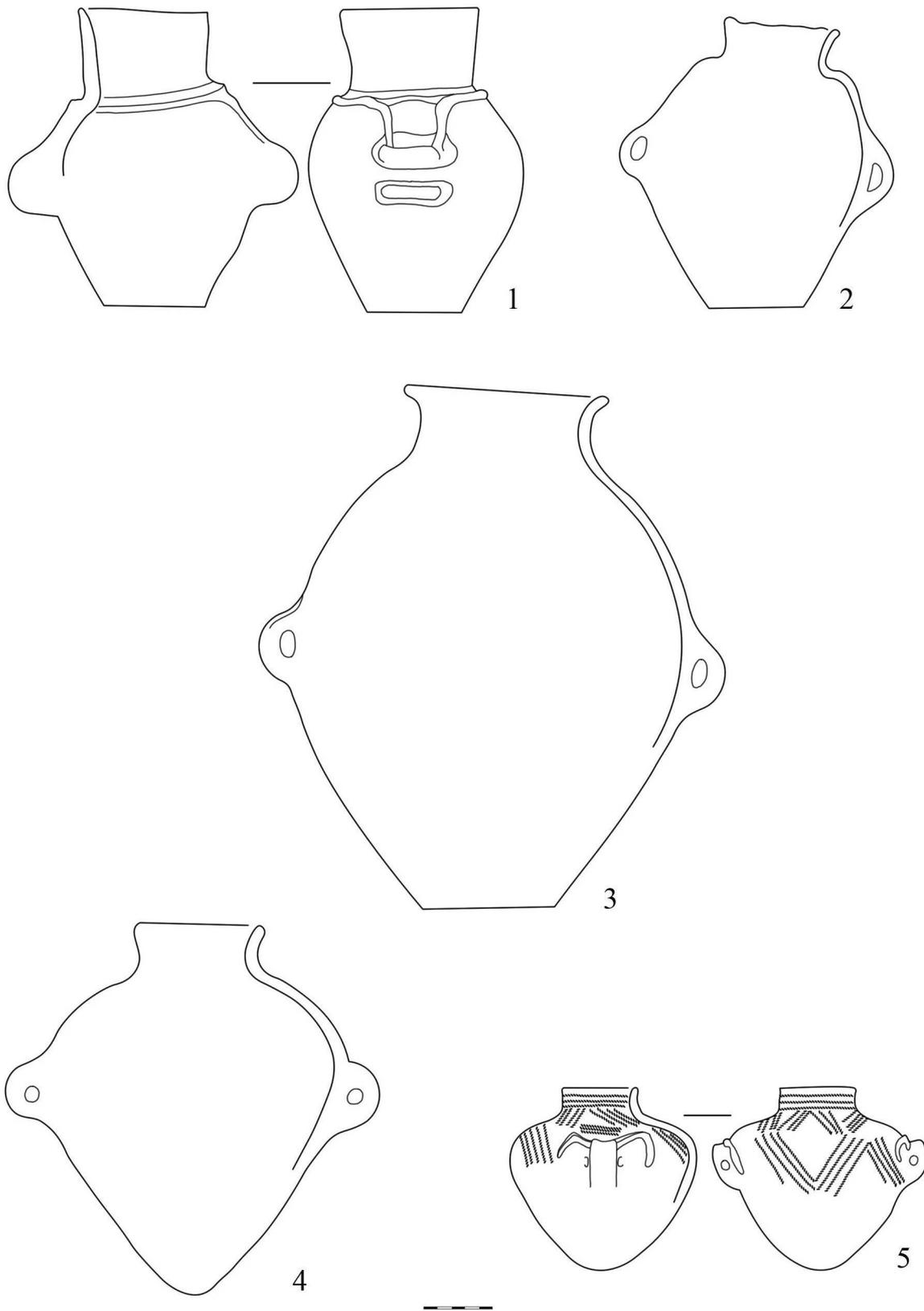


Fig. 41. Amphorae type B II and C

1 – Trapivka, barrow 1; 2 – Taraclia 10/19; 3 – Bursuceni 1/14; 4 – Yasski 5/26;
5 – Tuzly 2/5

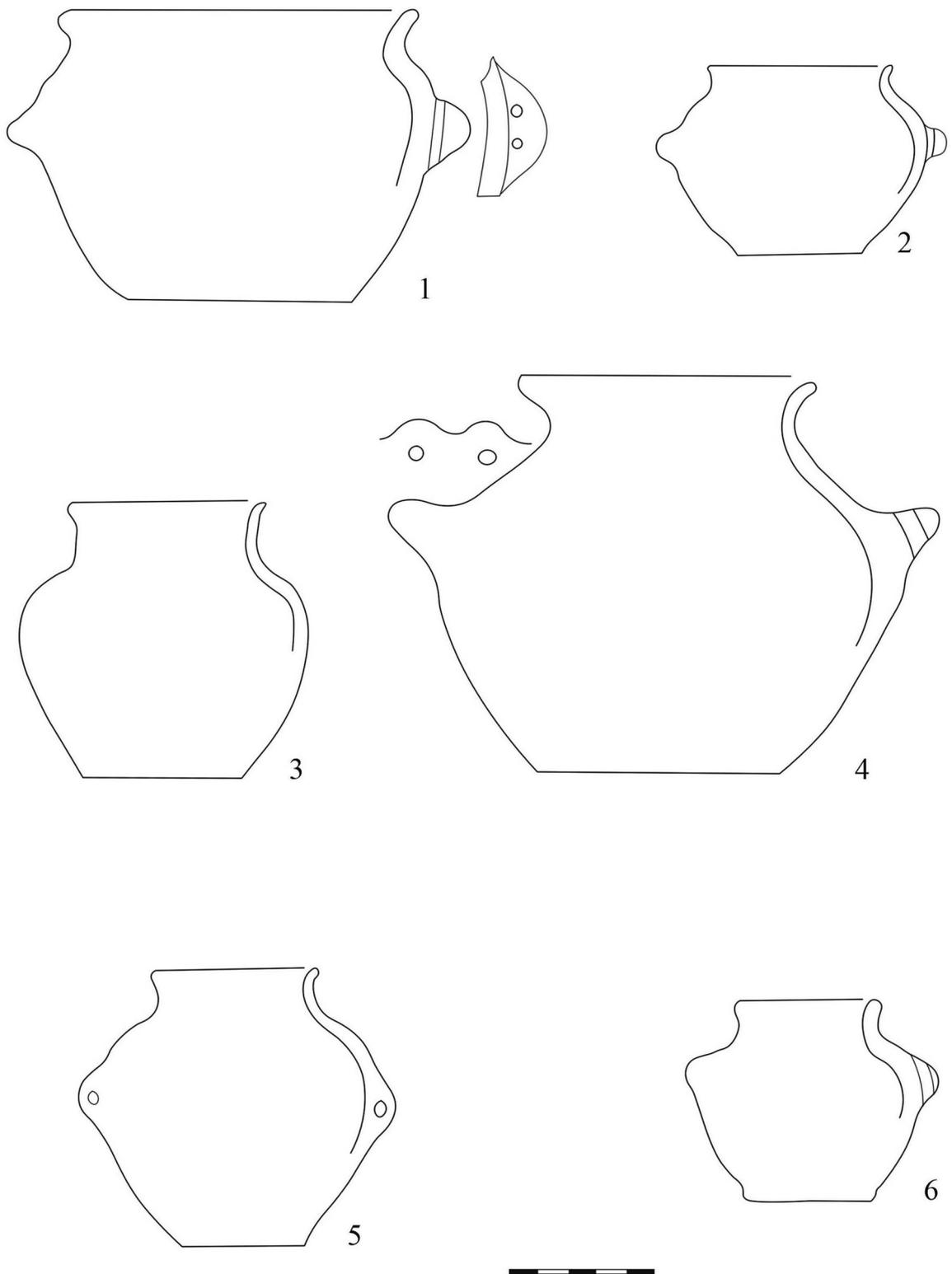


Fig. 42. Amphora-shaped vessels A I type

1 – Liman 3A/17; 2 – Novogrygorivka, “Liubasha” barrow/2; 3 – Nagirne 15/7; 4 – Prymorske 1/13; 5 – Iabloana 1/1; 6 – Rogojeni 1/2

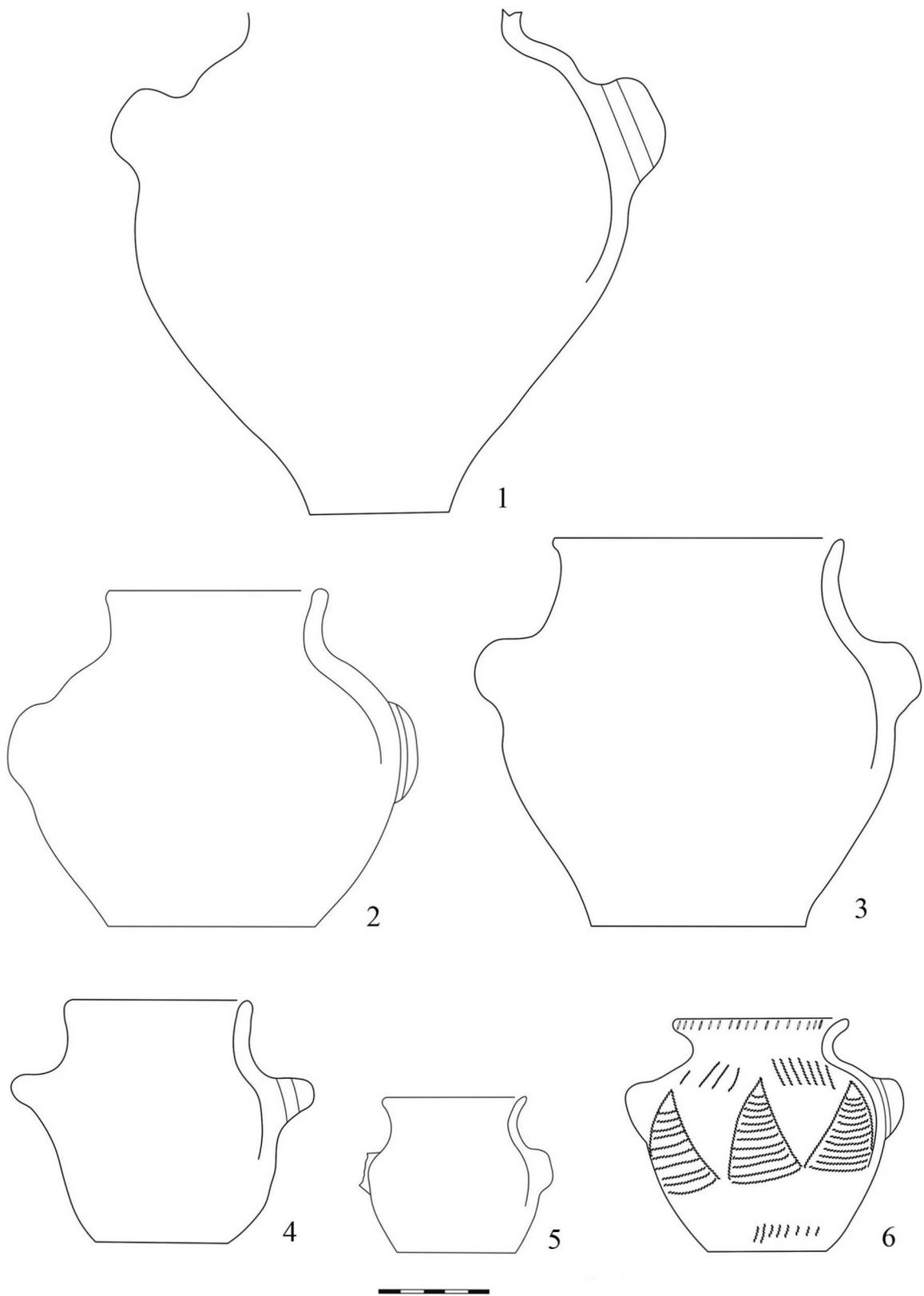


Fig. 43. Amphora-shaped vessels A I type

1 –Bădragii Vechi 29/14; 2 – Semenivka 14/5; 3 – Vladychen II 9/13; 4 – Ursoaia barrow 1; 5 – Vladychen I 1/2; 6 – Nicolscoe 16/16

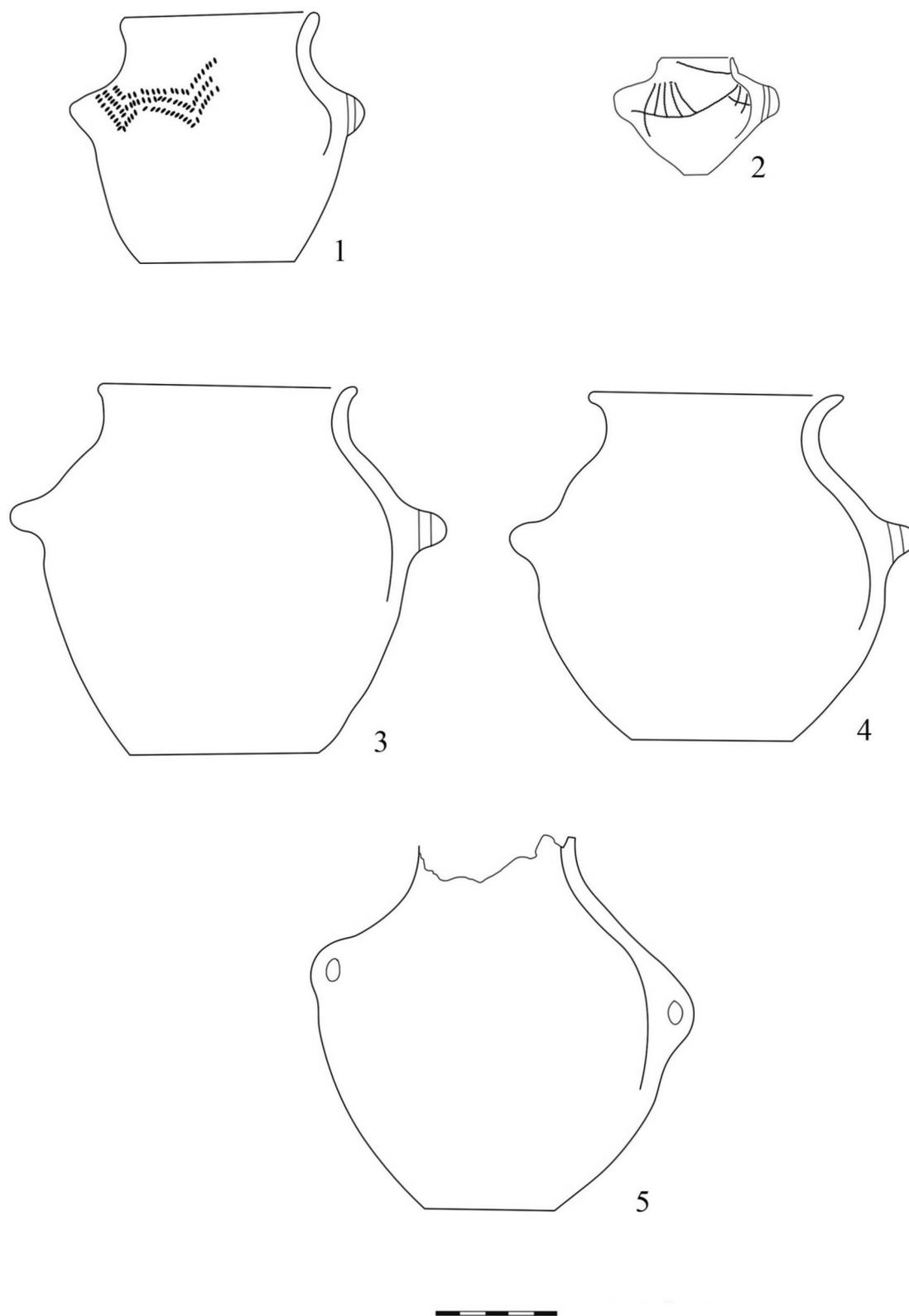


Fig. 44. Amphora-shaped vessels A i and A II types

1 – Kubey 1/16; 2 –Kovalivka VII 4/2; 3 – Revova 3/7; 4 – Kholodna Balka 1/7; 5 – Kholmske 1/21

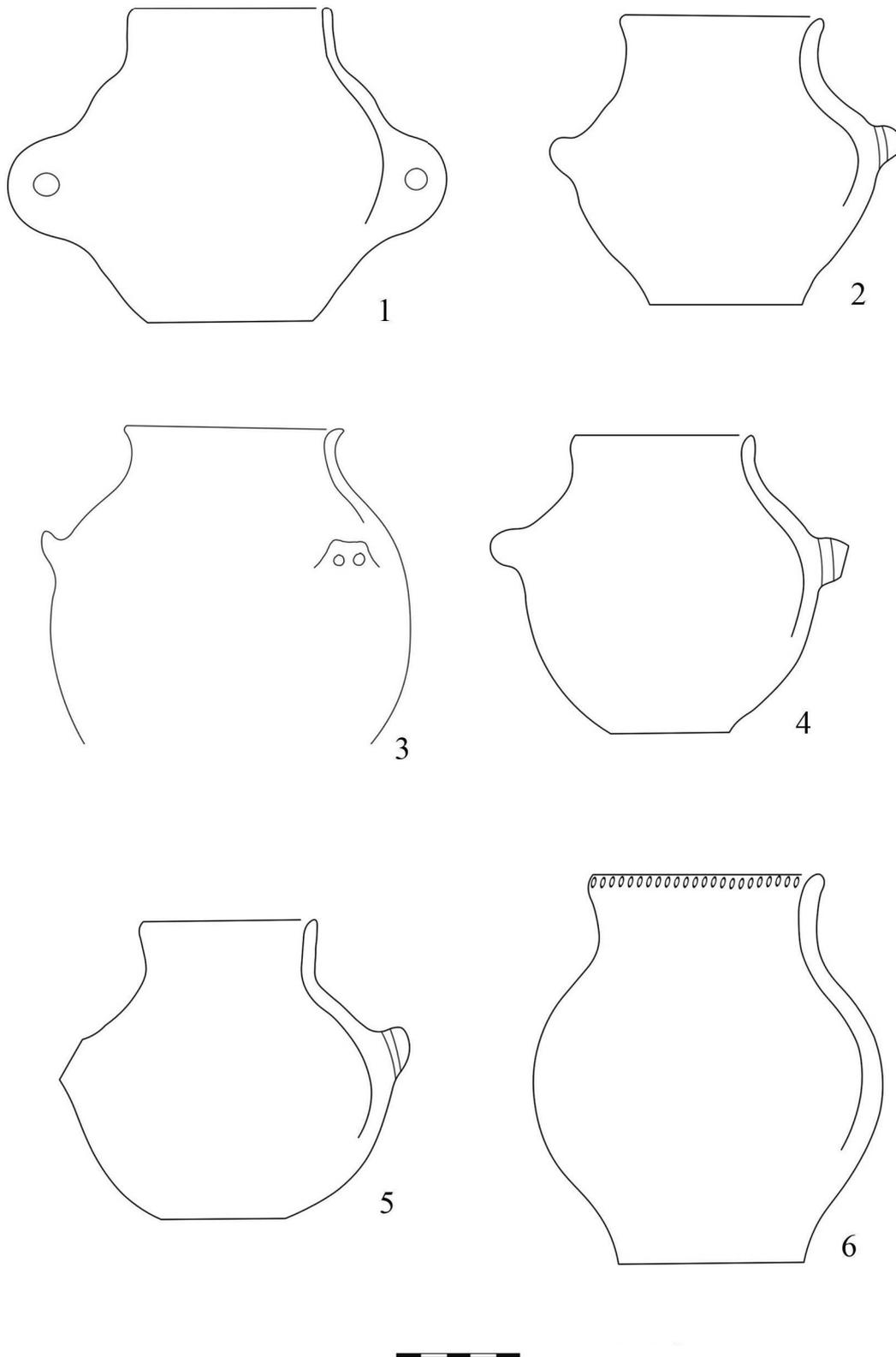


Fig. 45. Amphora-shaped vessels A II type

1 – Găvănoasa 1/5; 2 – Vyshneve 52/40; 3 – Chervonyi Yar III 2/2; 4 – Rogojeni 1/1; 5 – Kovalivka I 2/4; 6 – Efymivka 10/6

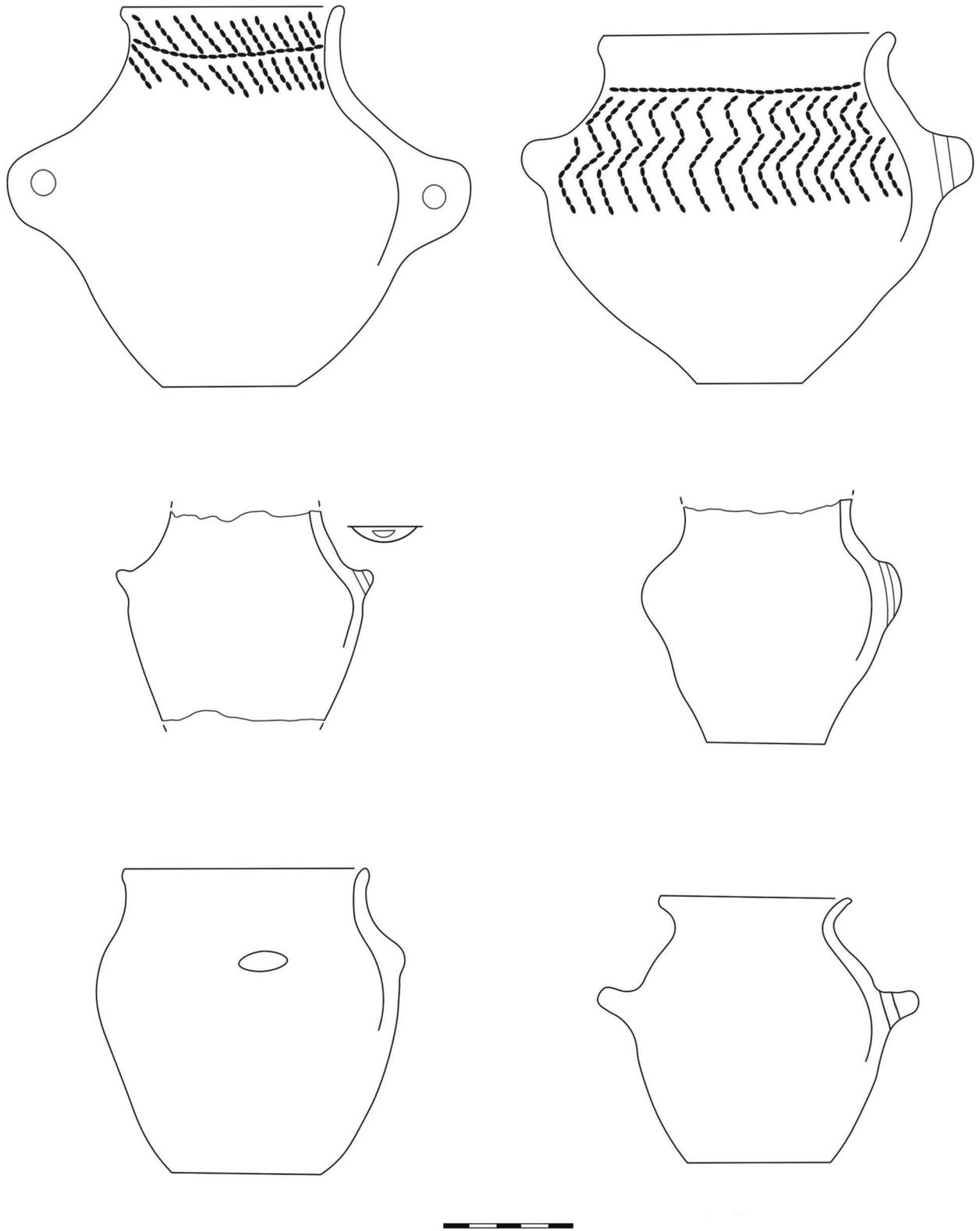


Fig. 46. Amphora-shaped vessels A II and B I types

1 – Gradeshka I 5/1; 2 – Kholmske 2/13; 3 – Plavni 10/5; 4 – Svetlîi barrow 3;
 5 – Mîndreşti 1/1; 6 – Mayaky IV 9/1

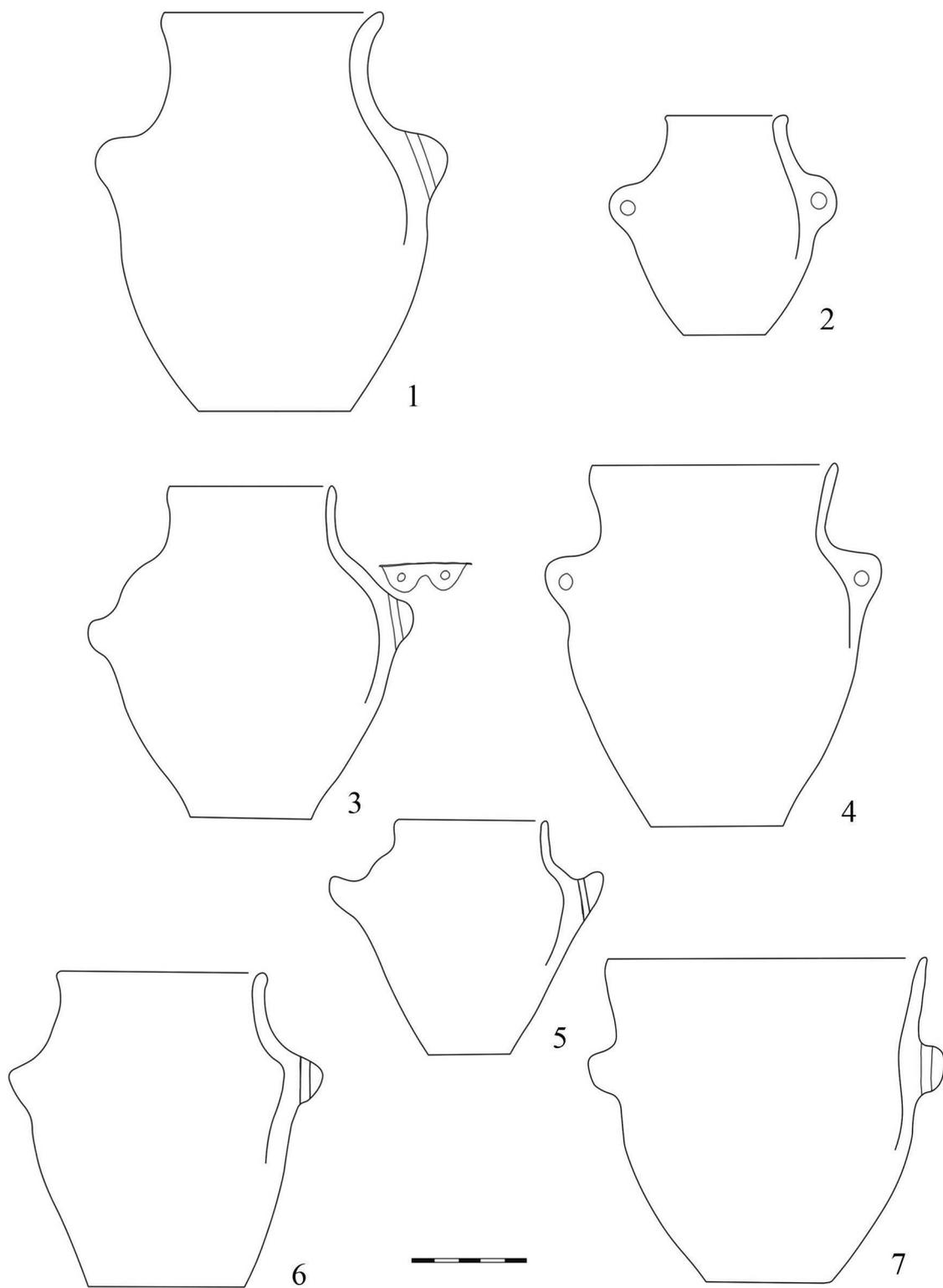


Fig. 47. Amphora-shaped vessels B I type

1 – Bolgrad 4/2; 2 Bolgrad 3/1; 3 – Taraclia I 1/13; 4 – Plavni 12/9; 5 –
 Gradeshka I 5/2; 6 – Kamenka 29/9; 7 – Novokamyanka 1/13

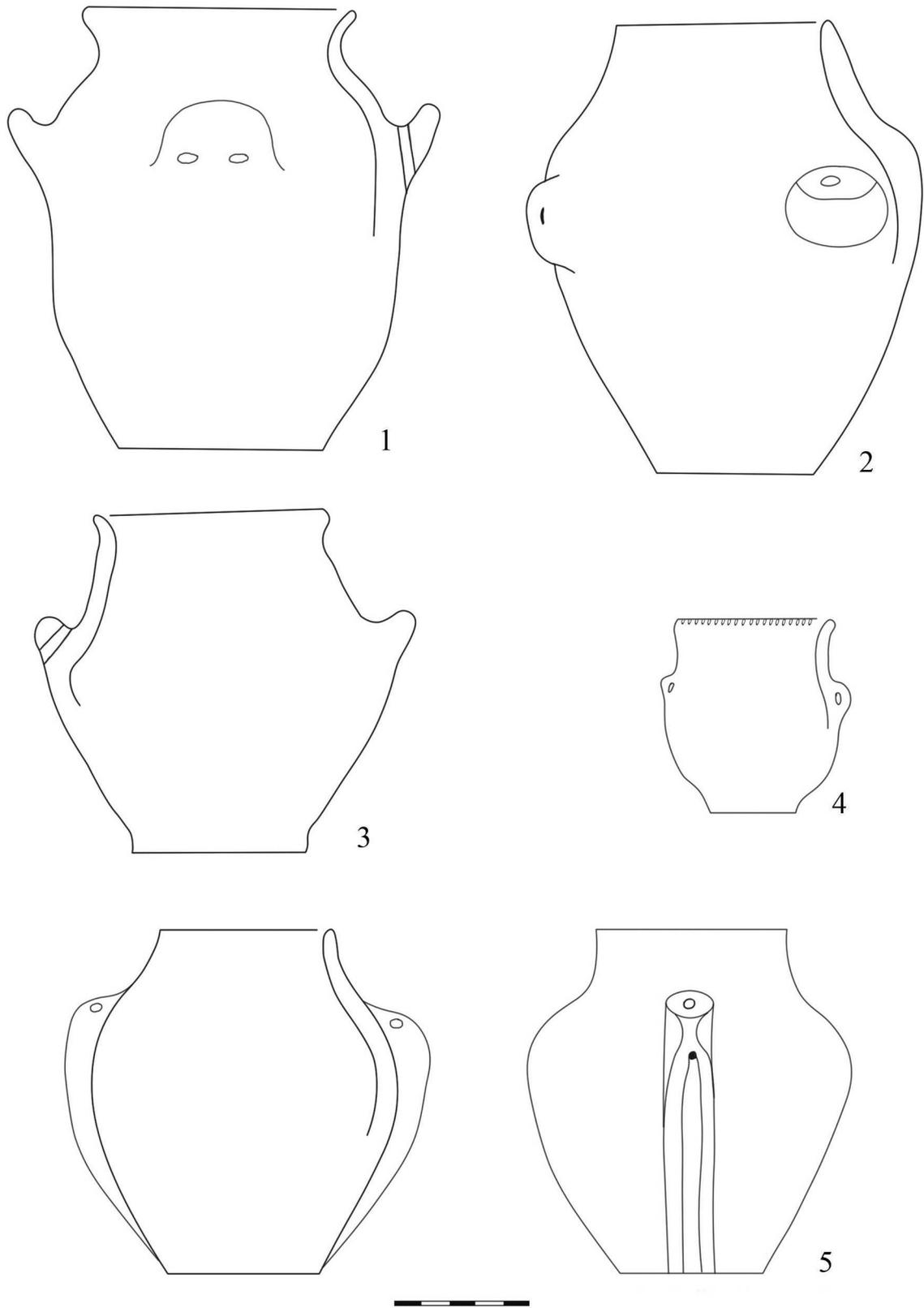


Fig. 48. Amphora-shaped vessels B I type

1 – Dyvizia II 1/7; 2 – Velykodolynske 1/13; 3 – Semenivka 19/4; 4 –
 Bashtanivka 7/12; 5 – Bolgrad 5/6

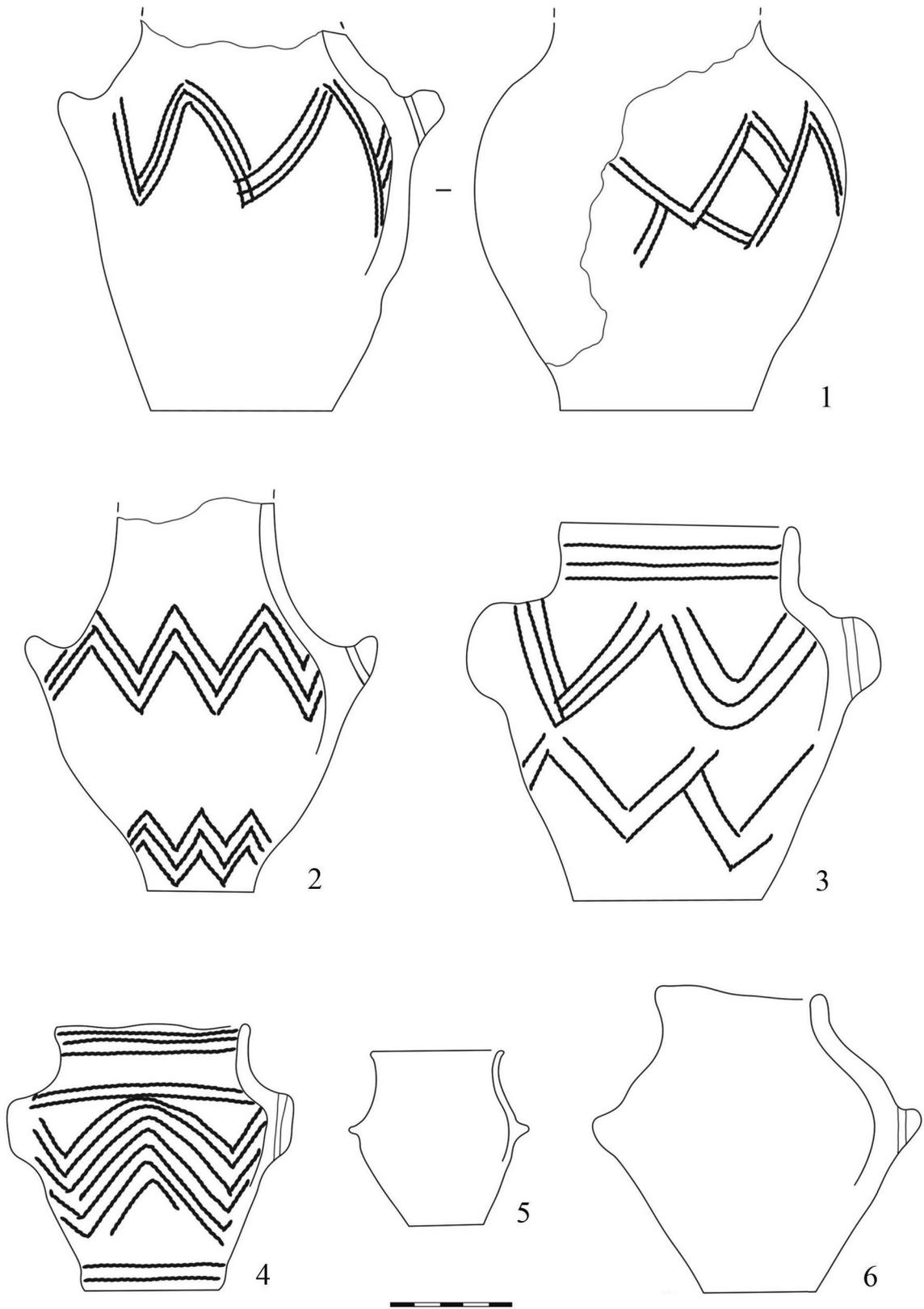


Fig. 49. Amphora-shaped vessels B I and B II types

1 – Vyshneve 11/4; 2 – Alkalia 2/ditch; 3 – Plavni 5/3; 4 – Olănești 1/15;
 5 – Olănești 1/27; 6 – Semenivka 2/6

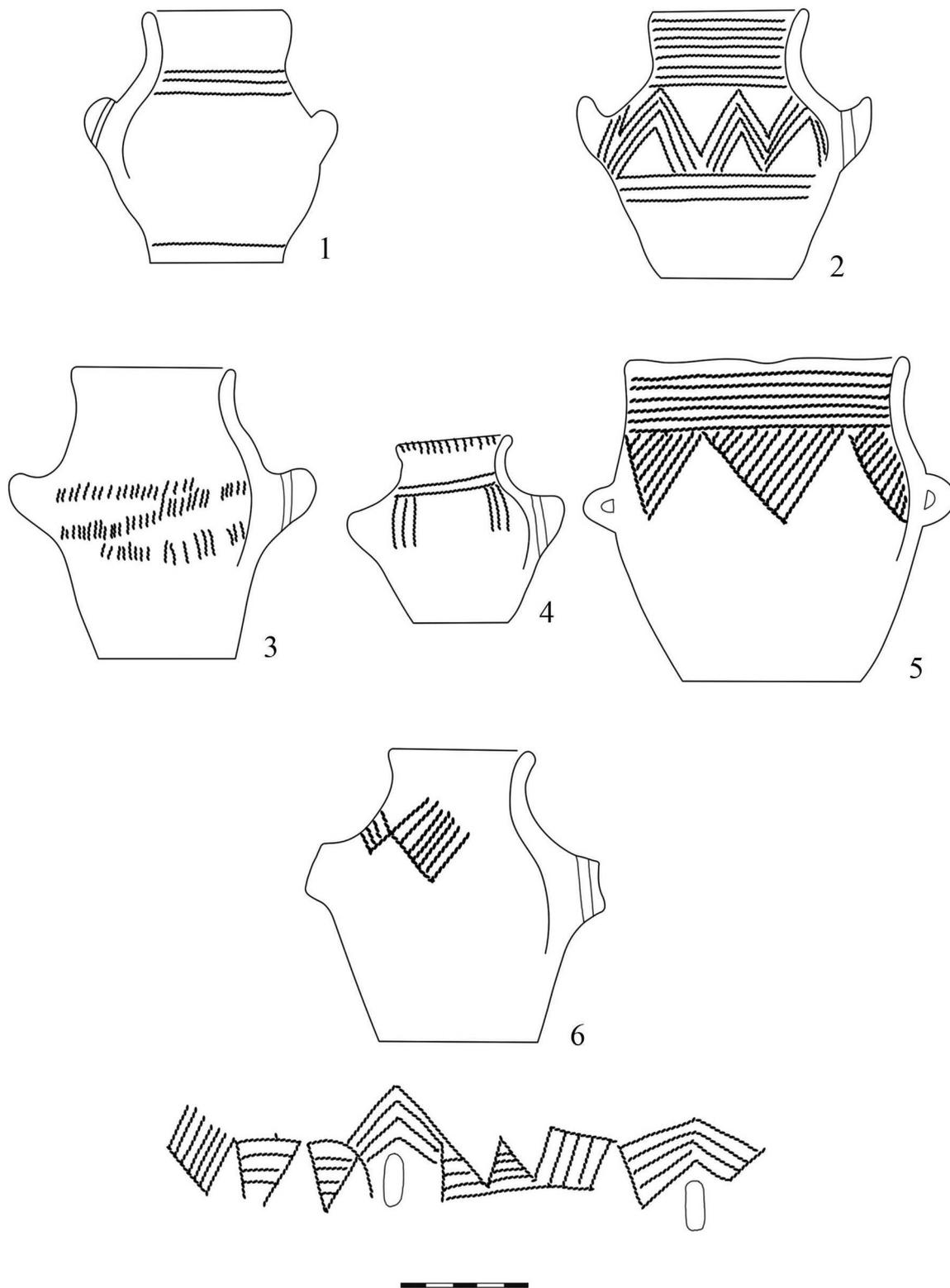


Fig. 50. Amphora-shaped vessels B II type

1 – Semenivka 2/2; 2 – Mykhaylivka 3/6; 3 – Semenivka 19/5; 4 – Hadjillar 2/14; 5 – Purcari 1/28; 6 – Prymorske barrow 1

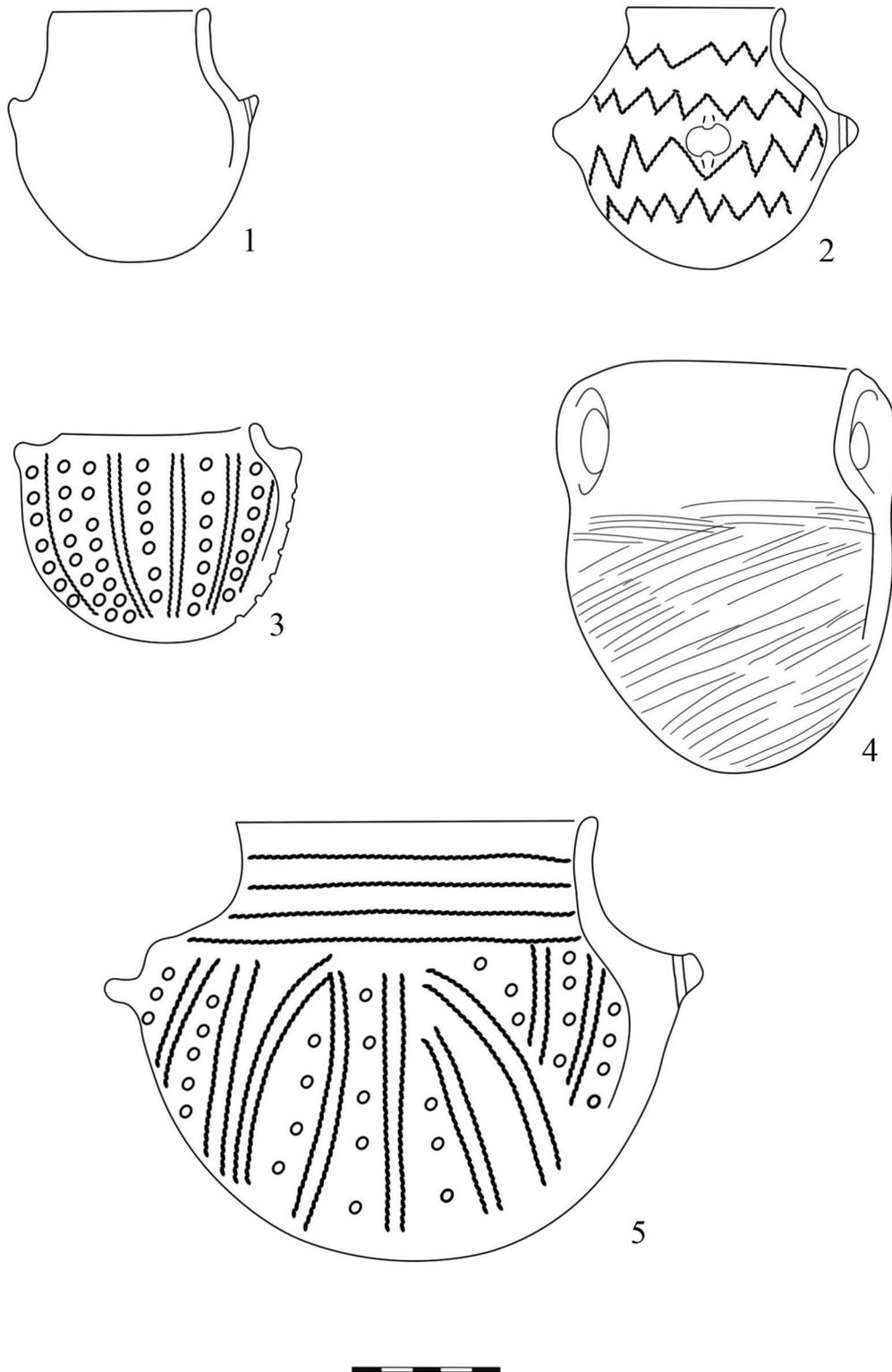


Fig. 51. Amphora-shaped vessels C type

1 – Mologa 2/34; 2 – Baranovo 1/9; 3 – Olănești 13/2; 4 – Kovalivka VIII 1/24;
 5 – Novokamyanka 1/5

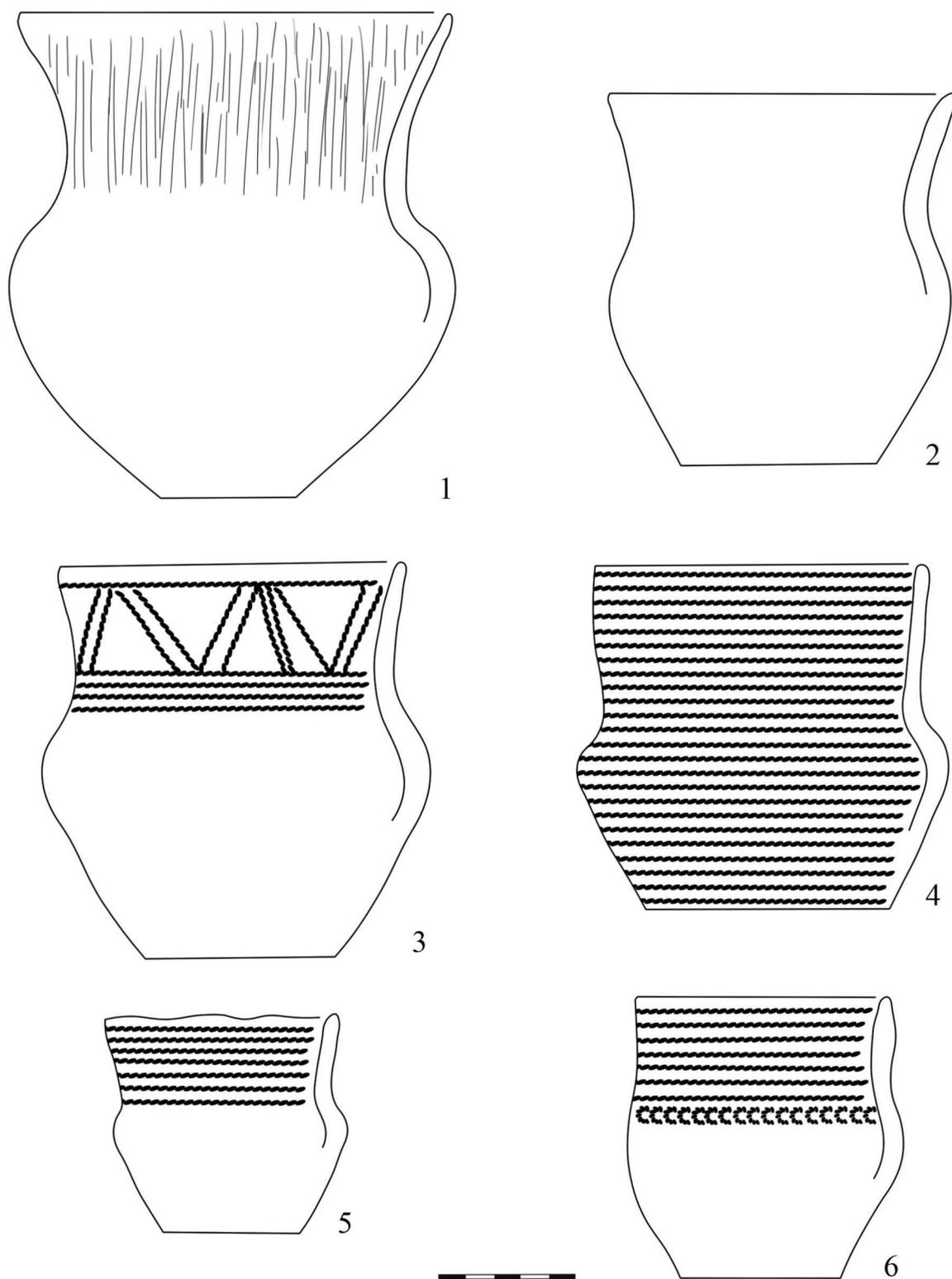


Fig. 52. Beakers A I type

1 – Khadzhider 2/3; 2 – Gorodne III 1/16; 3 – Gävänoasa 8/2; 4 – Kamyamka; barrow 1; 5 – Butor 9/3; 6 – Trapivka 6/20

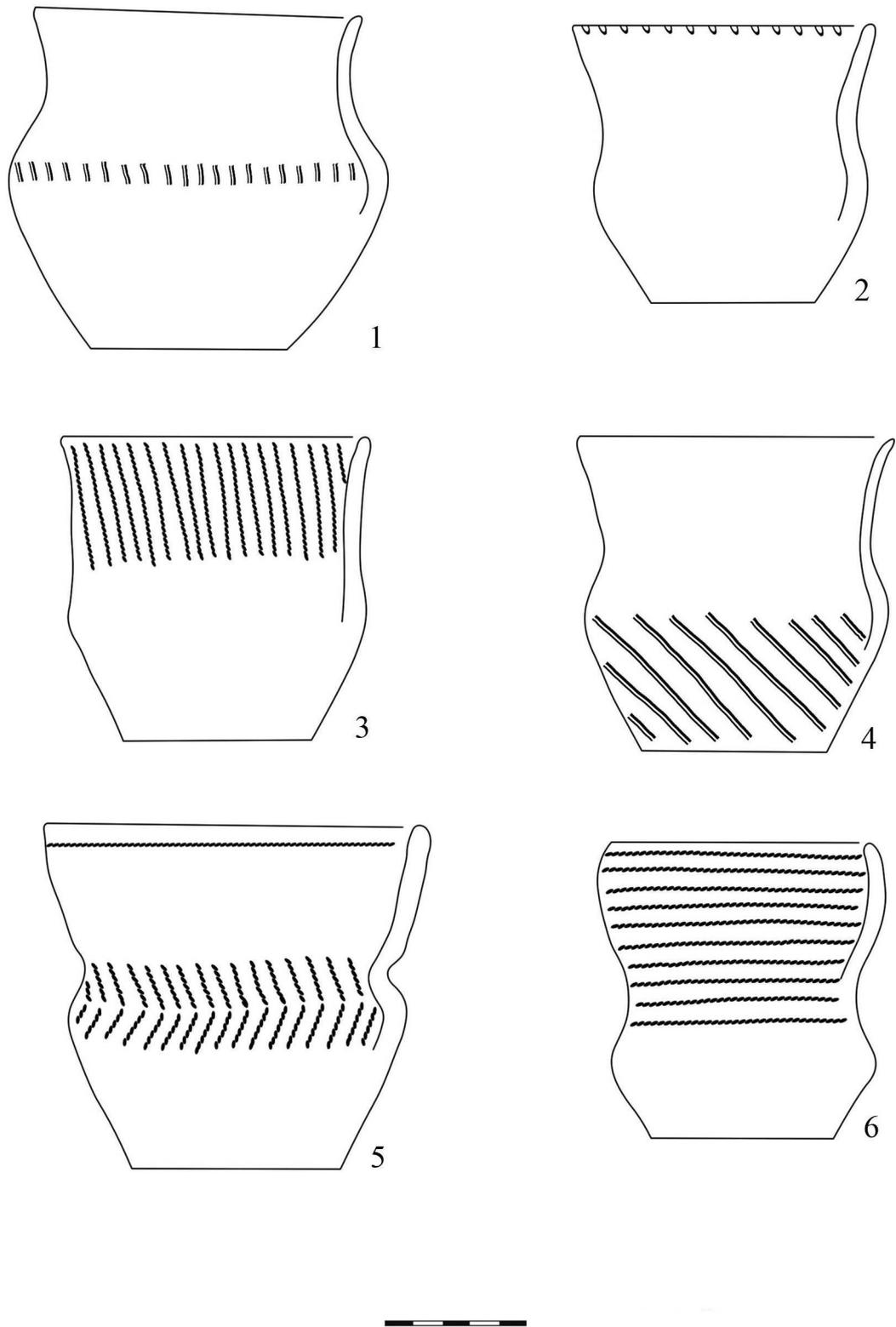


Fig. 53. Beakers A I type

1 – Mykolaivka 8/10; 2 – Gorodne II 1/14; 3 – Mresnota Mogyla 2/2; 4 –
 Parcani 87/1; 5 – Dyvizia II 2/5; 6 – Myrne 1/12

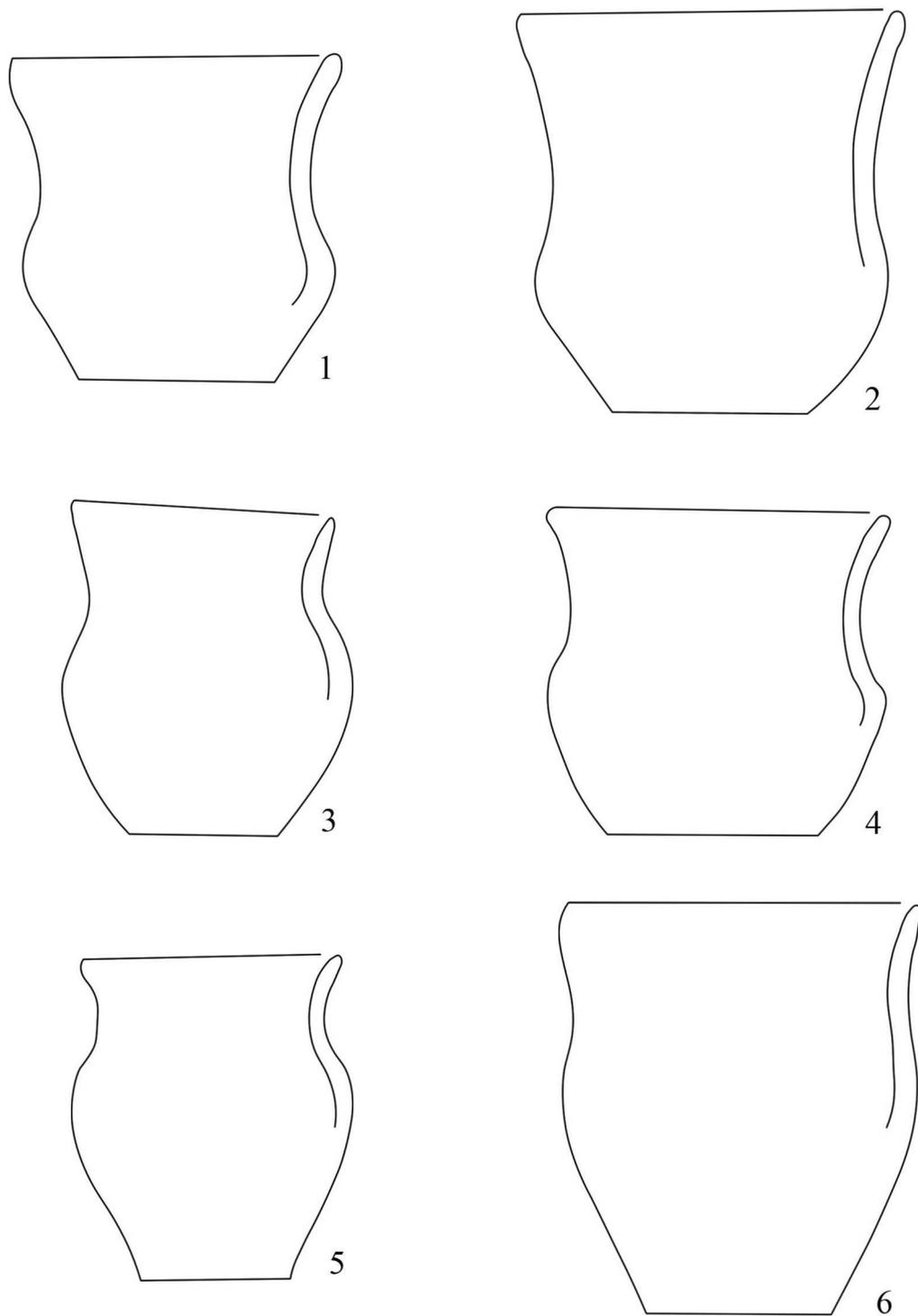


Fig. 54. Beakers A II and B I types

1 – Kholmske 1/16; 2 – Glyboke 2/8; 3 – Trapivka 10/6; 4 – Purcari 1/23;
5 – Olănești 1/3; 6 – Plavni 8/26

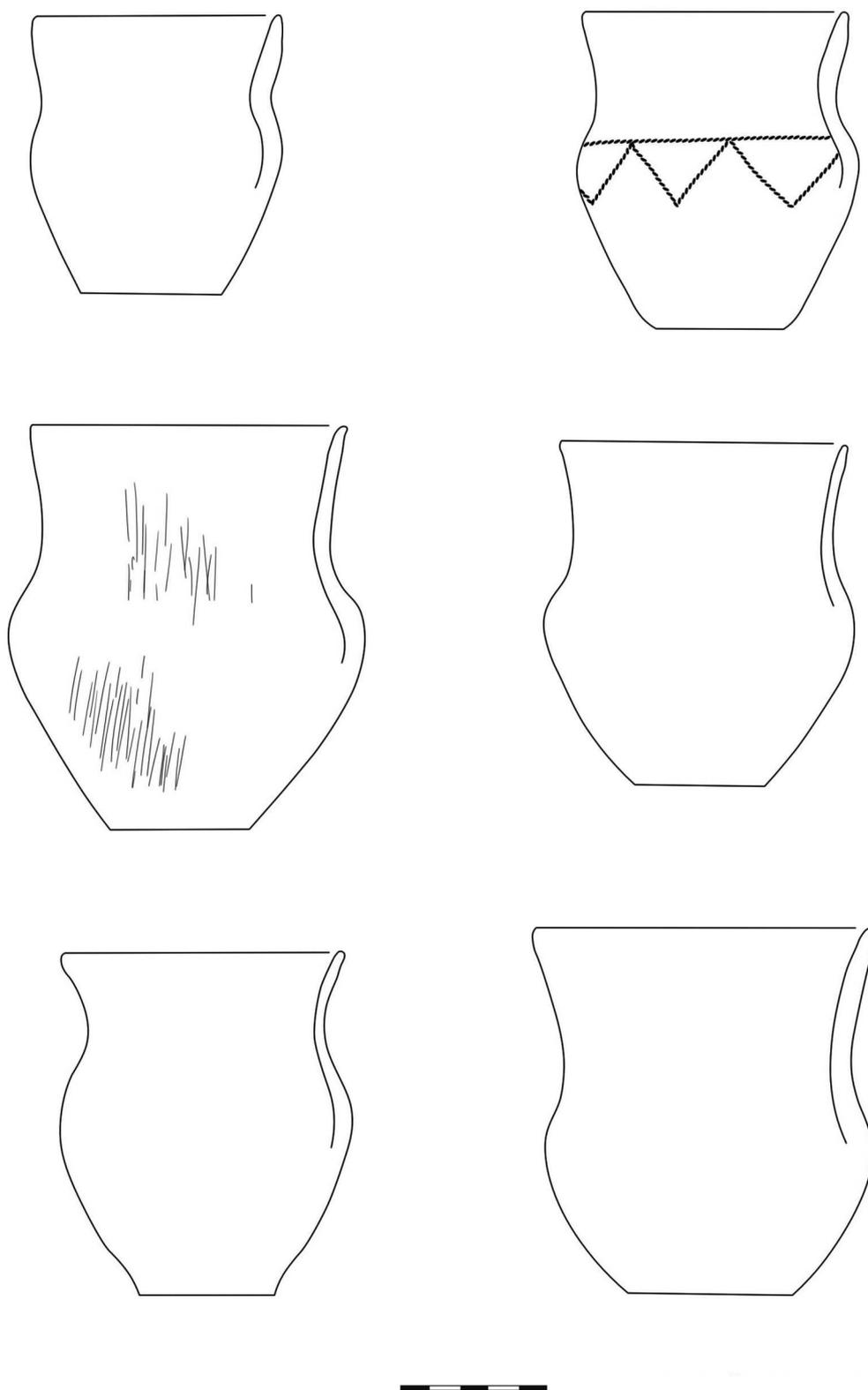


Fig. 55. Beakers B I type

1 – Hlinaia “Sad” 1/25; 2 – Hlinaia “Dot” 1/6; 3 – Yasski 5/24; 4 – Chervonyi Yar, barrow 2; 5 – Alkalia 34/7; 6 – Biliaivka 1/32

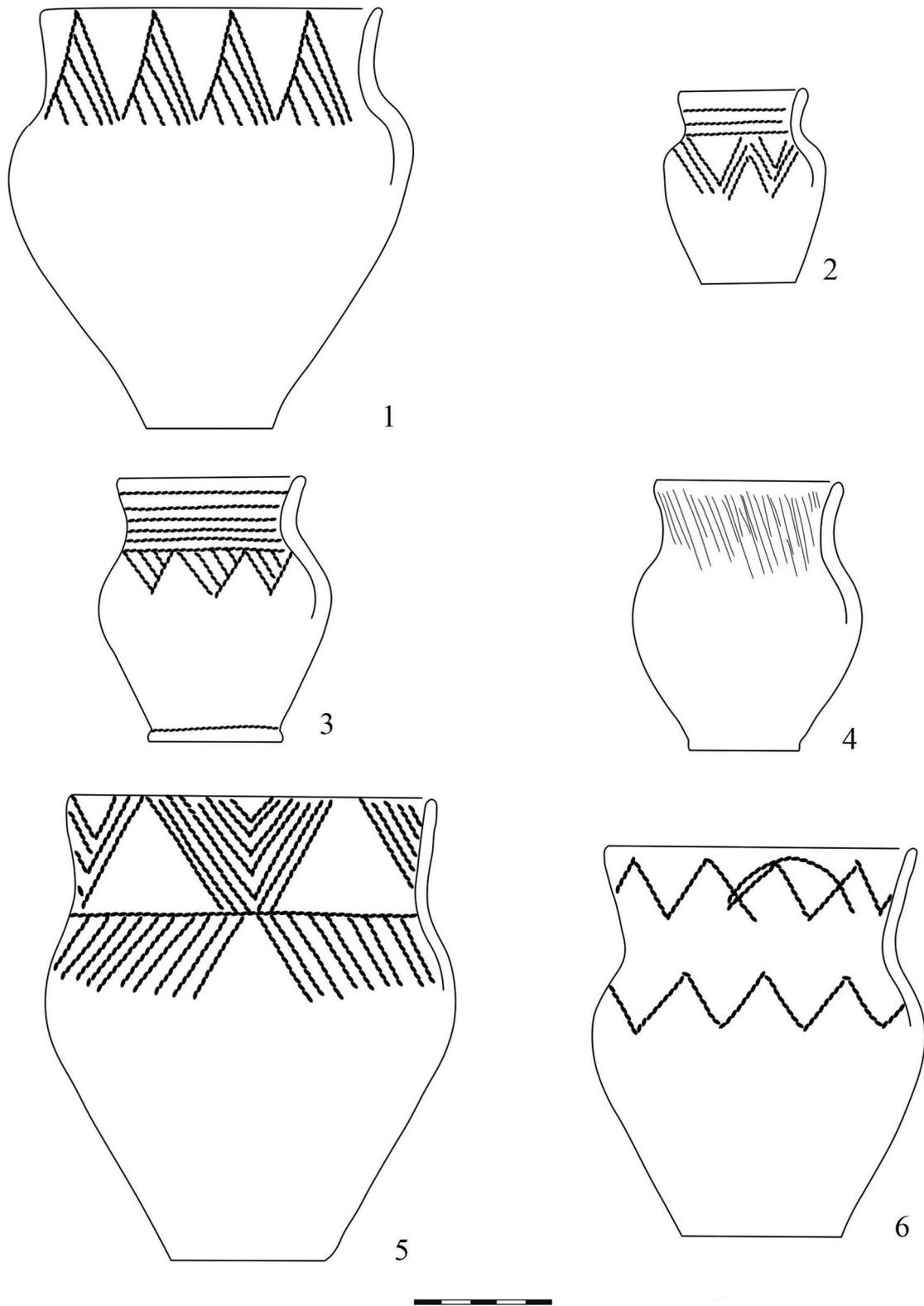


Fig. 56. Beakers B I type

1 – Cazaclia 5a/1; 2 – Mayaky III 2/13; 3 – Pererîta 2/1; 4 – Plavni III 2/2;
 5 – Olănești 15/4; 6 – Olănești 5/5

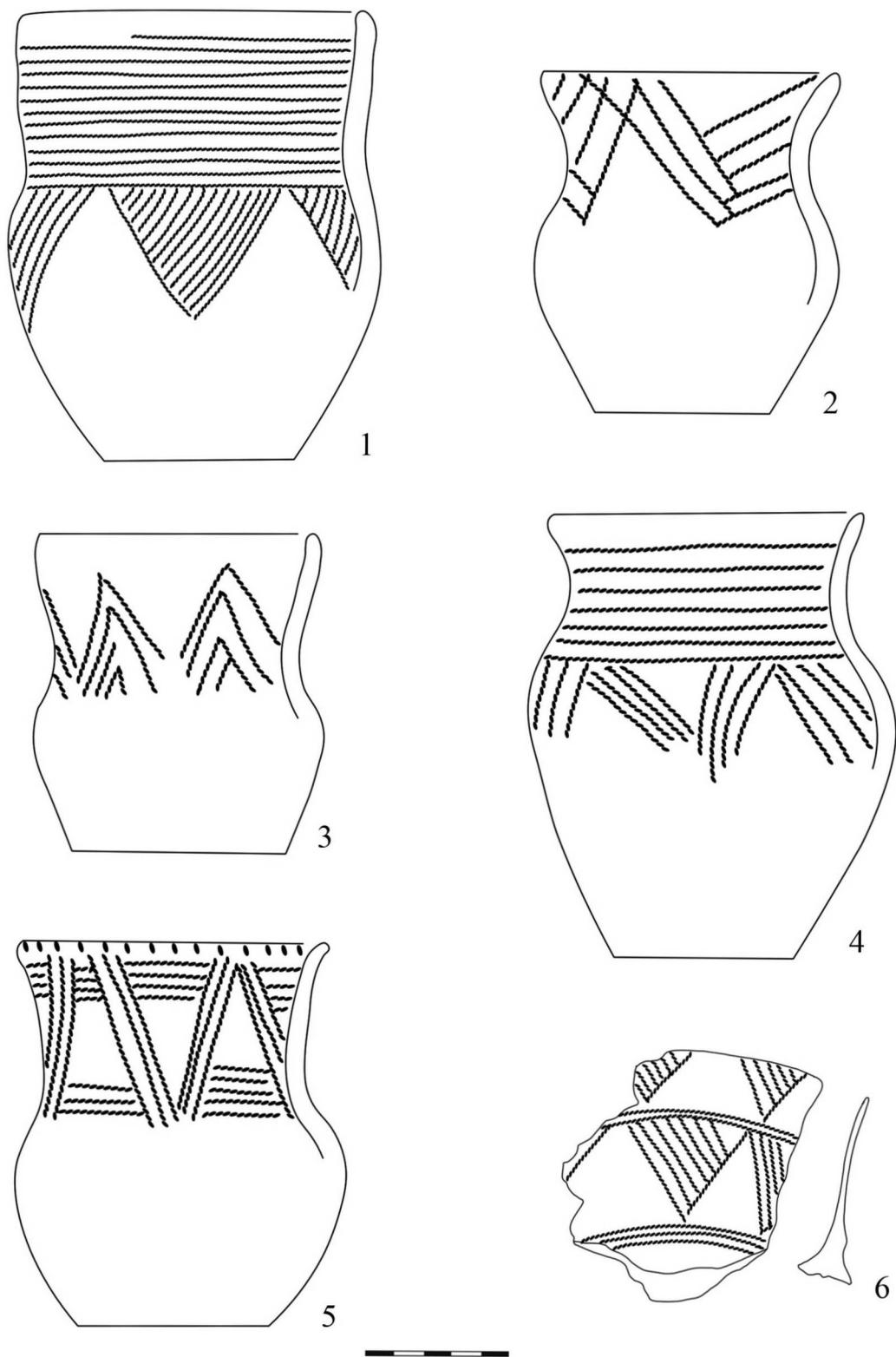


Fig. 57. Beakers B I and B II types

1 – Kholodna Balka 1/13; 2 – Efymivka 9/17; 3 – Trapivka 4/5; 4 – Kurchi 3/9;
 5 – Bashtanivka 7/12; 6 – Mologa 2/3 (neck)

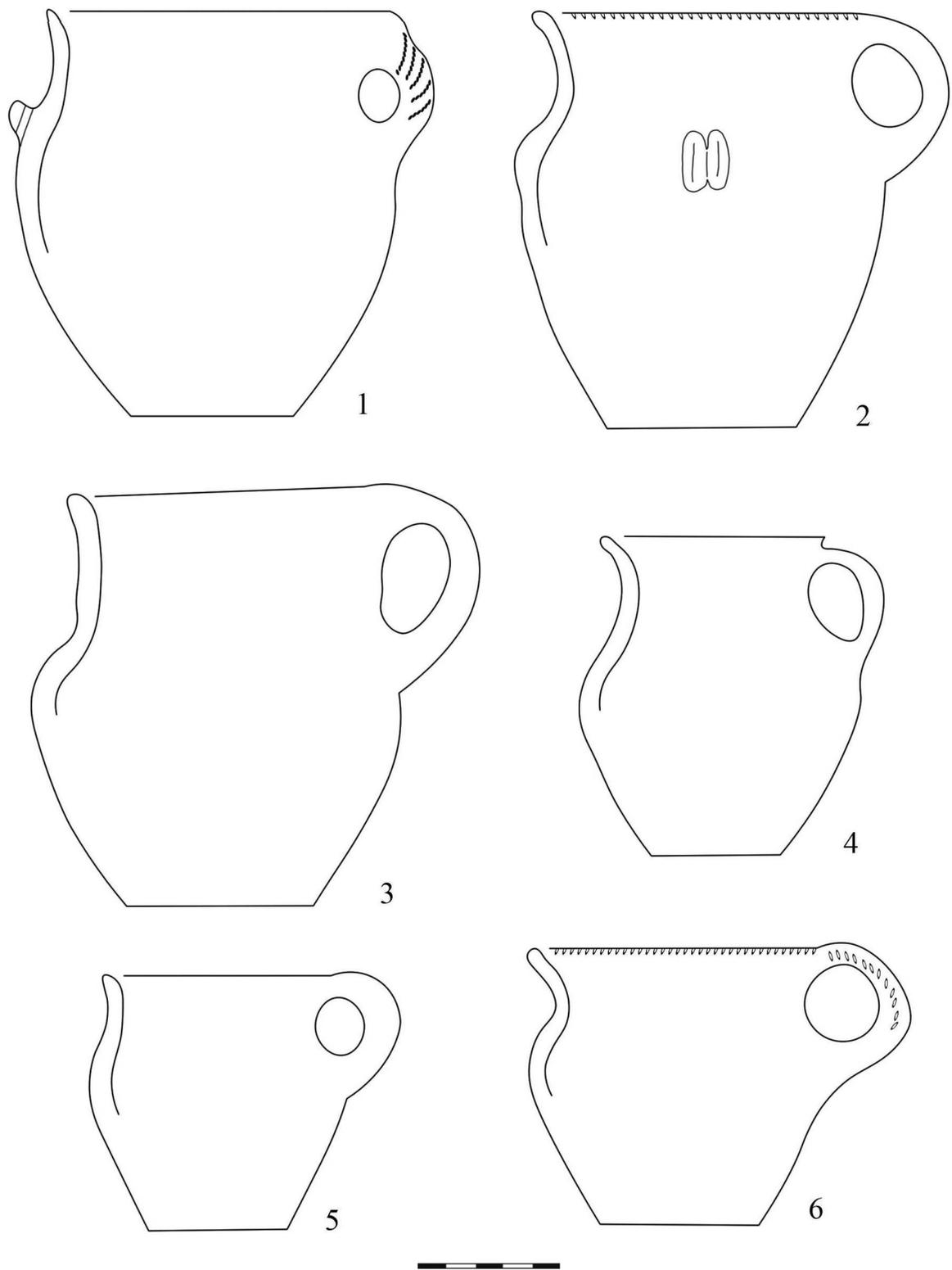


Fig. 58. Jugs

1 – Strumok 1/3; 2 – Taraclia II 17/6; 3 – Bolgrad 1/12; 4 – Nova Dolyna 3/5;
 5 – Novogradkivka 2/9; 6 – Mayaky III 1/18

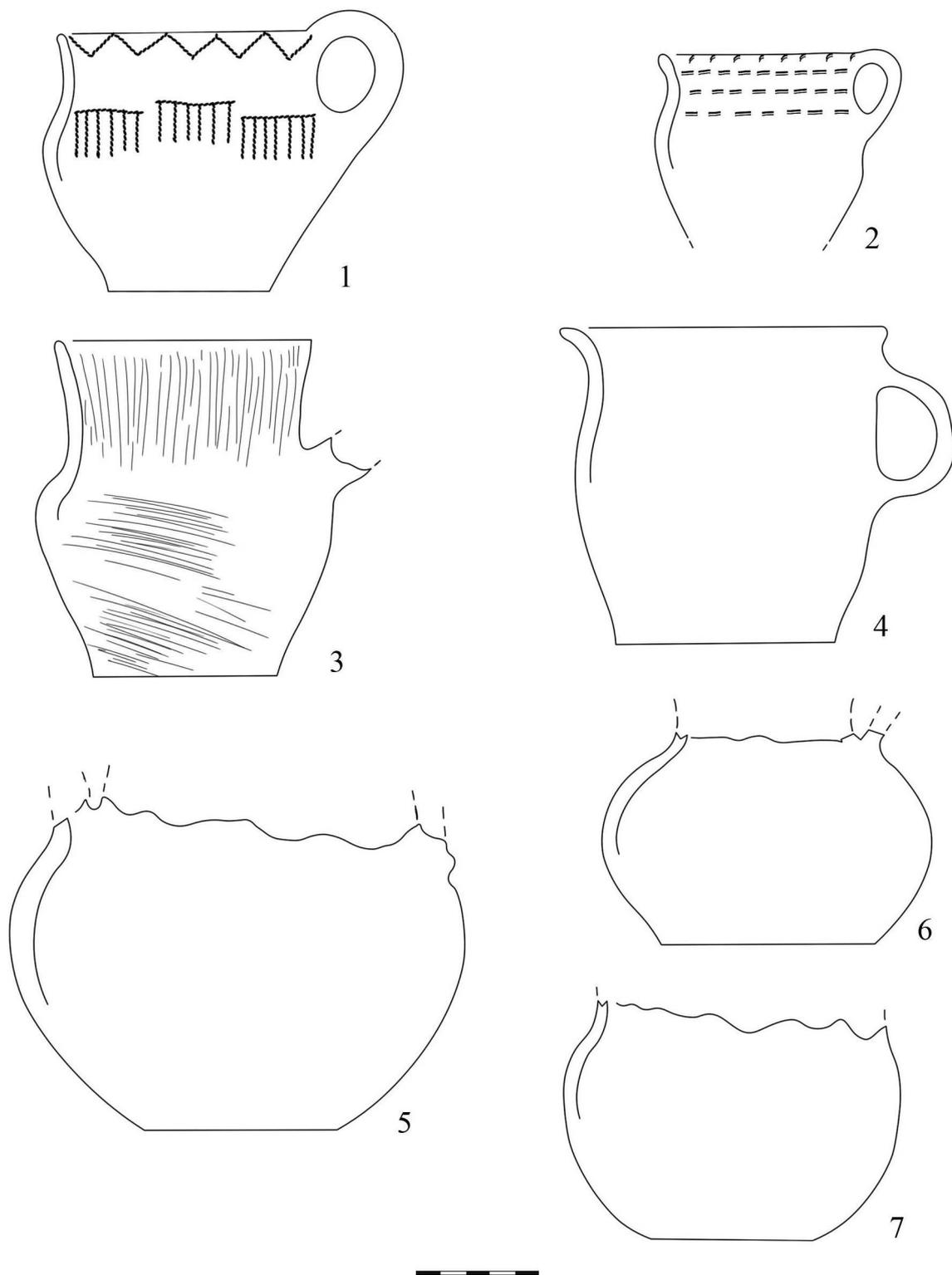


Fig. 59. Jugs and askoses

1 – Olănești 1/28; 2 – Frikazey 1/5; 3 – Cazaclia 17/26; 4 – Dubăsari 31/10;
 5 – Ursoaia 3/6; 6 – Dyvizia II 5/7; 7 – Vapniarka 4/18

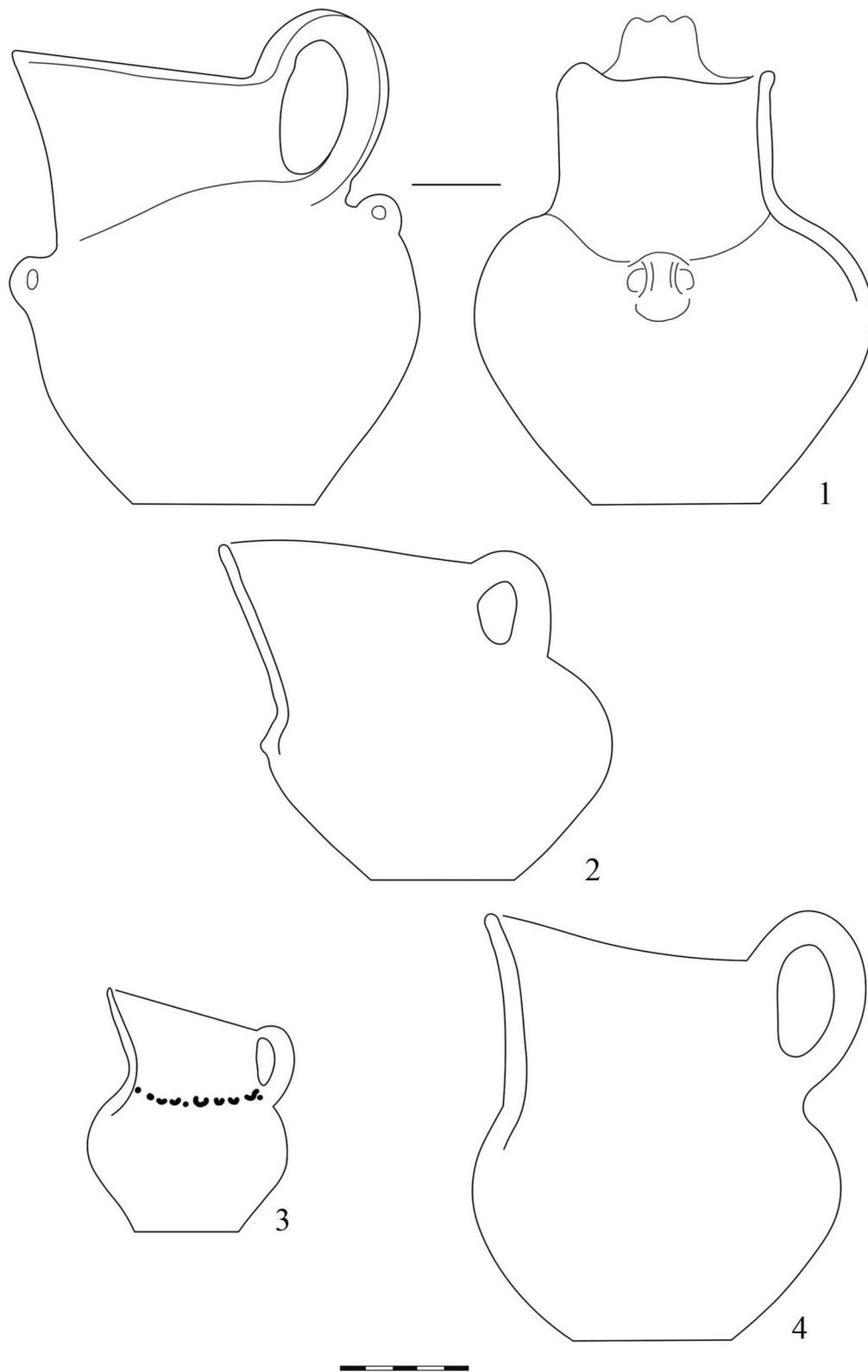


Fig. 60. Askoses

1 – Matroska, barrow 1; 2 – Ciumai 1/11; 3 – Kubey 21/5; 4 – Glyboke 2/11

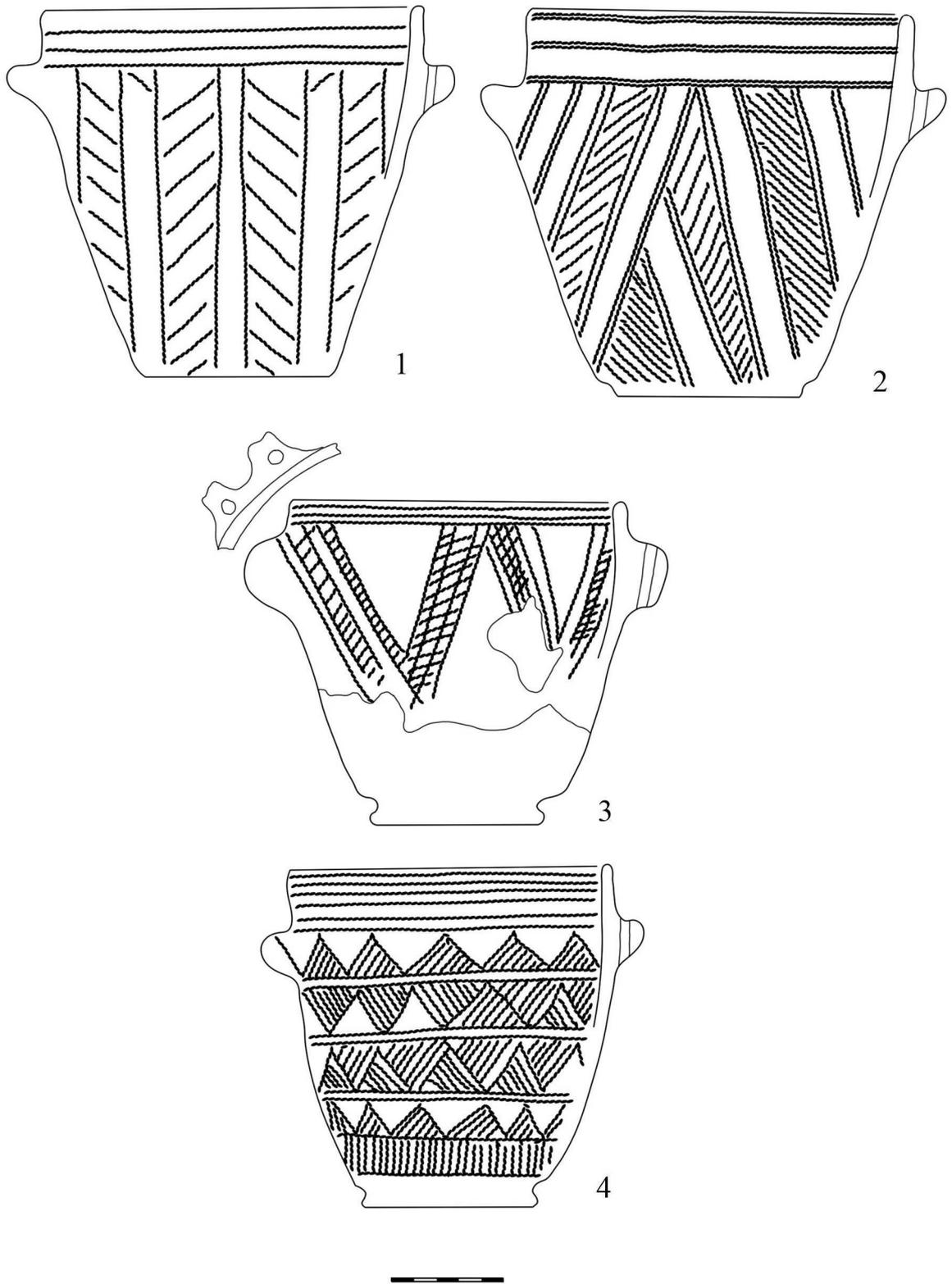


Fig. 61. Jars B I type

1 – Vapniarka 4/16; 2 – Sergiivka 11/7; 3 – Nova Dolyna 3/3; 4 –
Semenivka 8/18

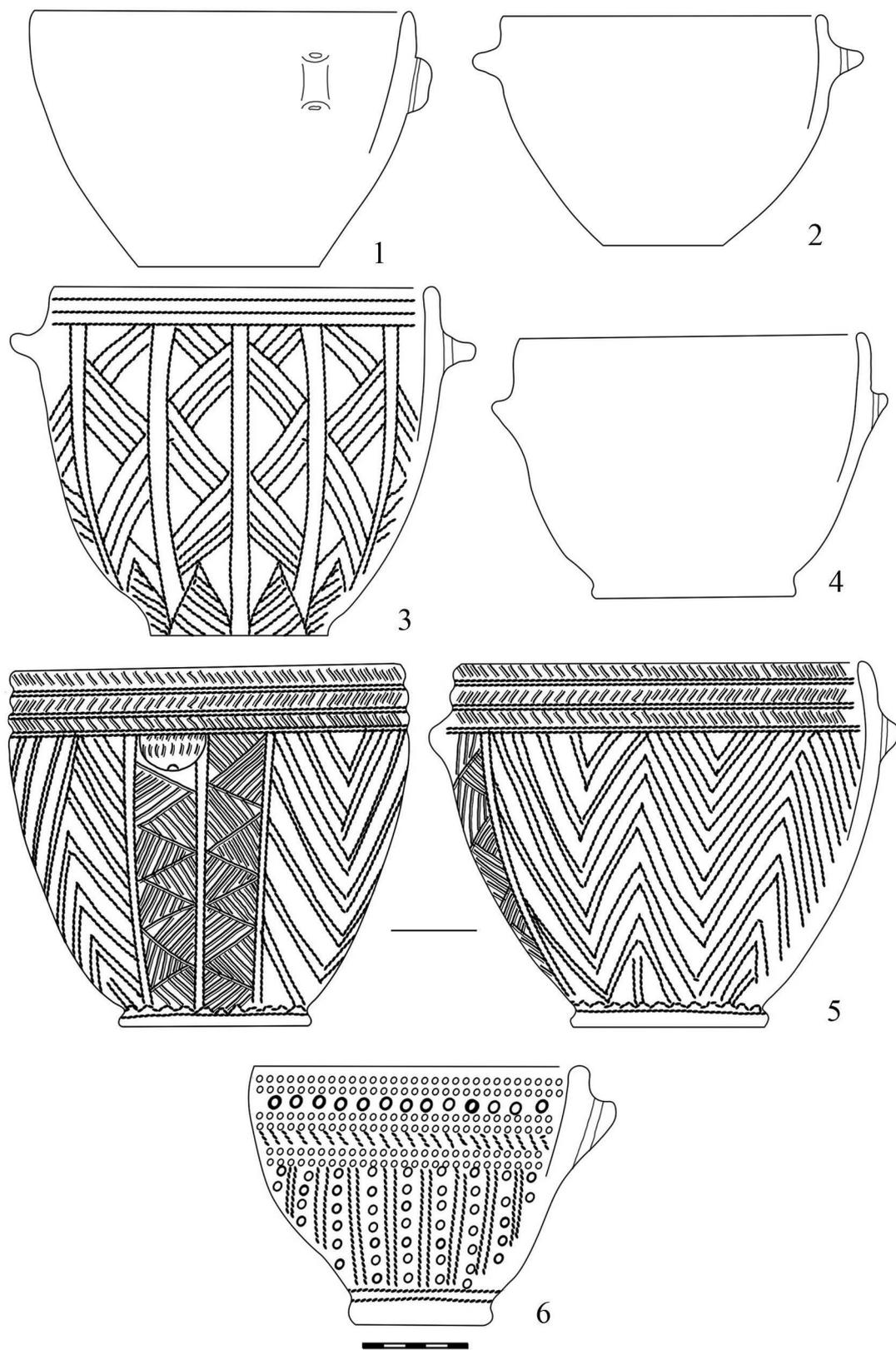


Fig. 62. Jars A I type

1 – Tiraspol, unknown barrow; 2 – Revova 3/7; 3 – Dyvizia 6/3; 4 – Răscăieții
 Noi 2/12; 5 – Semenivka 12/2; 6 – Prymorske 1/34

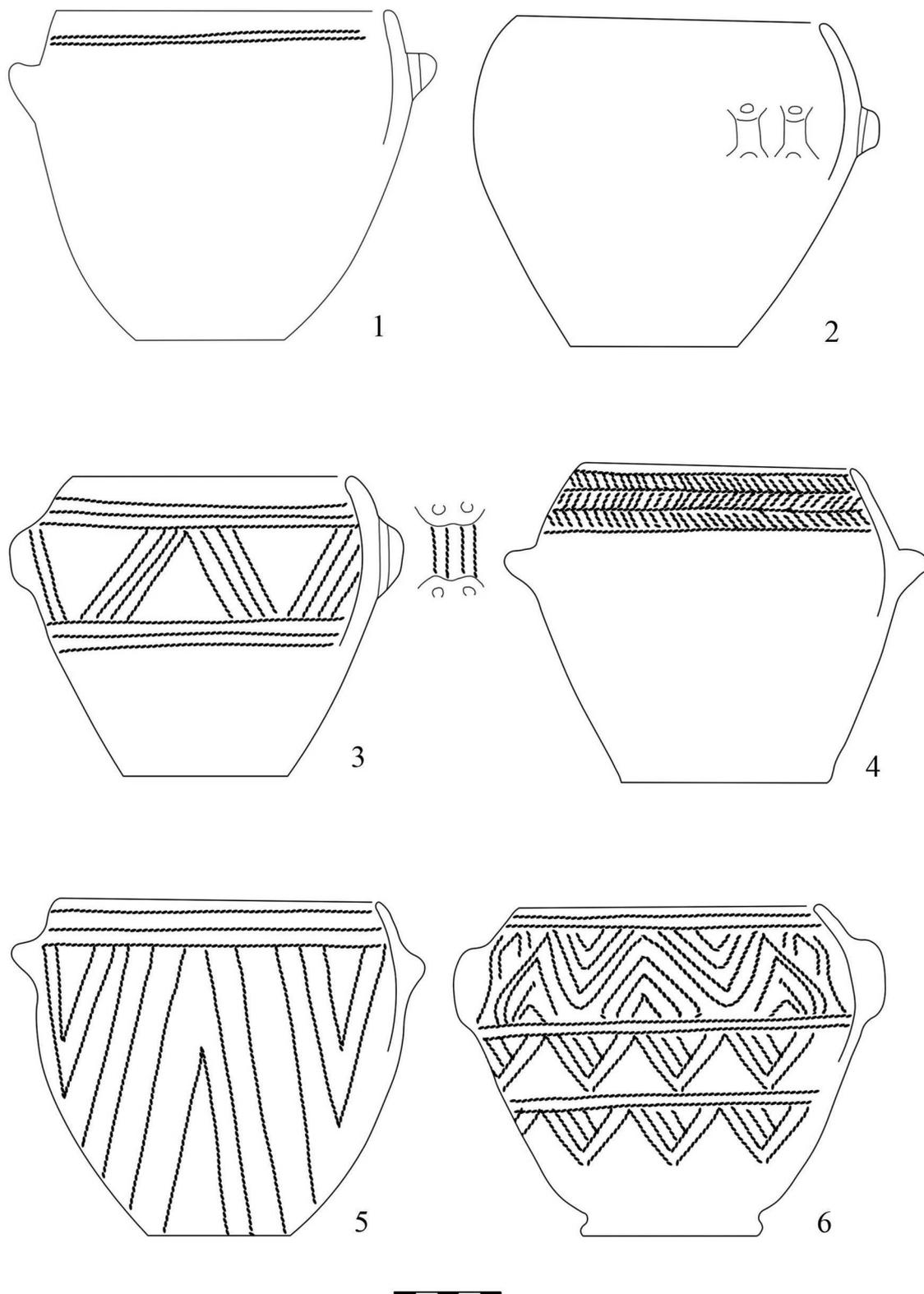


Fig. 63. Jars A II type

1 – Semenivka 19/4; 2 – Novokamyanka, barrow 1; 3 – Svetlii 3/10; 4 – Mykhaylivka 3/12; 5 – Glyboke 1/25; 6 – Nagirne 14/15

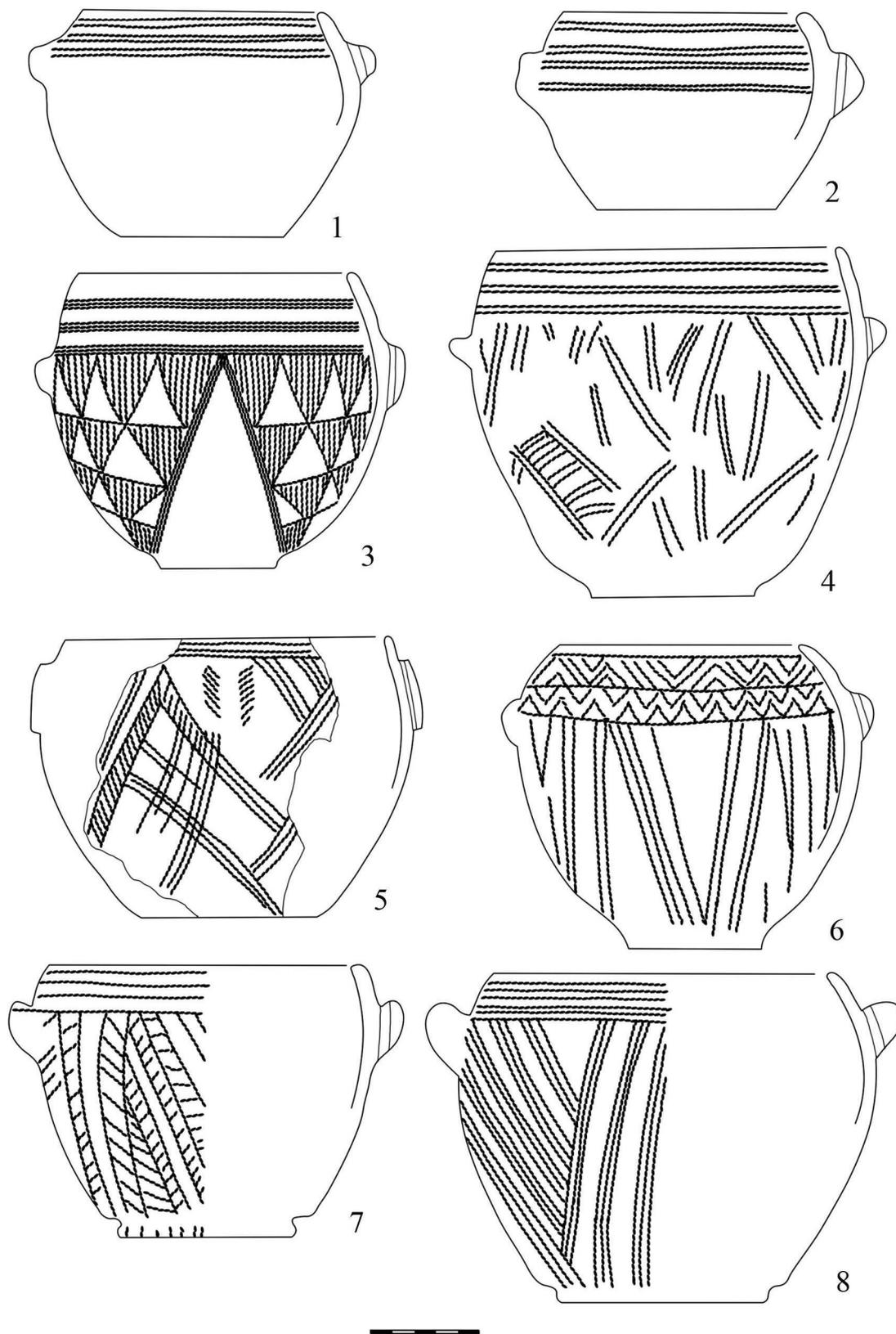


Fig. 64. Jars A III type

1 – Trapivka 1/8; 2 – Trapivka 1/8; 3 – Frikazey 10/14; 4 – Plavni 9/12; 5 – Slobozia 1/25; 6 – Efymivka 2/14; 7 – Sychavka 1/15; 8 – Alkalia 5/6

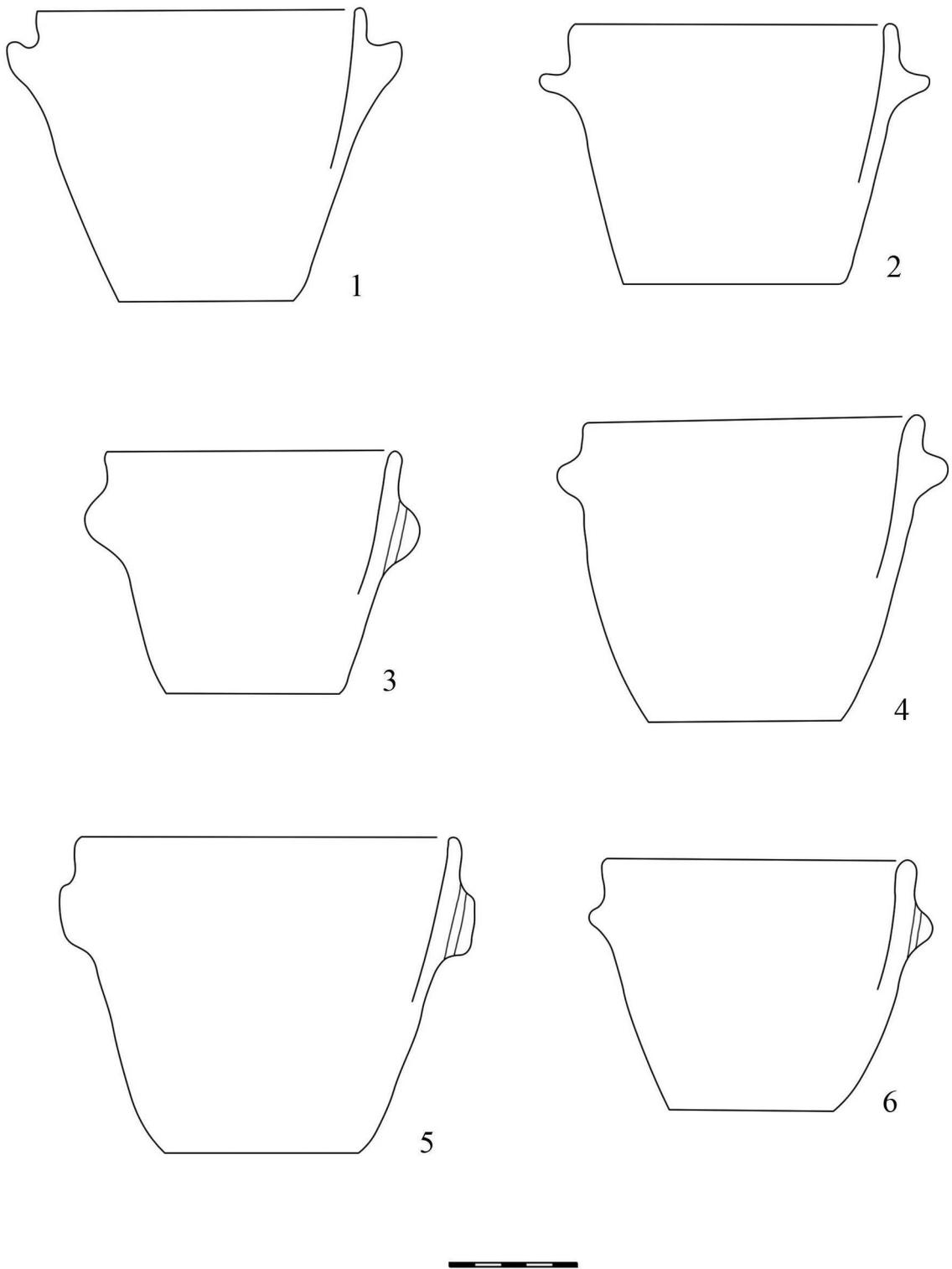


Fig. 65. Jars B I type

1 – Corjova 2/13; 2 – Giurgiulești 2/14; 3, 4 – Novogradkivka 3/10; 5 – Crasnoe 9/23; 6 – Novogradkivka 5/3

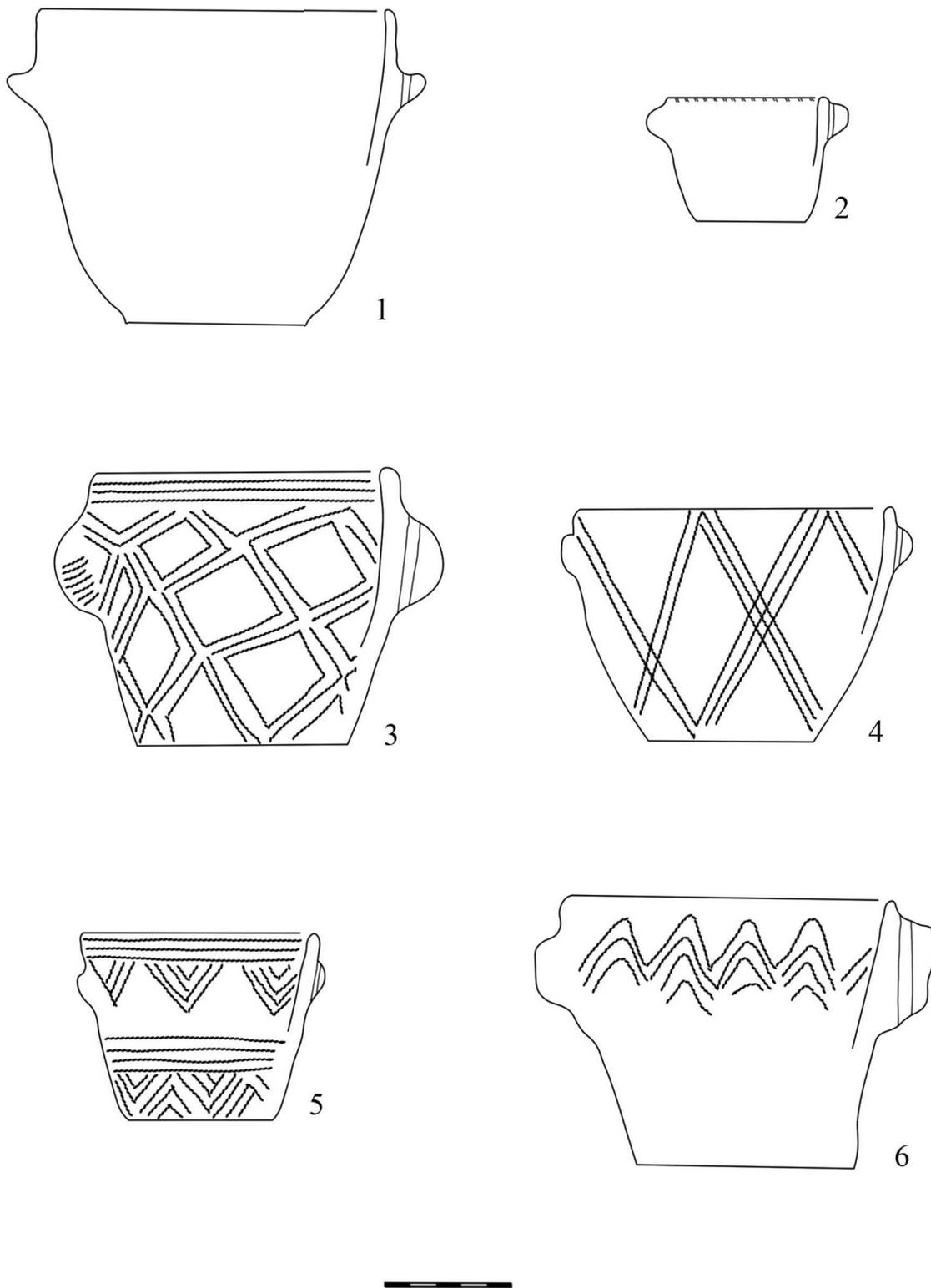


Fig. 66. Jars B I type

1 – Sadove 1/18; 2 – Olănești 1/26; 3 – Efymivka 6/6; 4 – Gura Bîcului 5/13;
 5 – Etulia II 1/6; 6 – Căplani 1/15

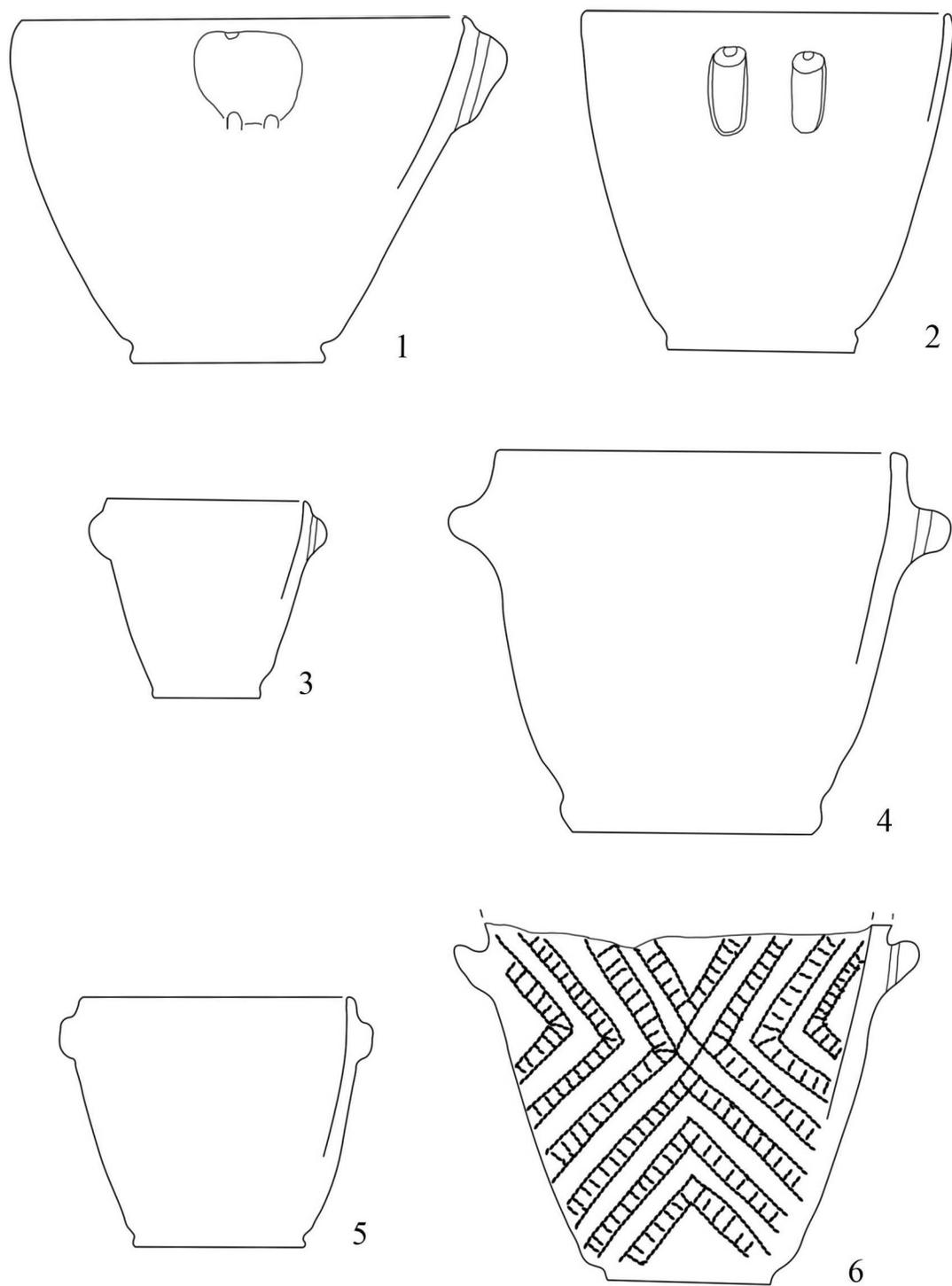


Fig. 67. Jars B I type

1 – Brăviceni 16/9; 2 – Nicolscoe 10/4; 3 – Novogradkivka 3/6; 4 – Bashtanivka 4/25; 5 – Popeasca 1/9; 6 – Cîrnățeni 6/9

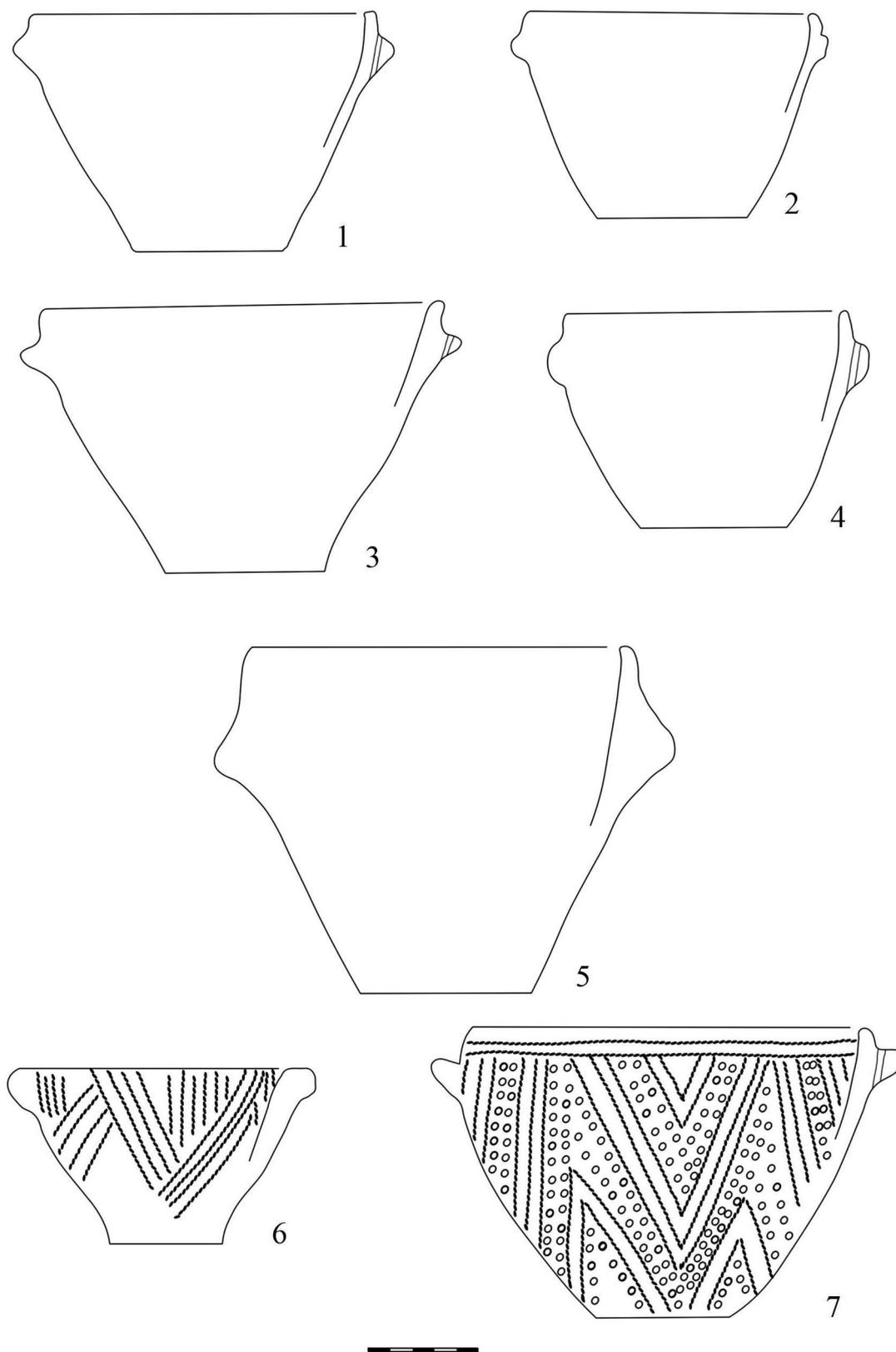


Fig. 68. Jars B I type

1 – Nicolscoe 7/45; 2 – Cioburciu 4/10; 3 – Olănești 6/4; 4 – Gura Bîcului 3/2;
 5 – Efymivka 2/23; 6 – Kovalivka VIII 1/10; 7 – Roșcani 1/13

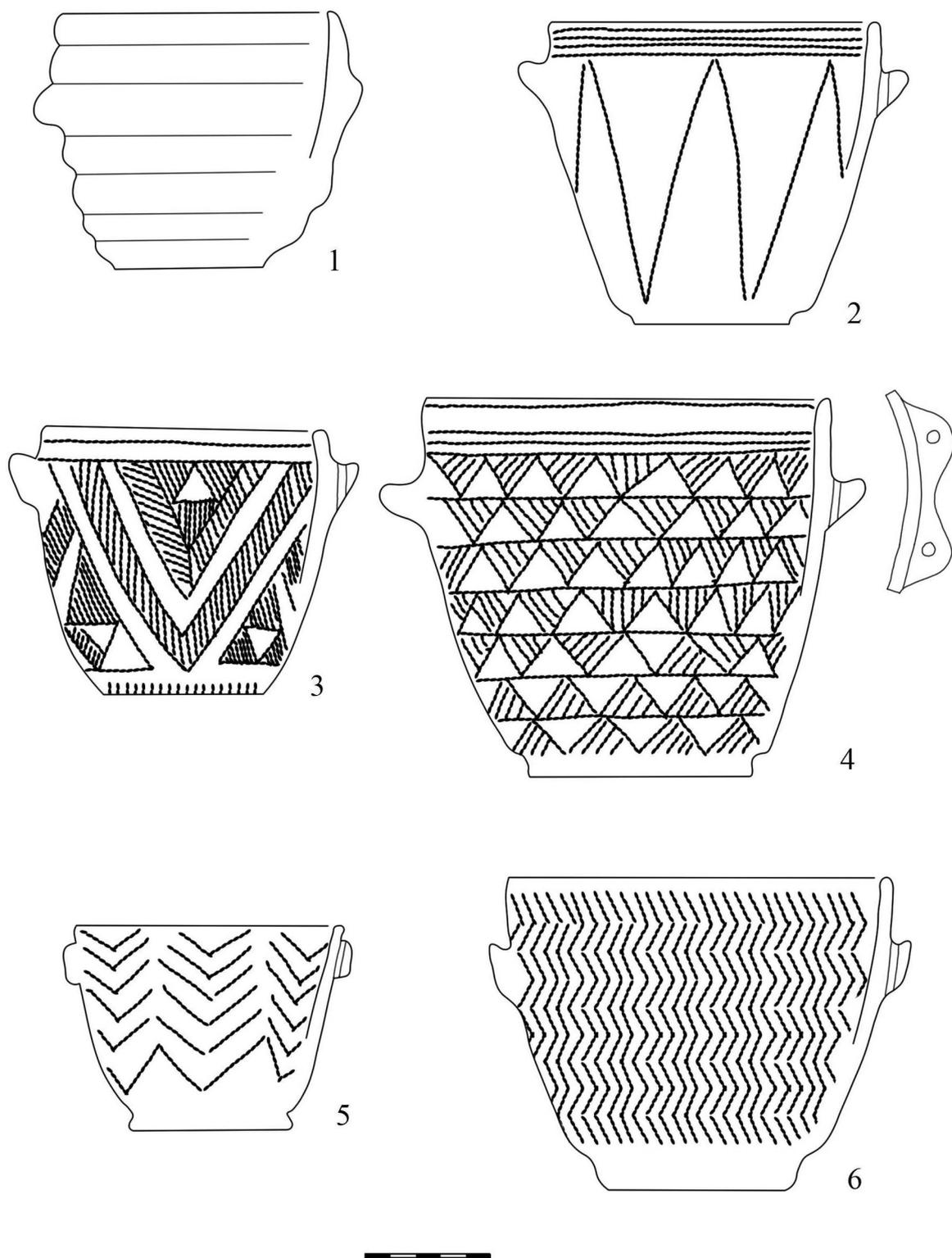


Fig. 69. Jars B I type

1 – Kyslytsia 8/16; 2 – Chirca 1/7; 3 – Kholmske 1/4; 4 – Dubāsari 4/4;
 5 – Beriozchi, barrow 1; 6 – Corjova 8/4

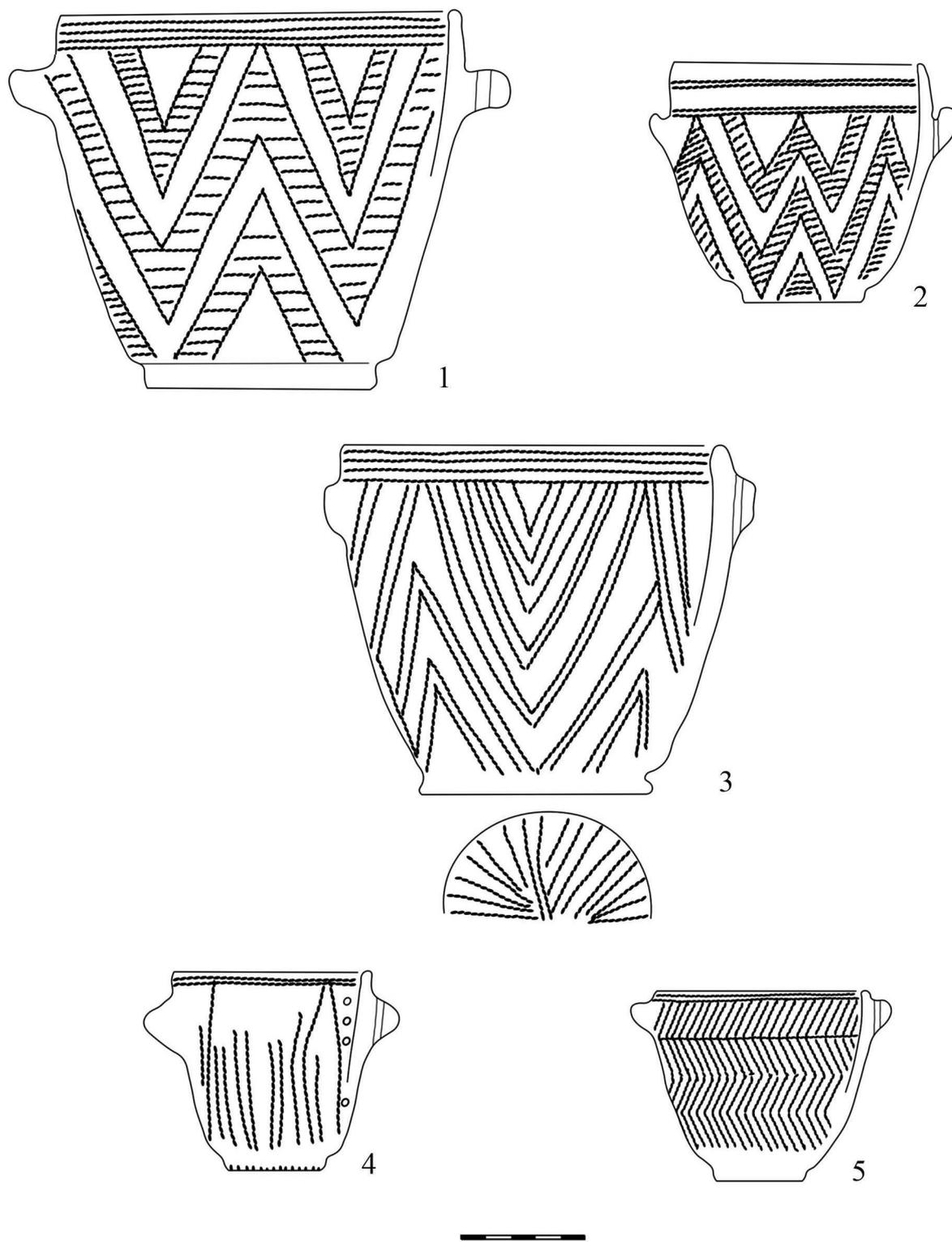


Fig. 70. Jars B I type

1 – Mykhaylivka 3/8; 2 – Mayaki IV 3/1; 3 – Chervonyi Yar II 1/2; 4 –
Nerushay 9/56; 5 – Nerushay 9/74

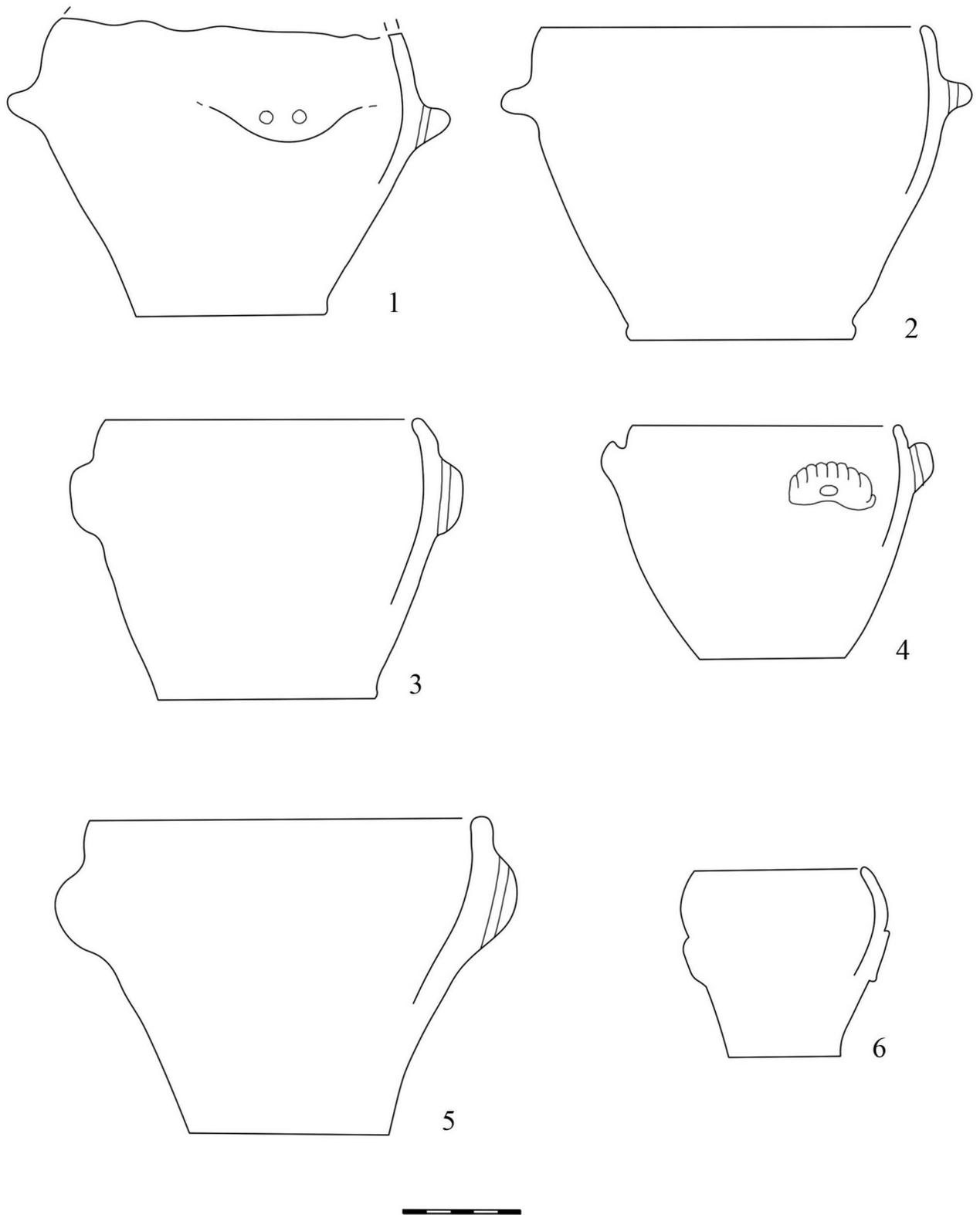


Fig. 71. Jars B II type

1 – Sărăteni 3/13; 2 – Stari Biliary 1/14; 3 – Semenivka 2/2; 4 – Alkalia 5/3;
 5 – Semenivka 14/21; 6 – Nagirne 14/16

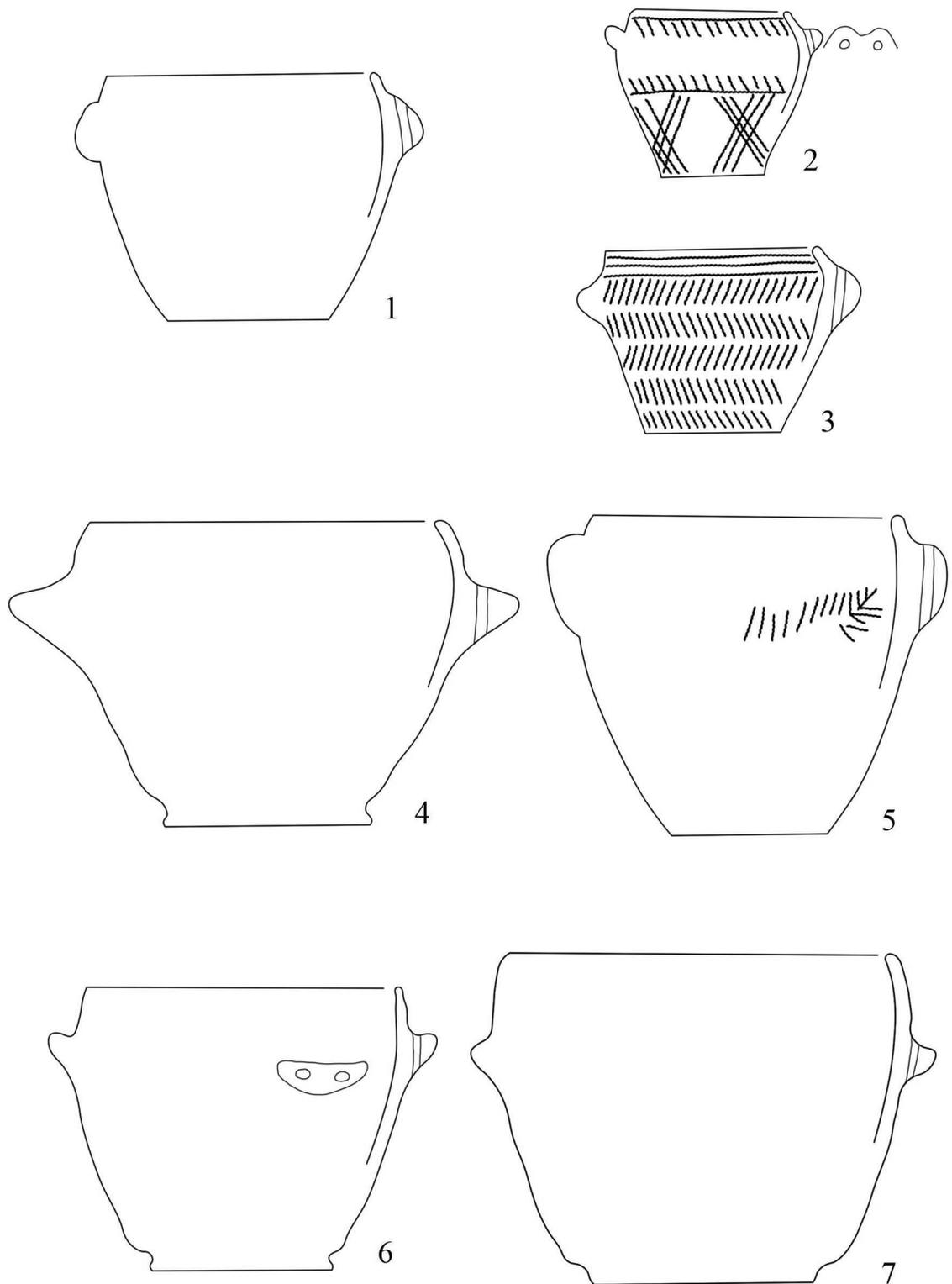


Fig. 72. Jars B II type

1 – Plavni 15/5; 2 – Yasski 6/14; 3 – Zhovtyi Yar 3/12; 4 – Alkalia 34/6;
 5 – Velykozymenove 1/2; 6 – Mayaky IV 1/1; 7 – Dubäsari 31/7

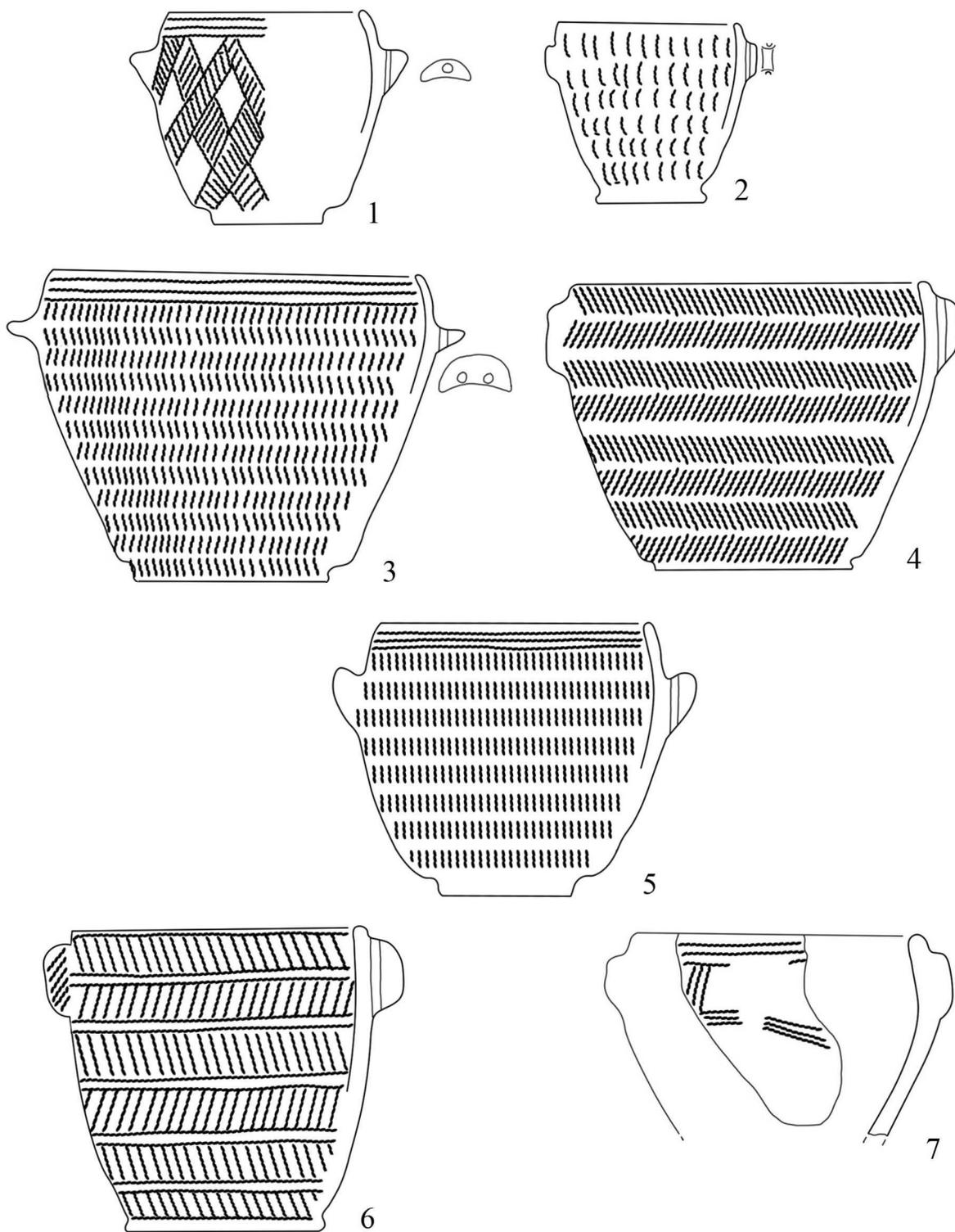


Fig. 73. Jars B II type

1 – Mykhaylika 3/6; 2 – Yasski 3/6; 3 – Mayaky III 2/7; 4 – Sărăteni 6/4;
 5 – Mayaky IV 9/1; 6 – Purcari 1/23; 7 – Novoselytsia 19/19

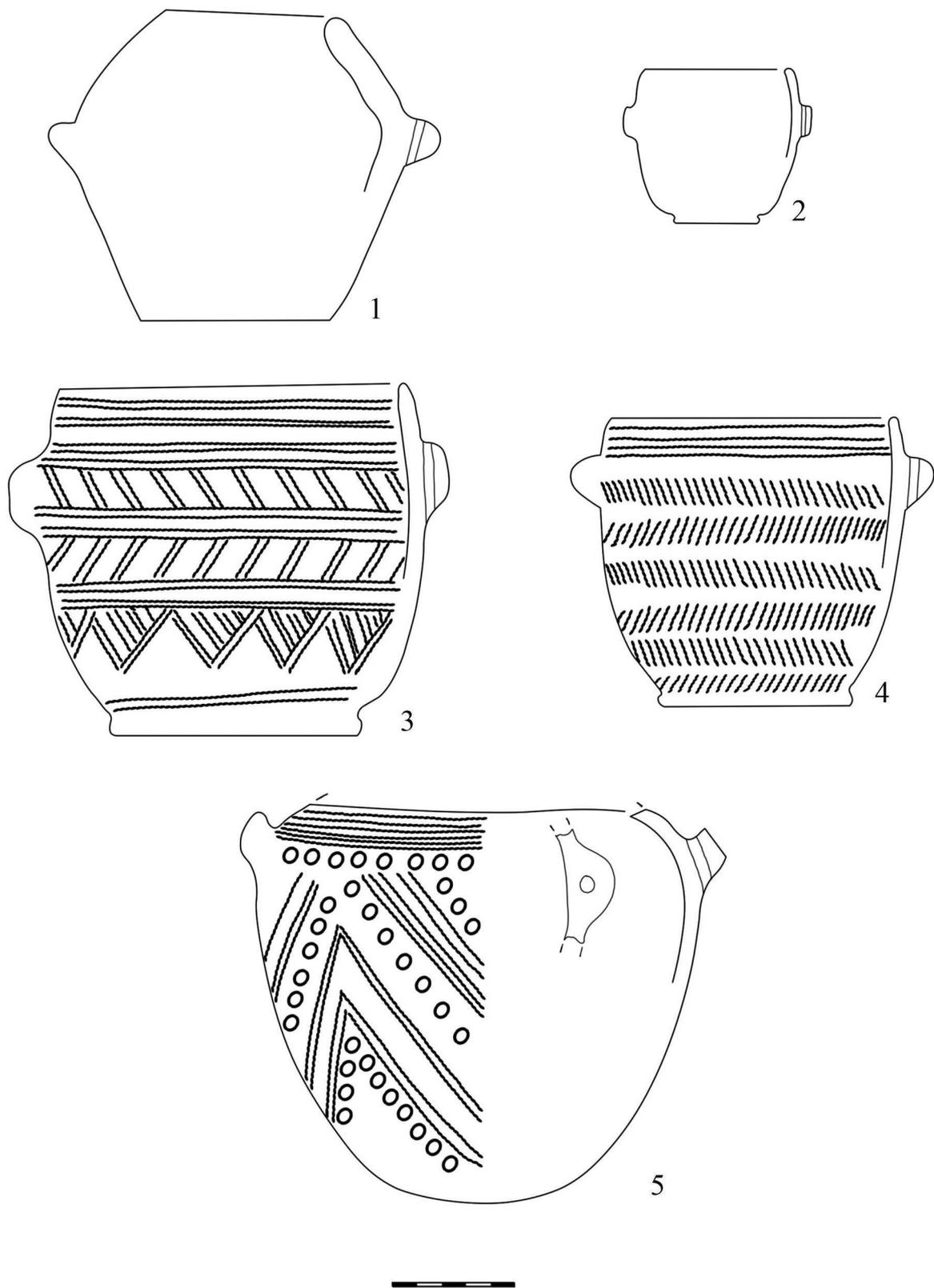


Fig. 74. Jars C, D and E types

1 – Vyshneve 17/4; 2 – Crasnoe 9/23; 3 – Grygorivka 1/12; 4 – Efymivka 3/5;
 5 – Mocra 1/3

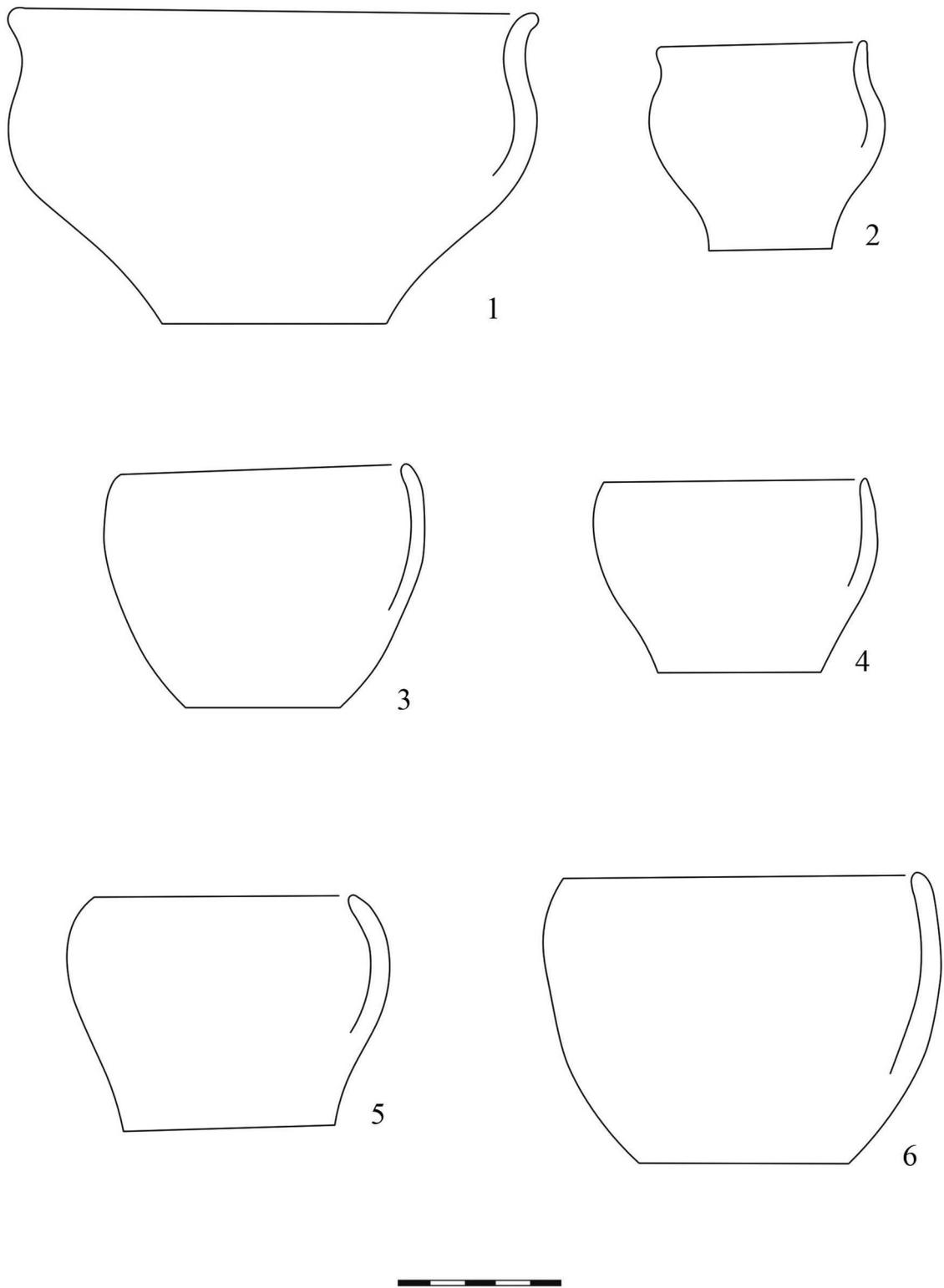


Fig. 75. Bowls A I and A II types

1 – Chirileni 3/5; 2 – Corpaci 2/9; 3 – Găvănoasa 1/7; 4 – Slobozia 1/43;

5 – Corjova 4/6; 6 – Tudora I 1/2

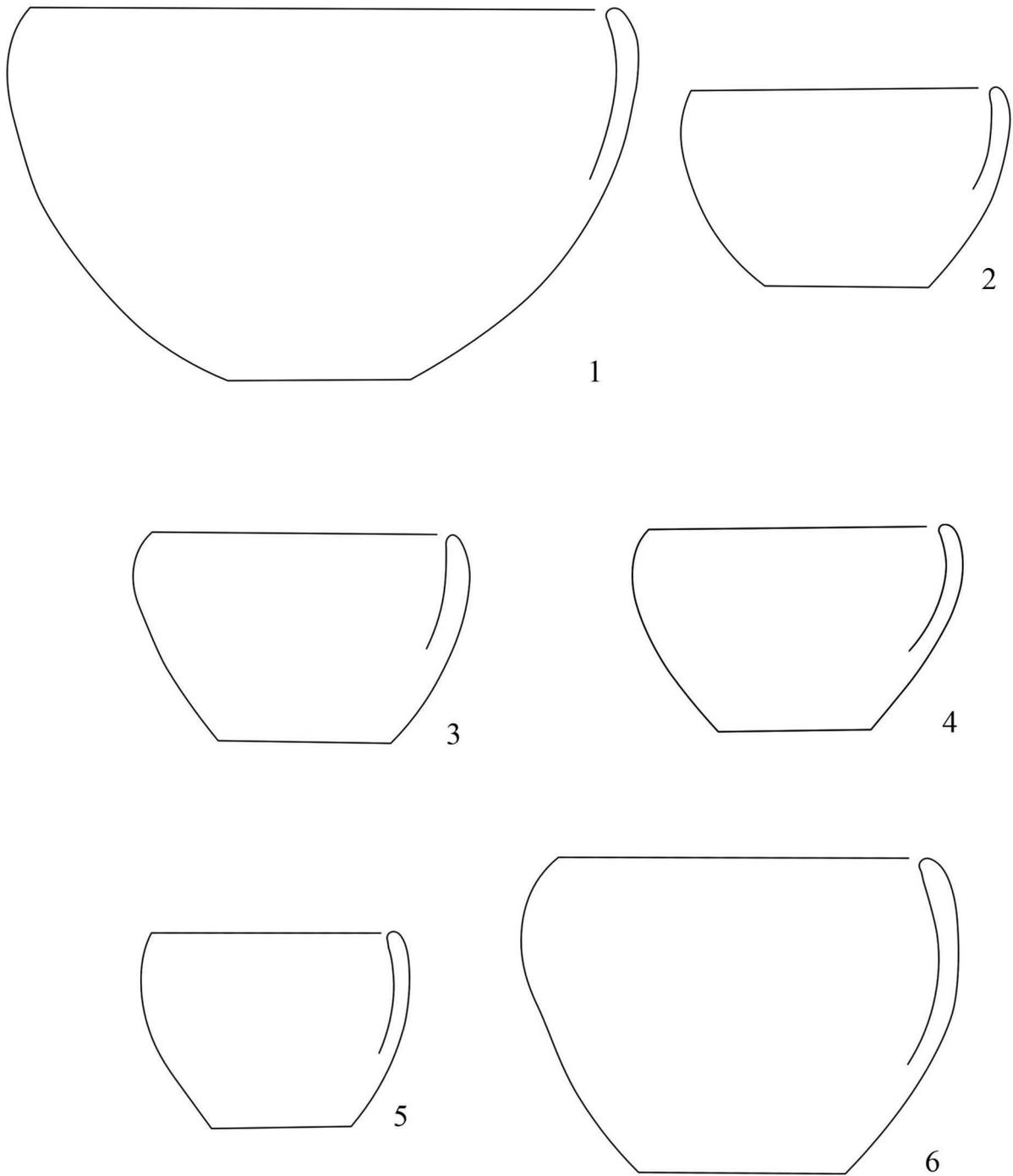


Fig. 76. Bowls A II type

1 – Kholmske 2/8; 2 – Mayaky IV 2/9; 3 – Baranove 1/9; 4 – Cazaclia 17/14;
5 – Olănești 1/14; 6 – Speia 1/5

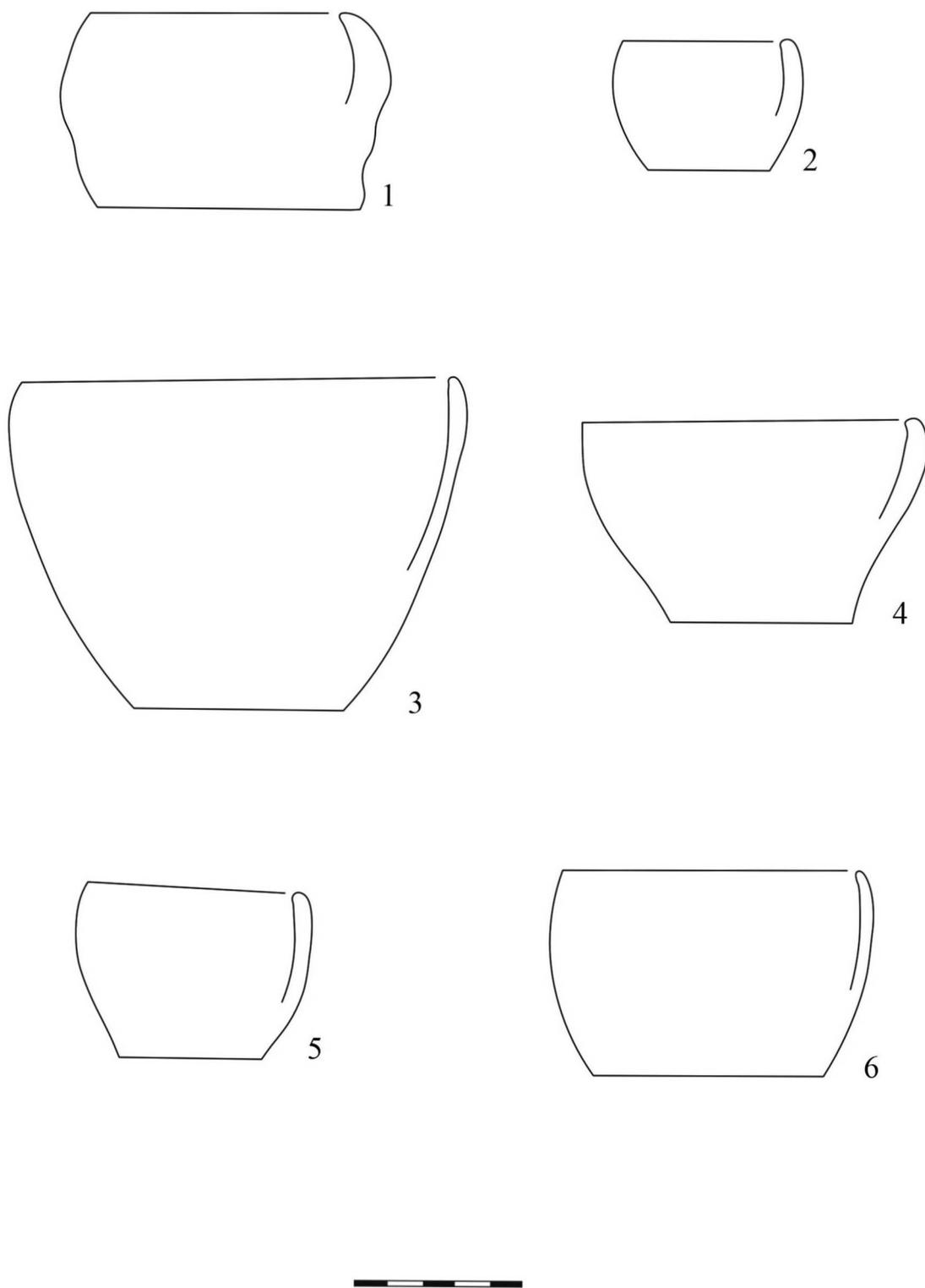


Fig. 77. Bowls A II type

1 – Vyshneve 52/12; 2 – Taraclia II 10/5; 3 – Plavni 1/6; 4 – Ocnita 3/15;
5 – Kholmske 2/7; 6 – Tiraspol II 1/15

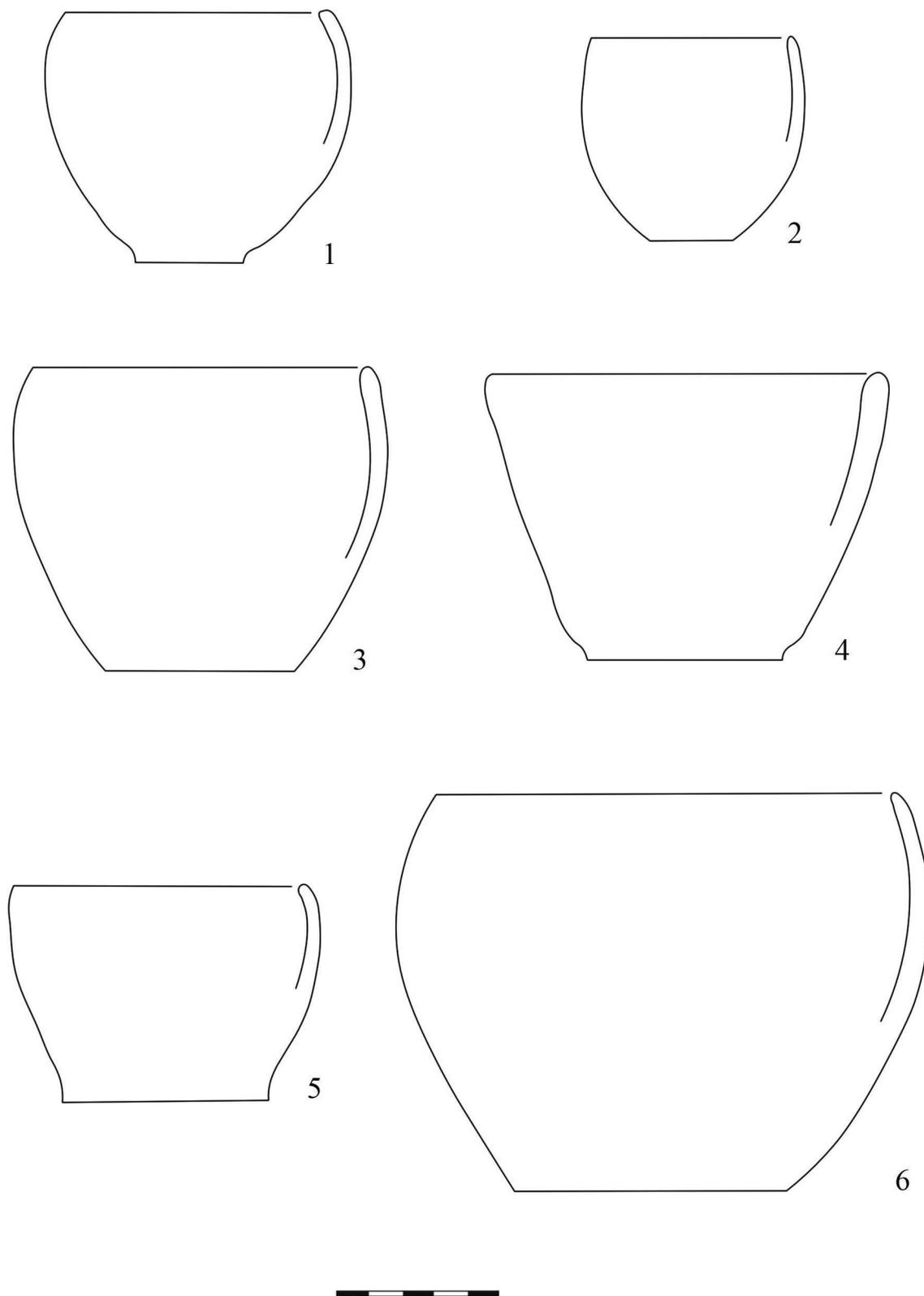


Fig. 78. Bowls A II type

1 – Poliove 1/8; 2 – Zhovtyi Jar 1/12; 3 – Mykolaivka 2/6; 4 – Efymivka 3/4;
 5 – Nadlymanske 1/4; 6 – Gura Bîculu 3/6

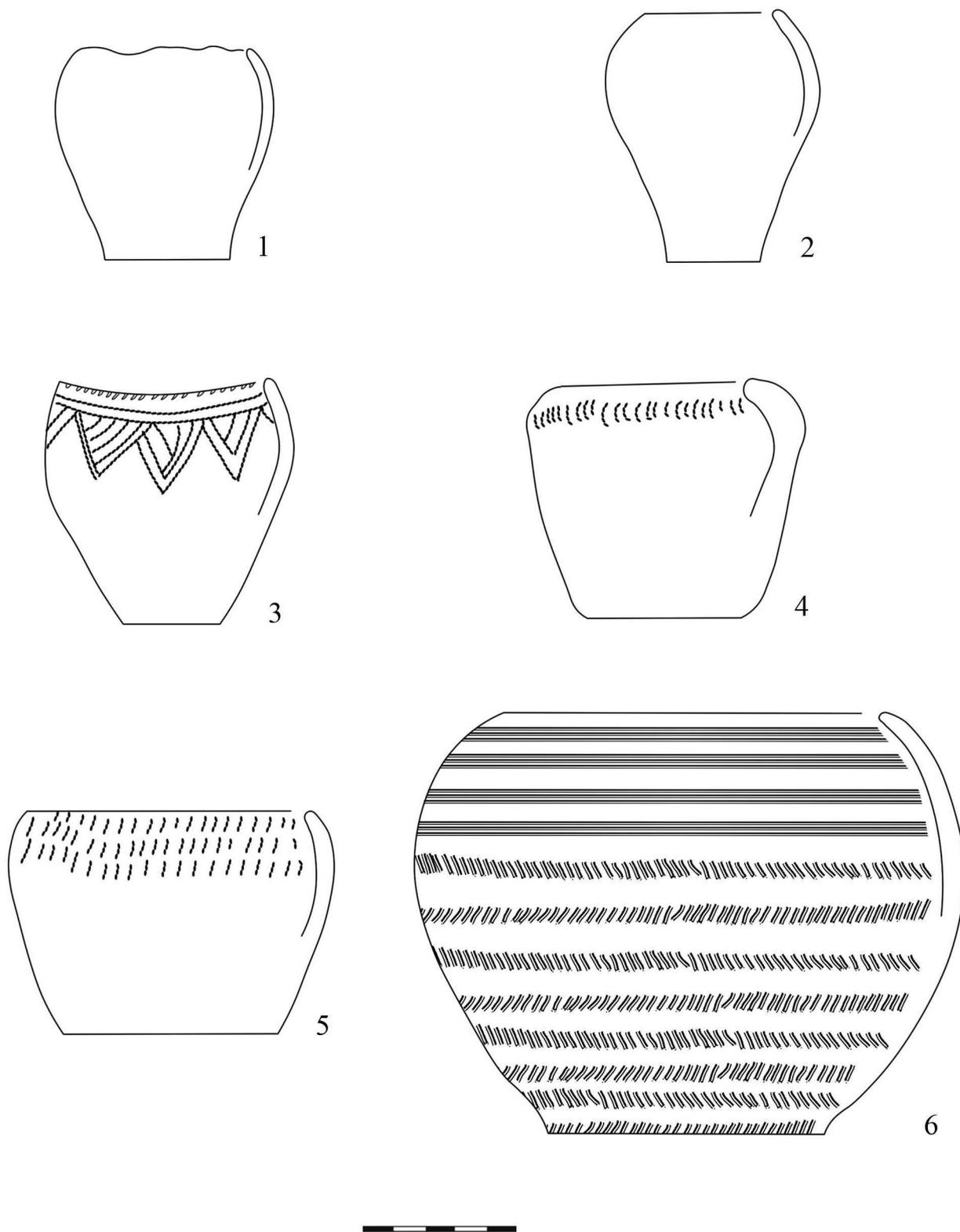


Fig. 79. Bowls A II type

1 – Mayaky 1/18; 2 – Gura Galbenei 1/5; 3 – Mologa 2/96; 4 – Vyshneve 52/3;
 5 – Ocnîța 4/4; 6 – Semenivka 8/16

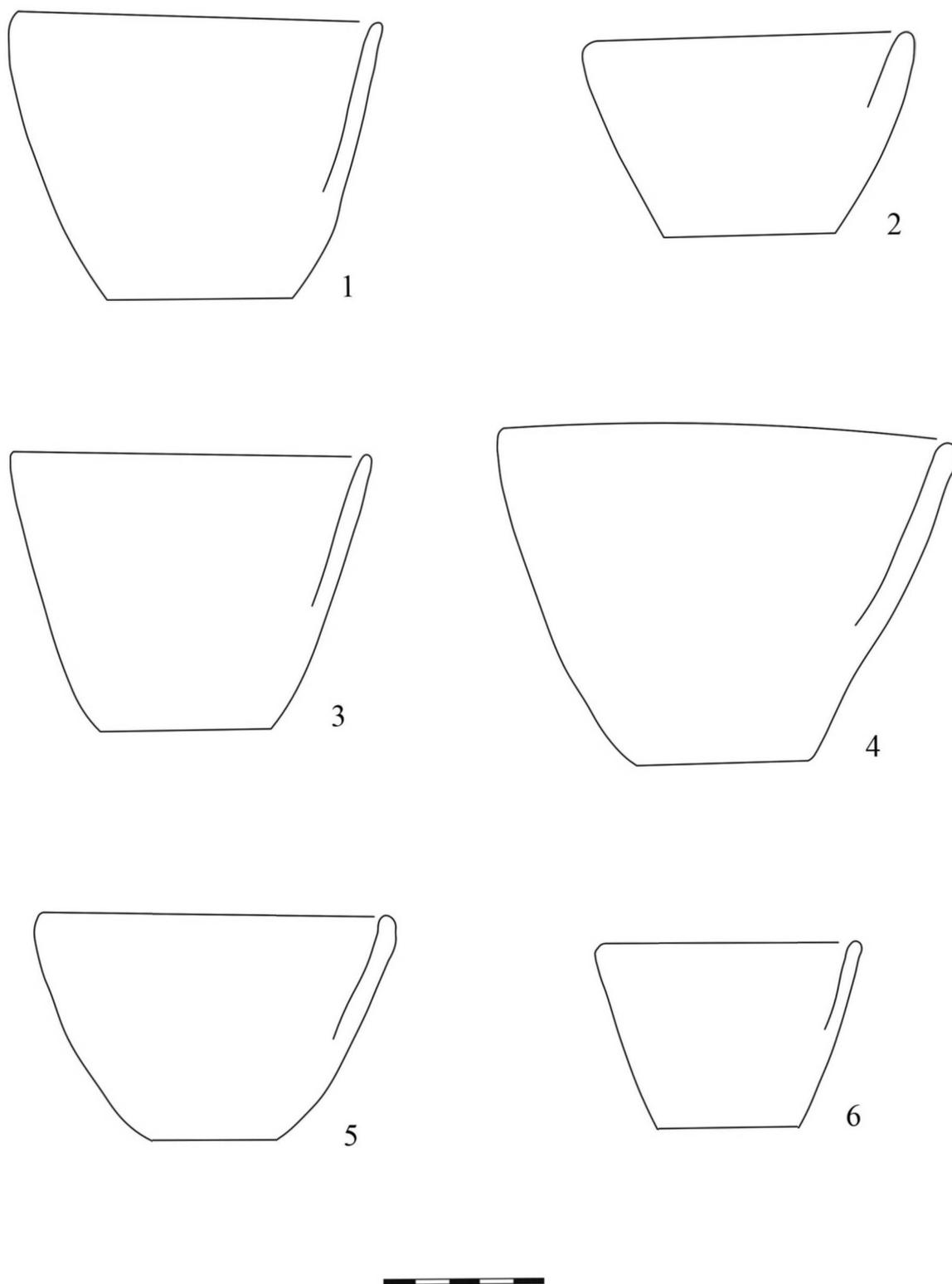


Fig. 80. Bowls B I type

1 – Tudora II 1/6; 2 – Očnița 7/4; 3 – Mykolaivka 8/11; 4 – Kovalivka VII 4/4;
5 – Dobrianka 1/6; 6 – Porogi 3a/18

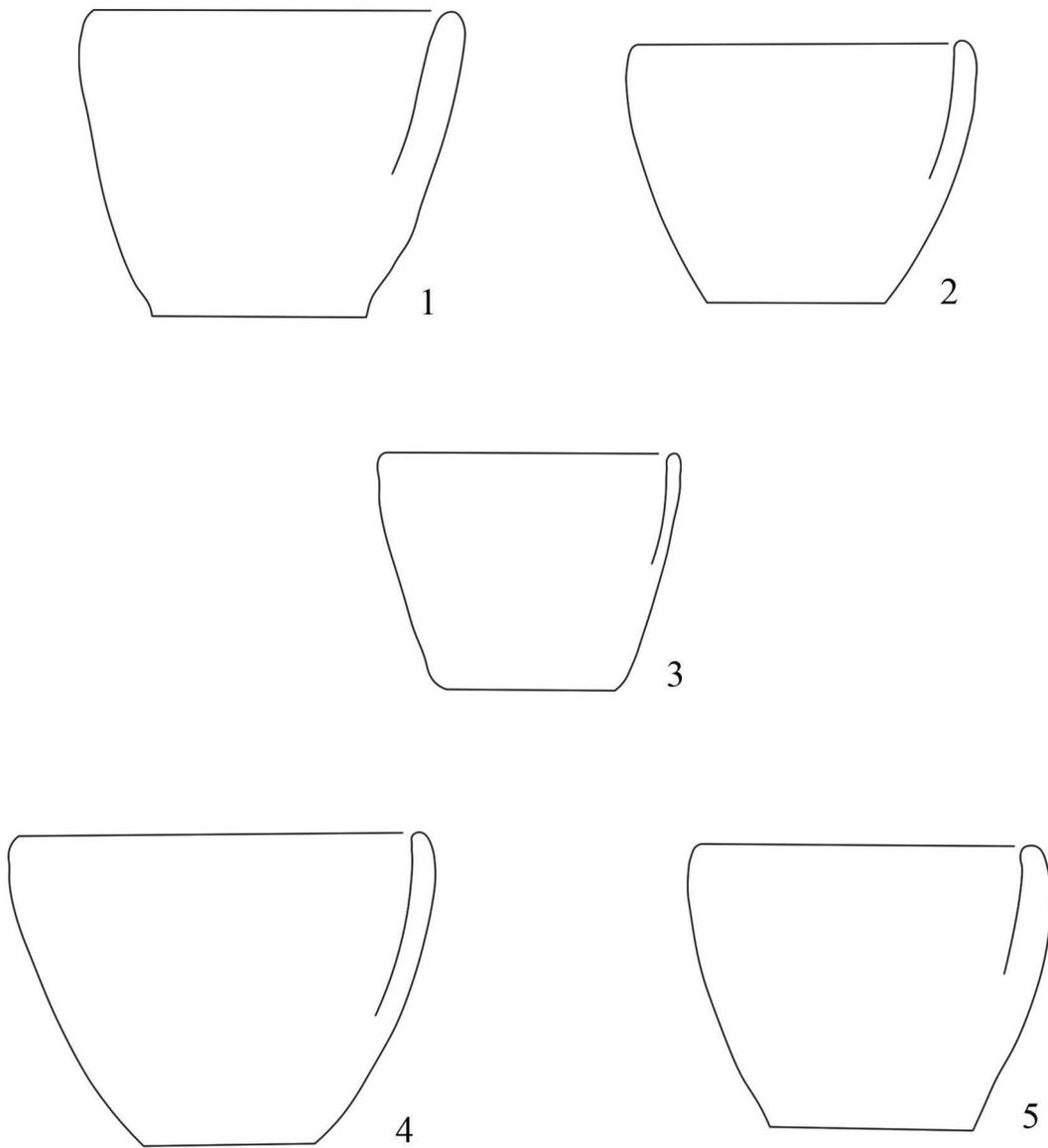


Fig. 81. Bowls B I type

1 – Kamyanka, barrow 3; 2 – Sanzheyka 1/12; 3 – Talmaza 3/14; 4 –
Nicolskoe 16/16; 5 – Semenivka 2/3

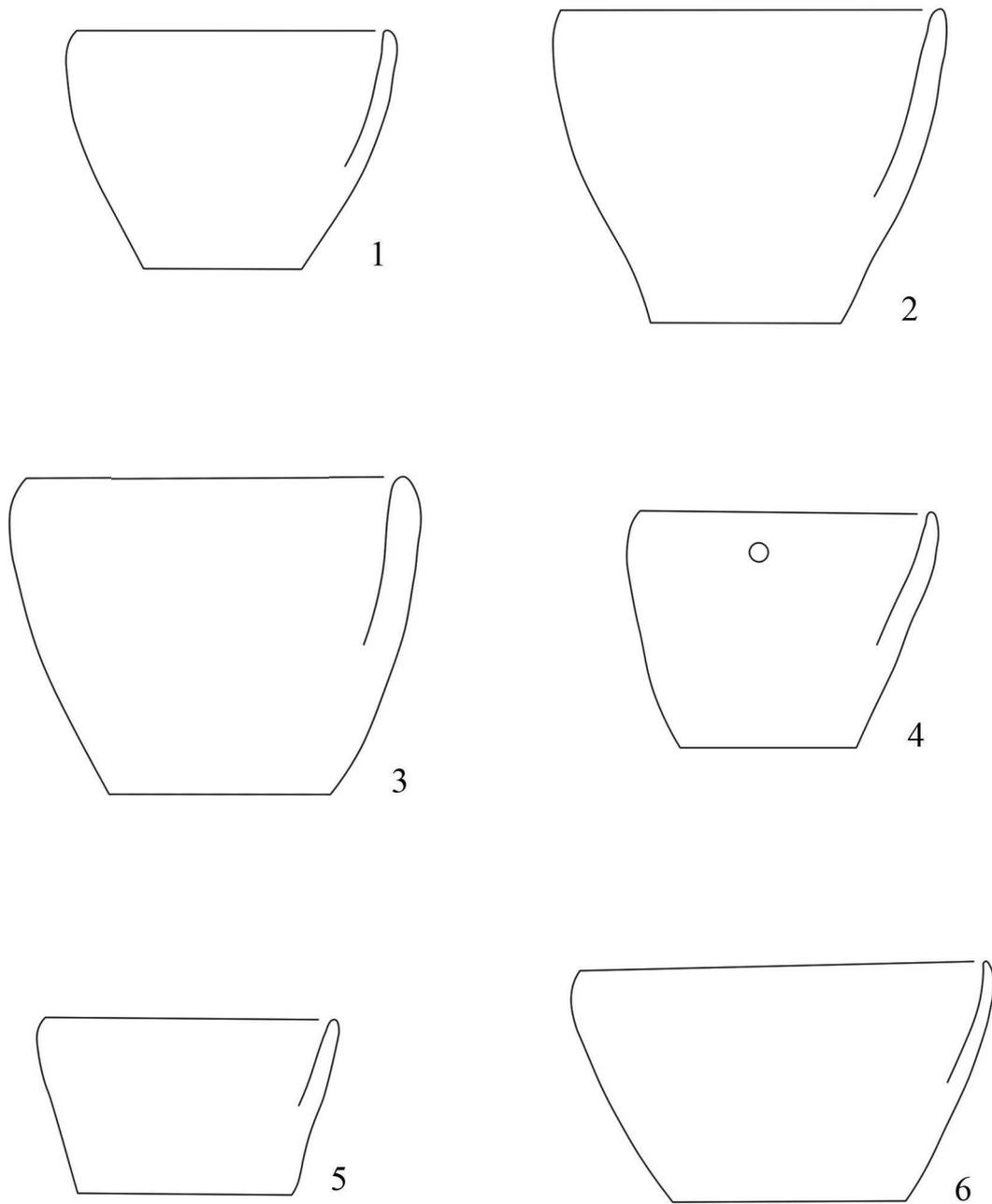


Fig. 82. Bowls B I type

1–Nerushay 9/12; 2–Nerushay 10/10; 3–Biliaivka 1/34; 4–Taraclia II 10/5;
5 – Bădragii Vechi 21/2; 6 – Popeasca 1/11

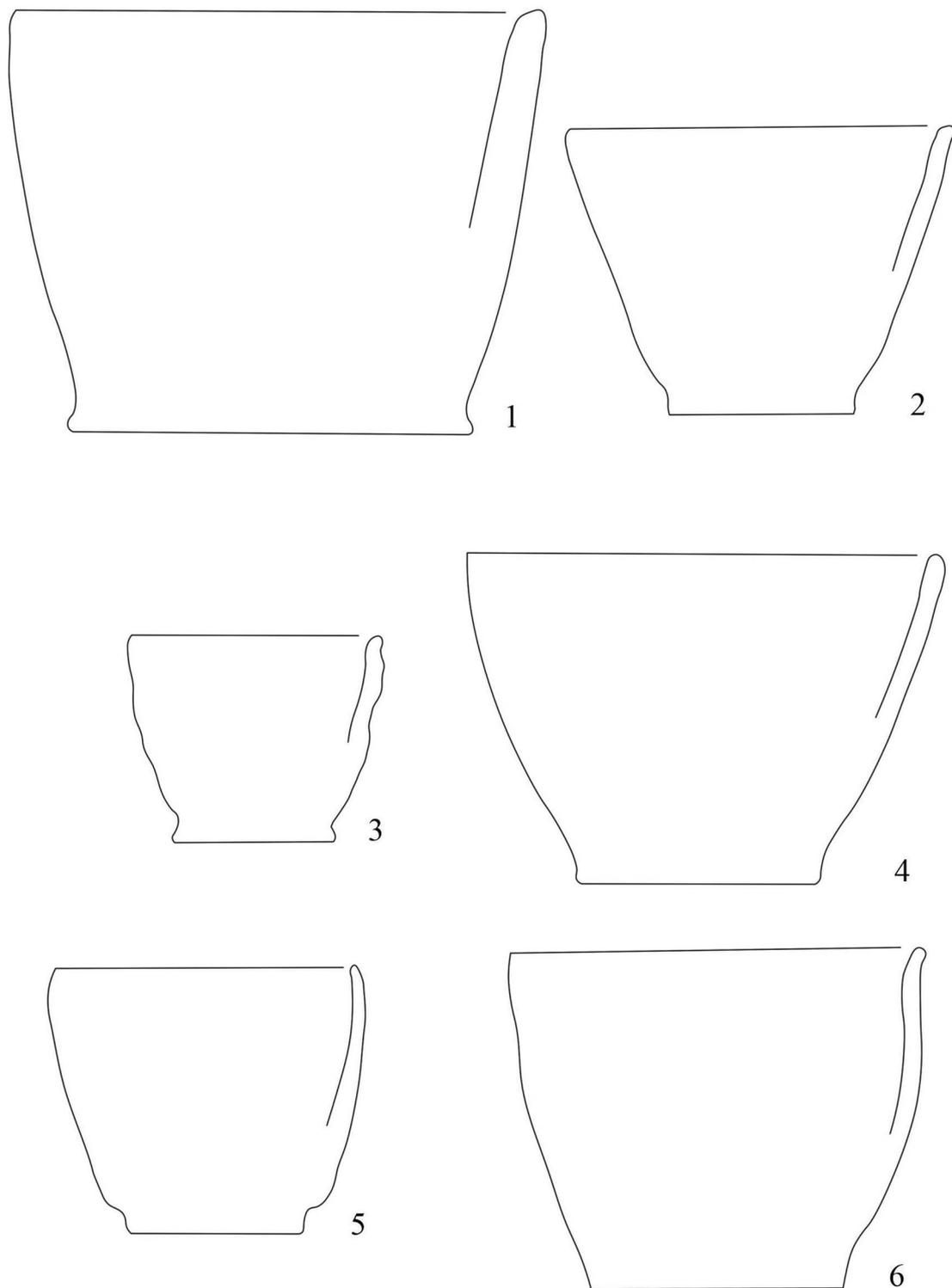


Fig. 83. Bowls B I type

1 – Feștelița II 1/7; 2 – Taraclia II 18/9; 3 – Slobozia 1/43; 4 – Khadzhyder 13/8;
5 – Alcalia 35/1; 6 – Novogradkivka 1/10

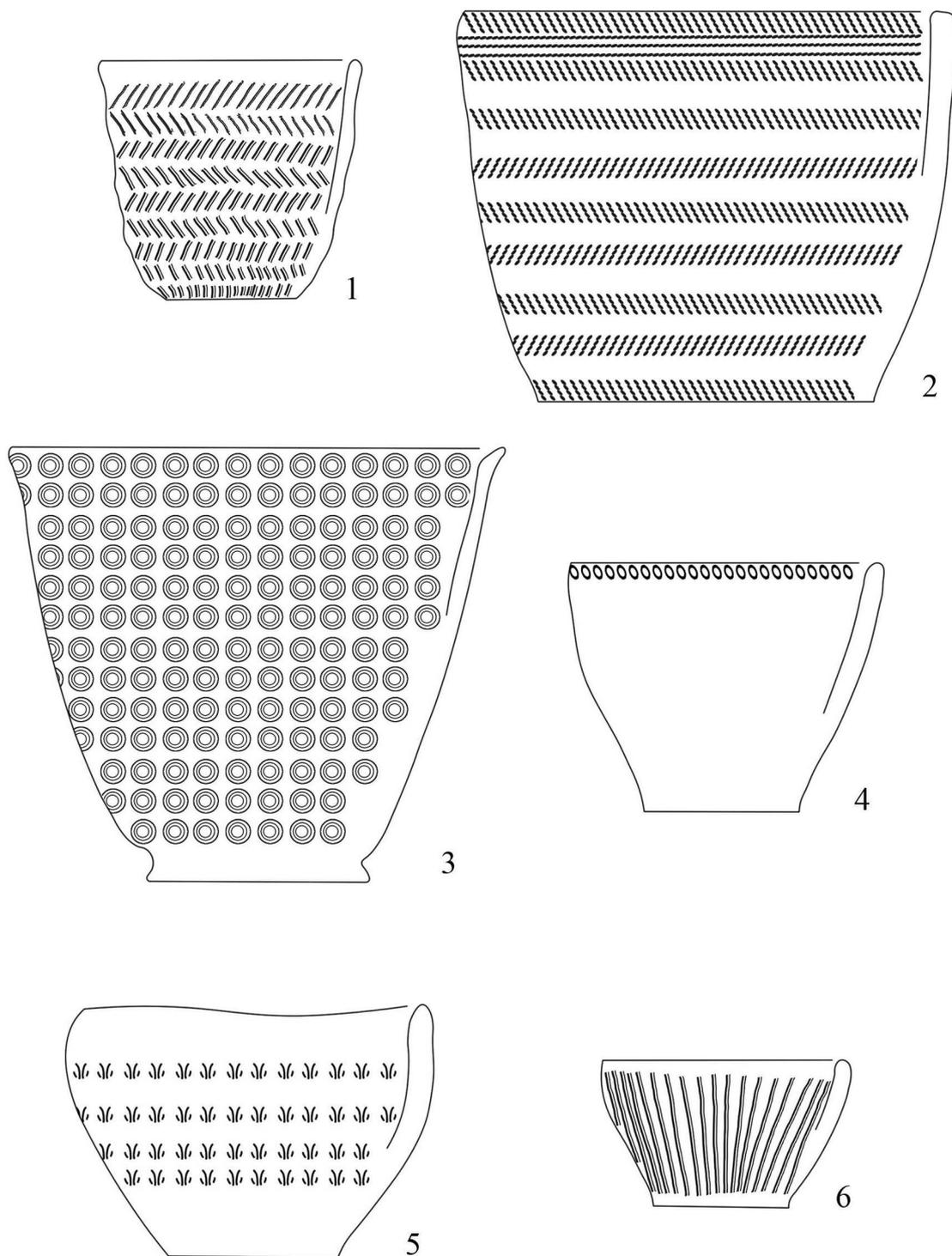


Fig. 84. Bowls B I type

1 – Novogradkivka 2/9; 2 – Prymorske 1/12; 3 – Mykhaylivka 3/7; 4 –
 Nerushay 10/10; 5 – Tochile-Răducani 1/14; 6 – Pysarivka 4/2

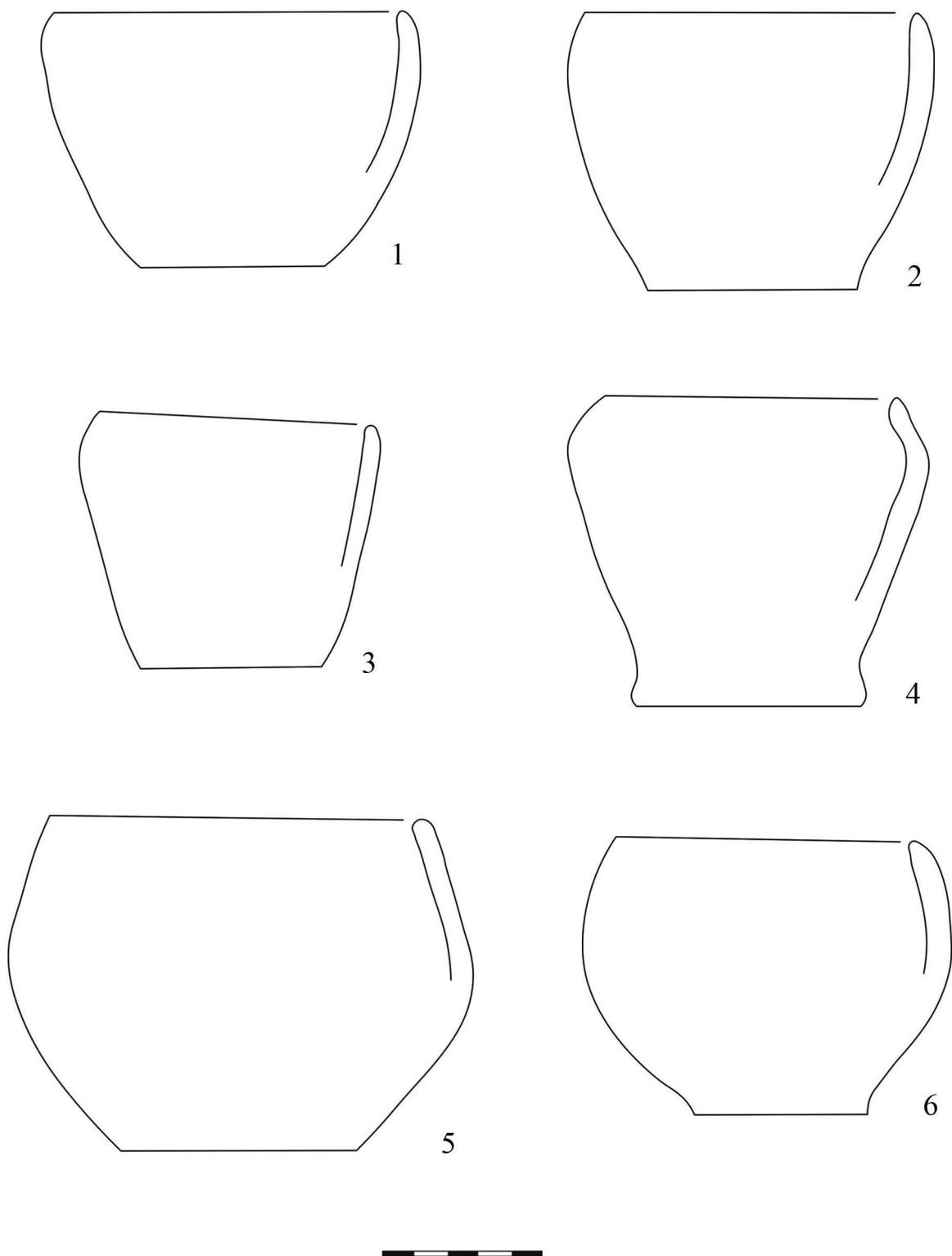


Fig. 85. Bowls B II and C types

1 – Mologa 2/39; 2 – Cioburciu II 1/12; 3 – Copceac 3/9; 4 – Mykolaivka 8/6;
 5 – Khadzhyder 6/2; 6 – Trapivka 1/8

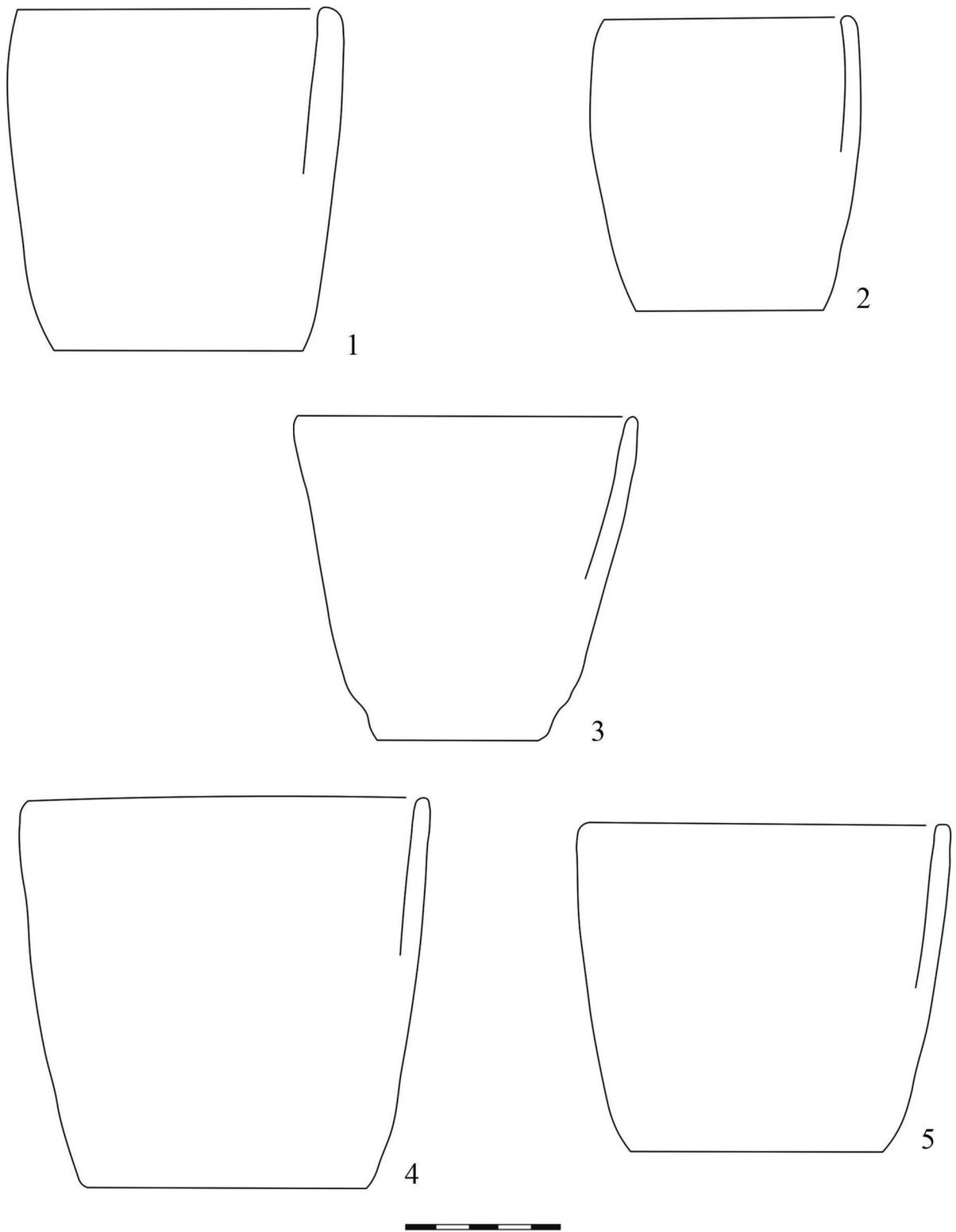


Fig. 86. Bowls D type

1 – Bolgrad 5/6; 2 – Olănești, barrow 13; 3 – Kovalivka II 3/11; 4 –
Kovalivka II 3/11; 5 – Crasnoe 9/23

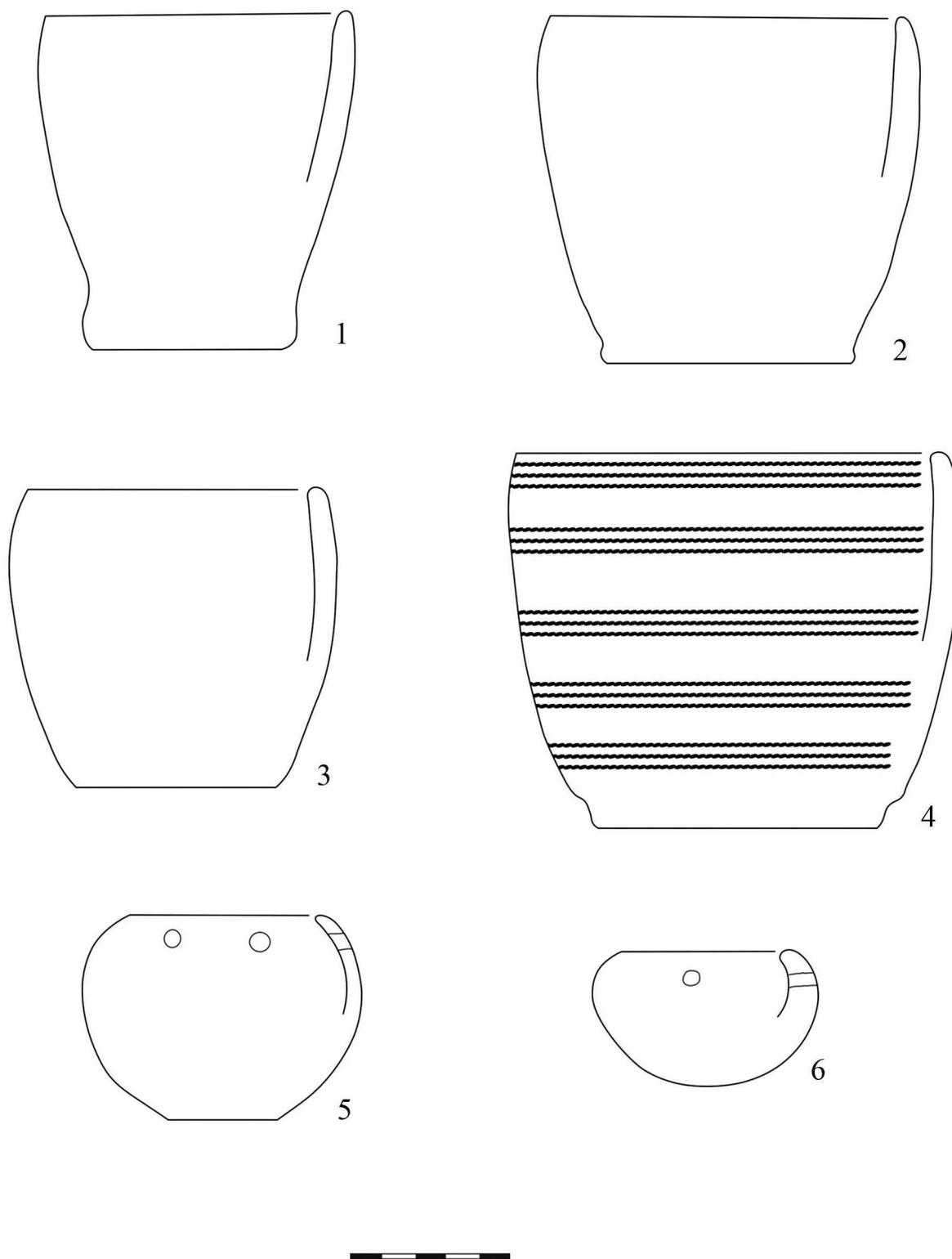


Fig. 87. Bowls D and E types

1 – Alkalia 4/2; 2 – Novogradkivka 4/6; 3 – Tochile-Răducani 1/6; 4 –
Purcari 3/9; 5 – Poliove 2/6; 6 – Bilolissia 3/8

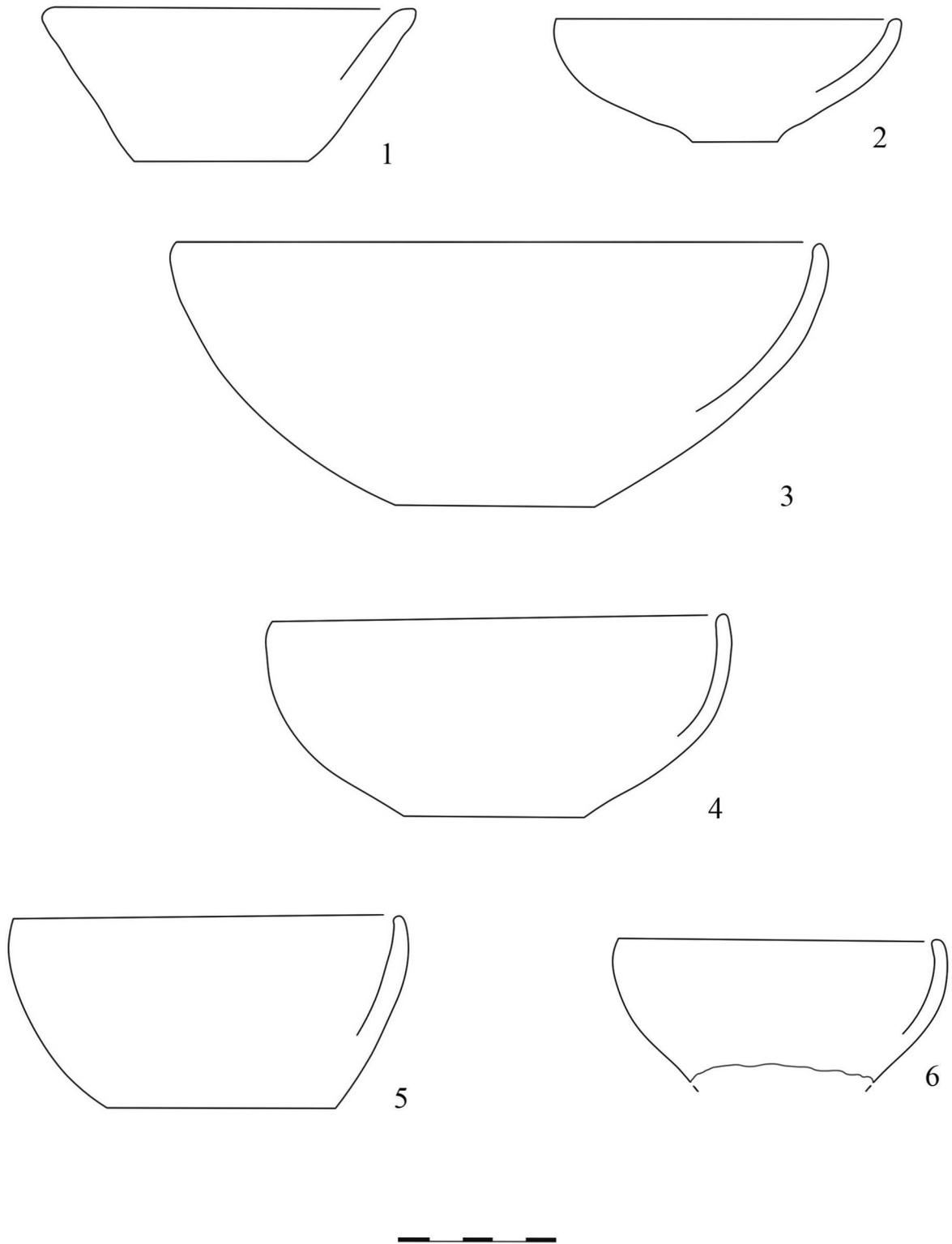


Fig. 88. Dishes B I type

1 – Sevirova 1/2; 2 – Kovalivka VIII 1/12; 3 – Kholmske 5/14; 4 – Feștelița
1/2; 5 – Efymivka 3/5; 6 – Plavni 13/3

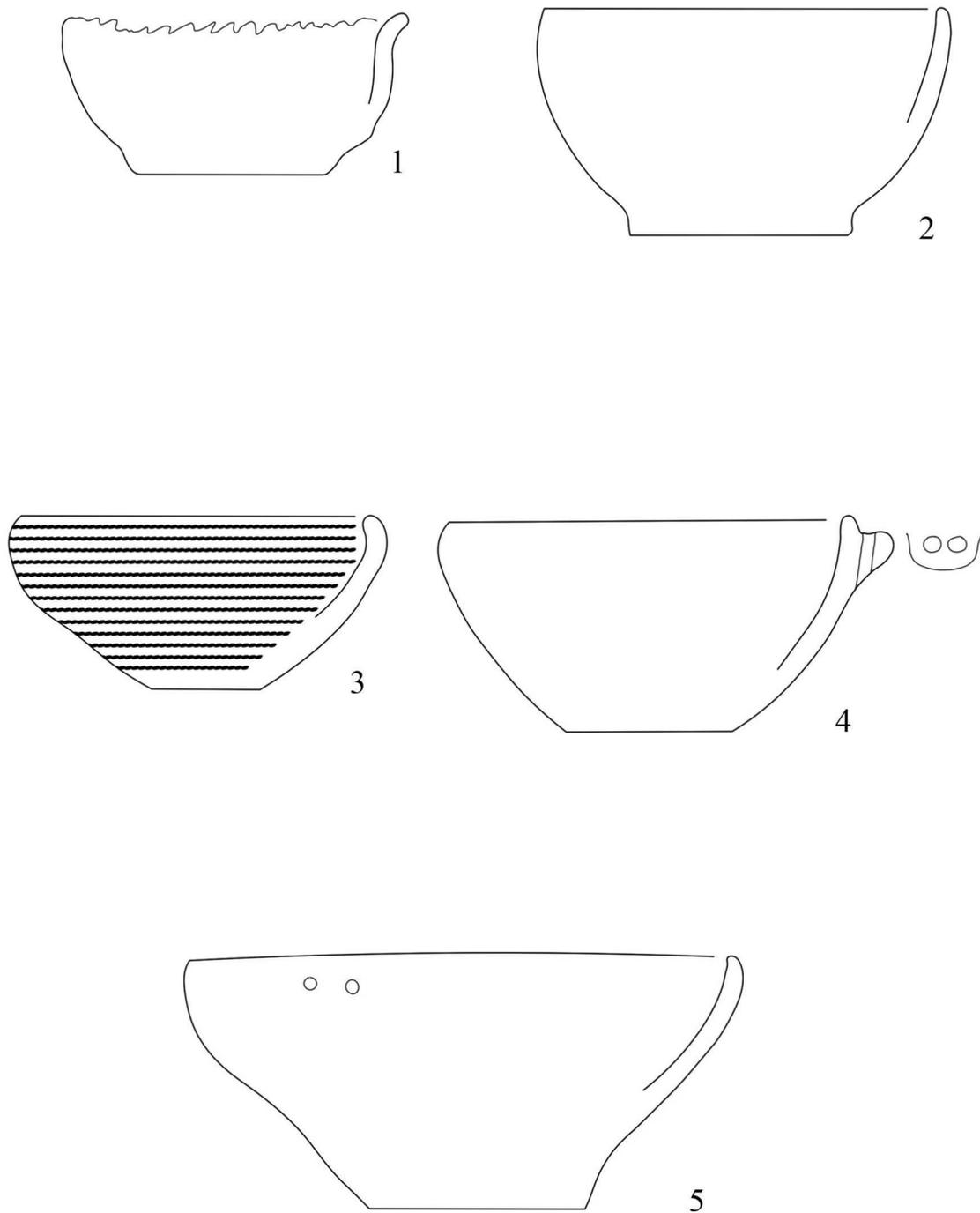


Fig. 89. Dishes B I and B II types

1 – Corjova 2/6; 2 – Răscăieții Noi 2/12; 3 – Mayaky III 1/8; 4 – Biliaivka 1/20;
 5 – Prymorske 1/34

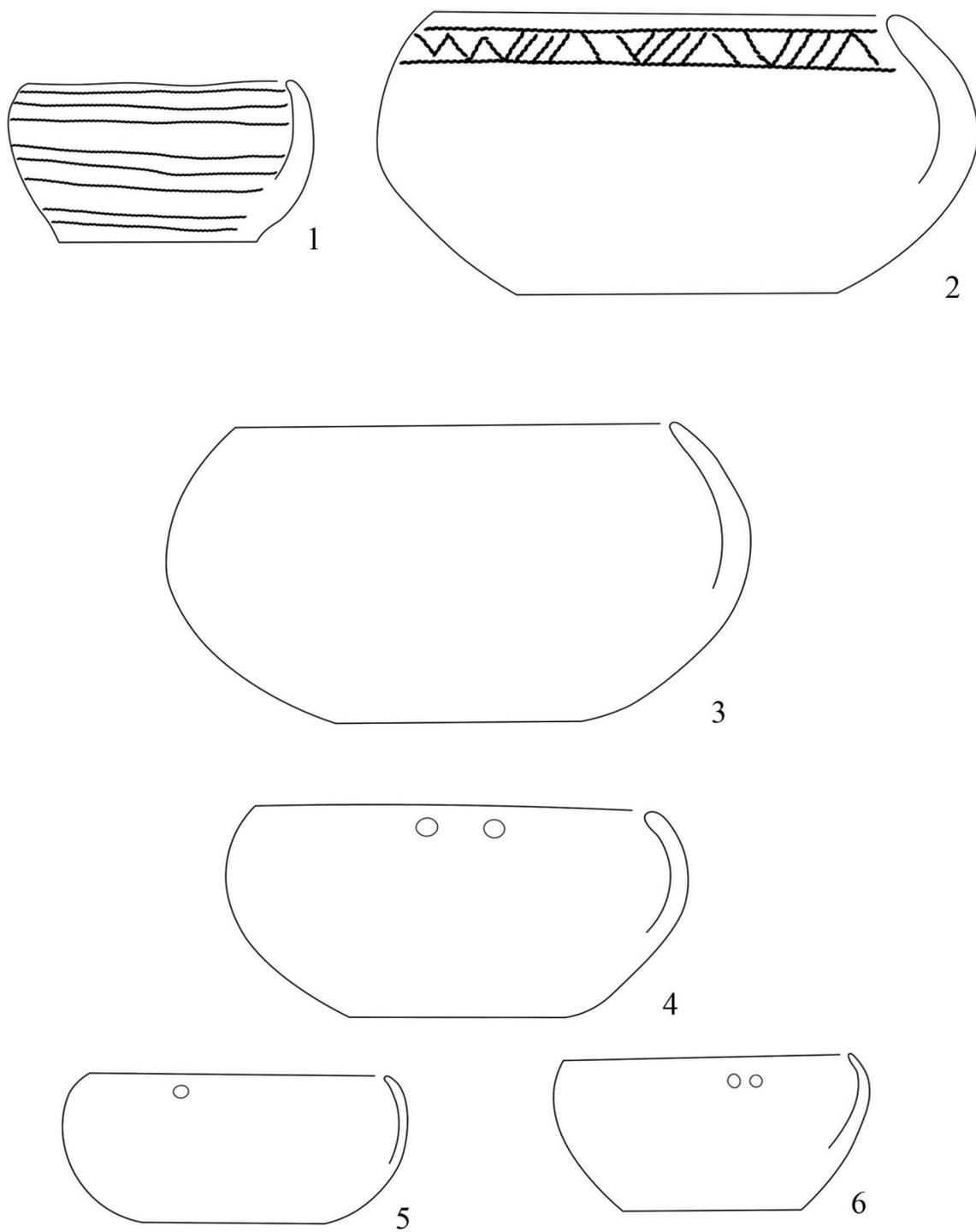


Fig. 90. Dishes B III type

1 – Novogradkivka 5/4; 2 – Mykhaylivka 3/12; 3 – Alkalia 8/3; 4 – Hagimus 2/13; 5 – Cioburciu 4/6; 6 – Novogradkivka 5/3

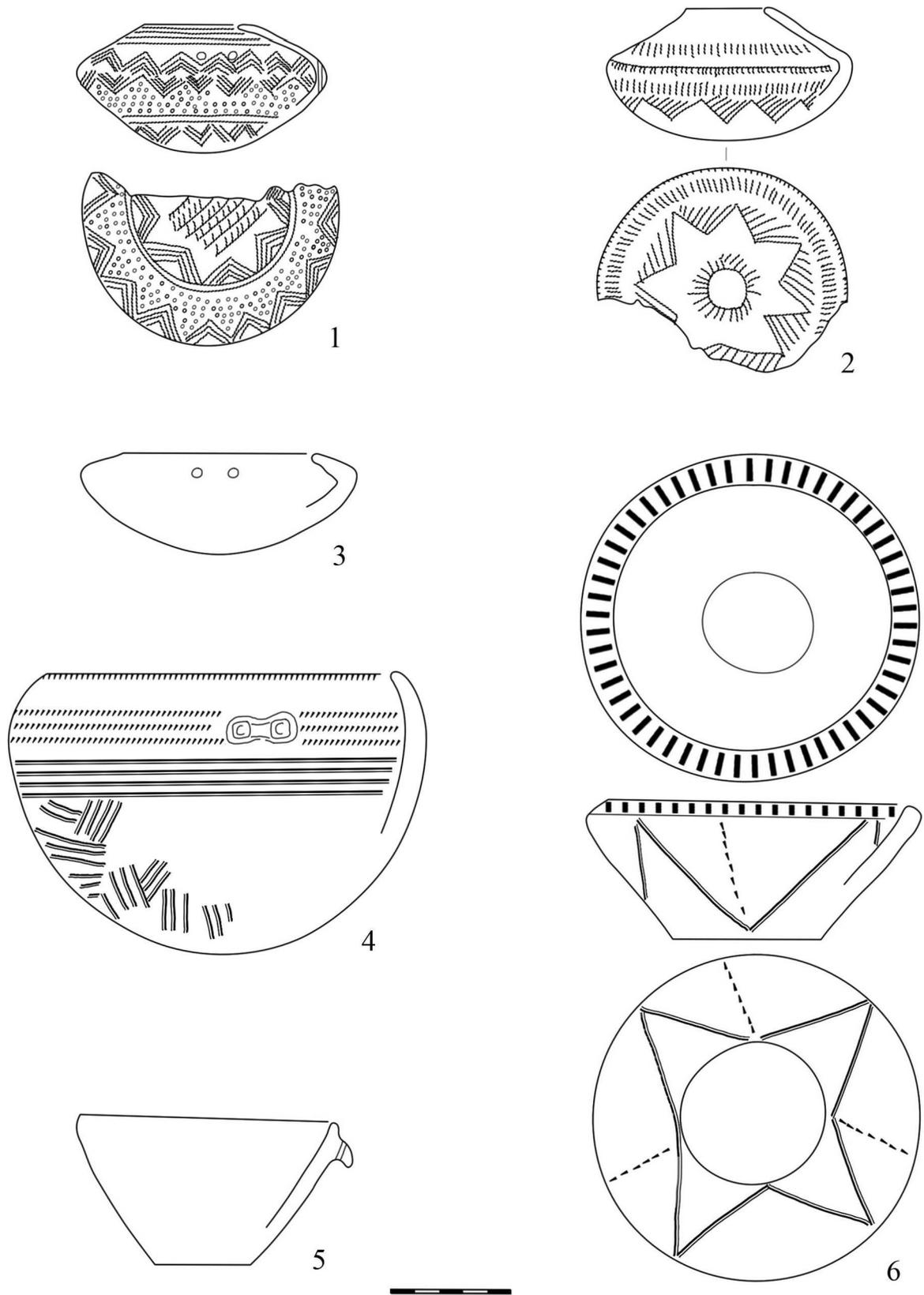


Fig. 91. Rare typs of pottery

1 – Svetlîi 1/10; 2 – Kurchi 3/8; 3 – Hlinaia “Dot” 1/6; 4 – Talmaza 3/15;
 5 – Biliaivka 1/20; 6 – Copceac 3/7

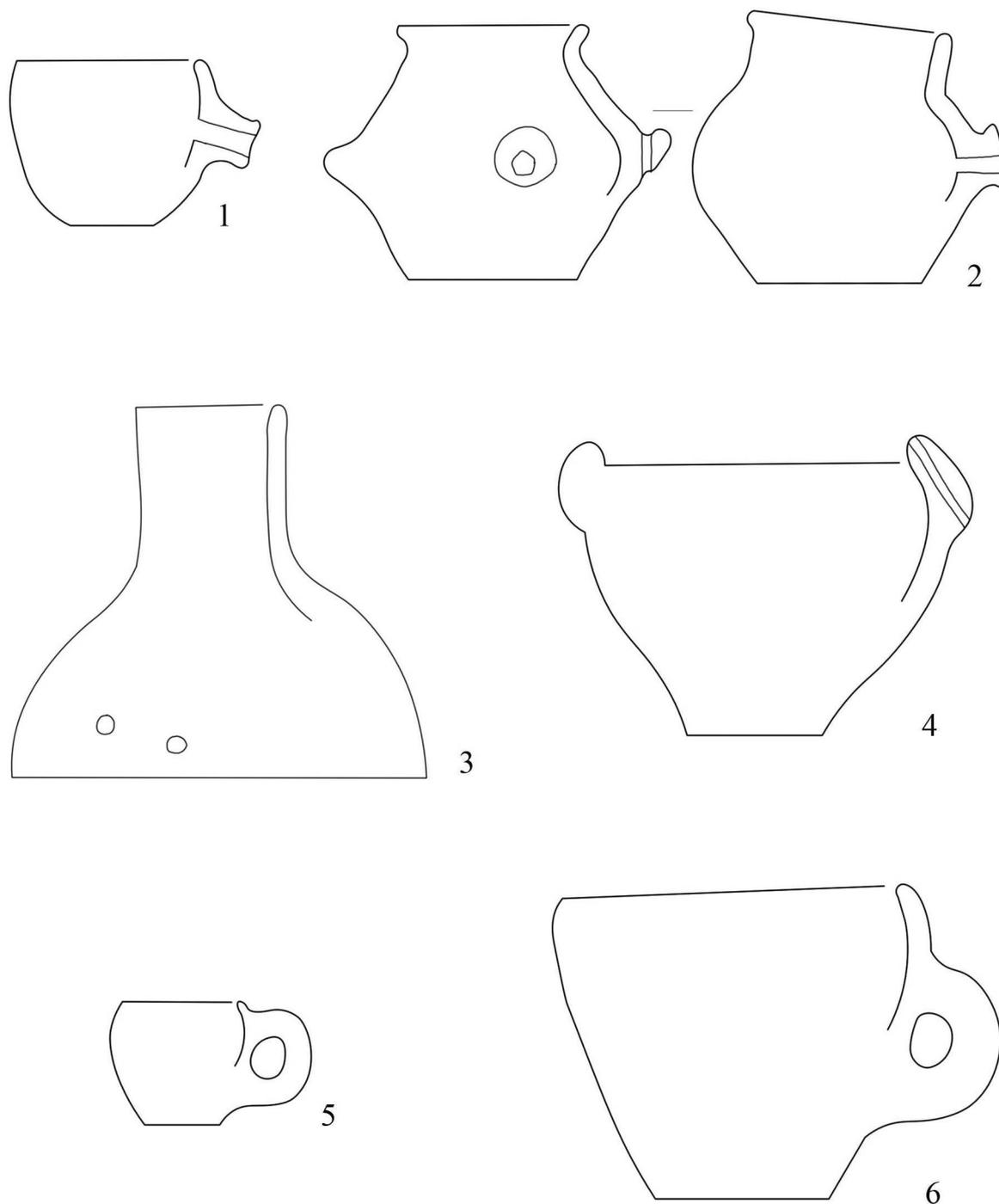


Fig. 92. Rare types of pottery

1 – Tudora II 1/1; 2 – Bilolissia 3/15; 3 – Novogradkivka 1/10; 4 – Vyshneve 17/36; 5 – Novogradkivka 2/9; 6 – Vyshneve 54/1

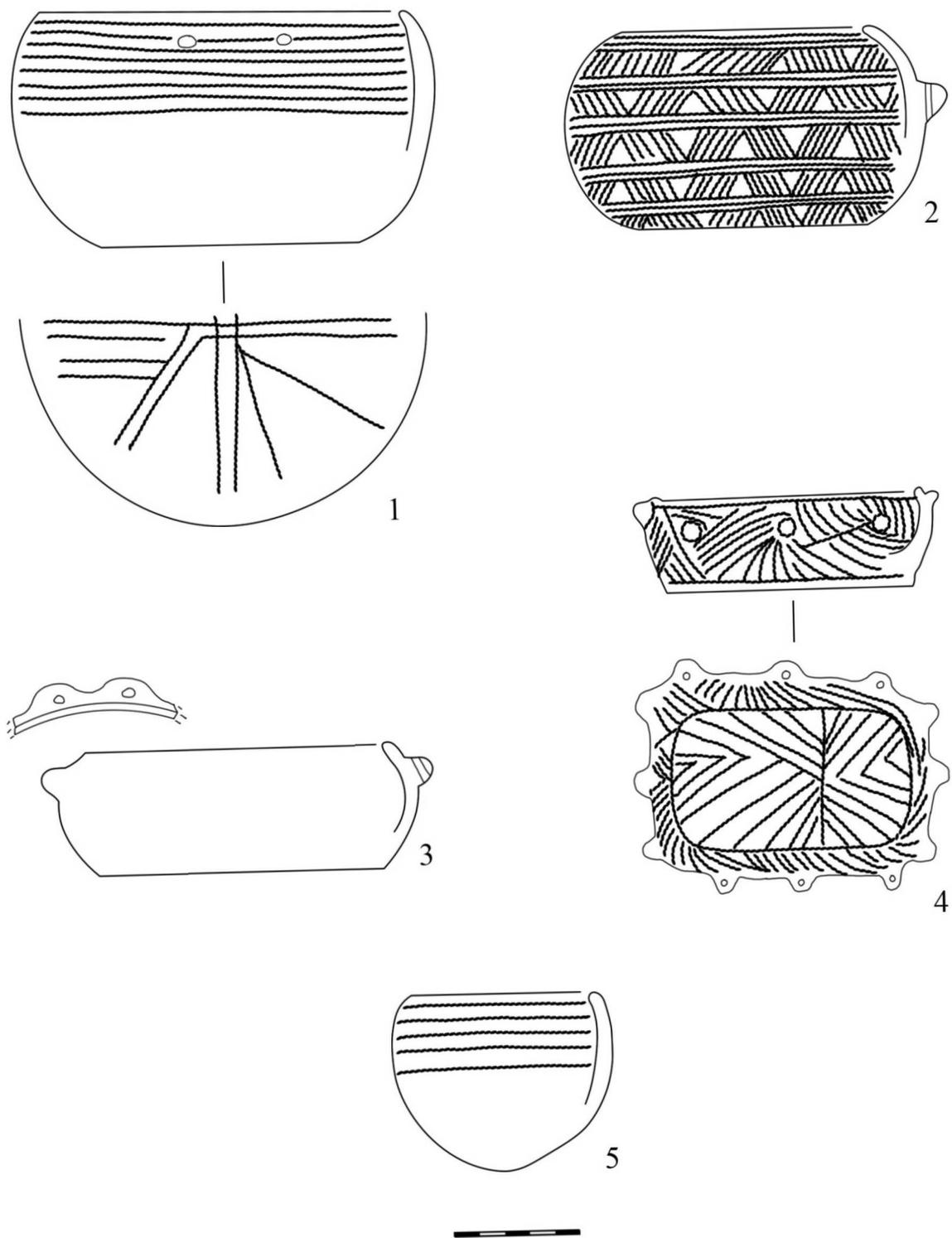


Fig. 93. Rare types of pottery

1,2 – Poliove 1/8; 3 – Dubăsarii Vechi 1.28; 4 – Grigorăuca 1/8; 5 – Nerushay

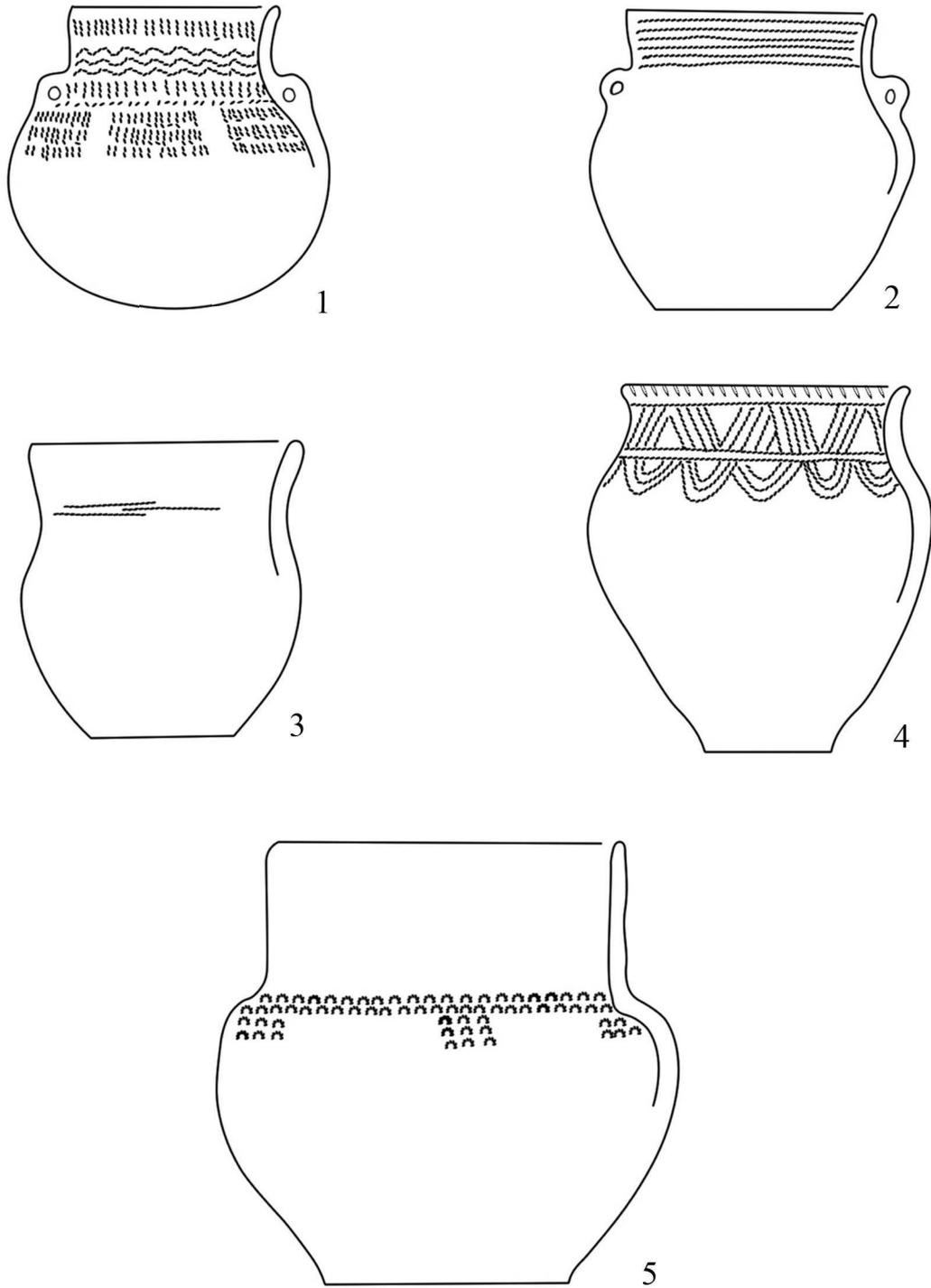


Fig. 94. Globular Amphora Culture pottery

1 – Mocra 3/4; 2 – Pererîta 1/9; 3 – Camenca 445/6; 4 – Orhei-Mitoc 1/3;
 5 – Camenca 445/7

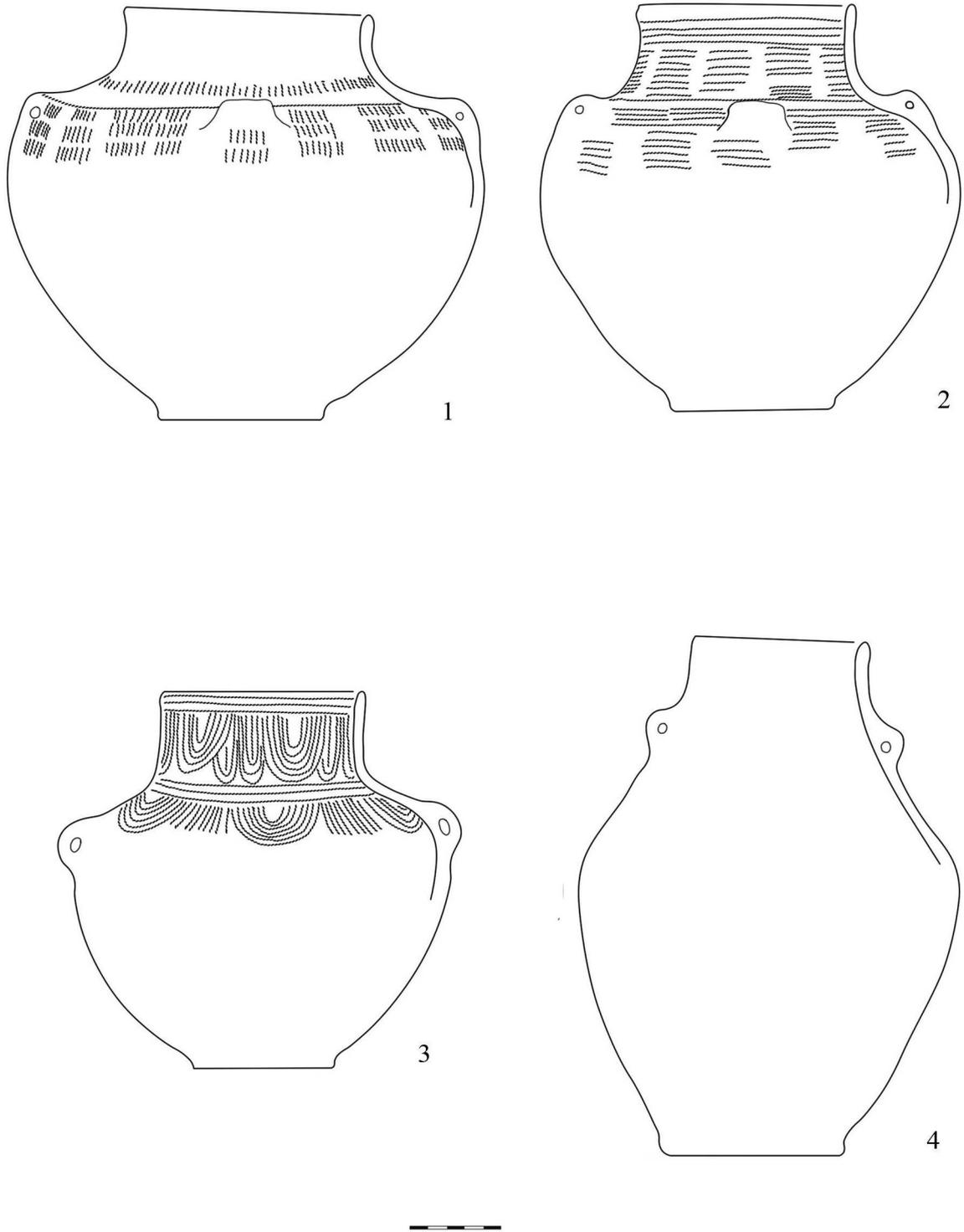


Fig. 95. Globular Amphora Culture pottery

1 – Bădragii Vechi 25/12; 2 – Ocnița 3/14; 3 – Corpaci 1/7; 4 – Mărculești 3/8



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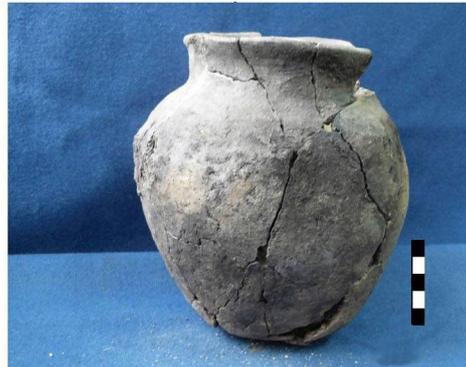
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Fig. 1. Pots from burials of Budzhak culture:
1 - Alkaliya 4/10; 2 - Vladychen 1/2; 3 - Dubinove 1/13; 4 - Efymivka 3/10;
5 - Zhovtyi Yar 8/3; 6 - Revova 3/7; 7 - Baranove 1/9; 8 - Trapivka 1/18
(OAM collection, photo by S.V. Ivanova)

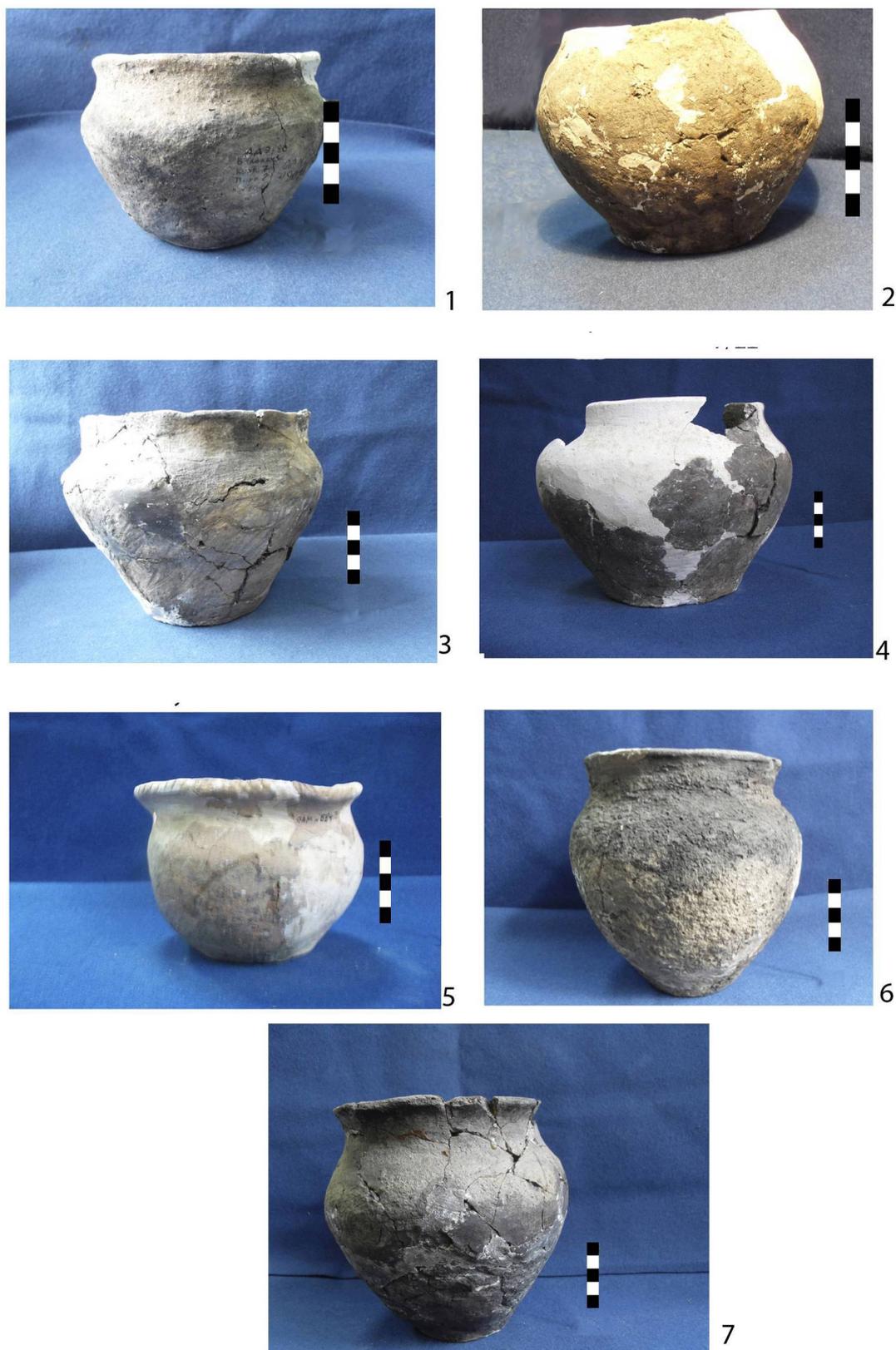


Fig. 2. Pots from burials of Budzhak culture:
 1 - Bilolissia 7/2; 2 - Vyshneve 17/22; 3 - Kubey 21/14; 4 - Semenivka 19/9; 5 - Trapivka 1/8; 6 - Trapivka 3/2; 7 -Chervonyi Yar 1, 1/6
 (OAM collection, photo by S.V. Ivanova)



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Fig. 3. Pots from burials of Budzhak culture:
1 - Semenivka 1/5; 2 - Vapniarka 4/18; 3 - Zhovtyi Yar 5/14; 4 - Dzynilor 9/14; 5.6
- Novogradkivka 1/10; 7 - Semenivka 19/5
(OAM collection, photo by S.V. Ivanova)



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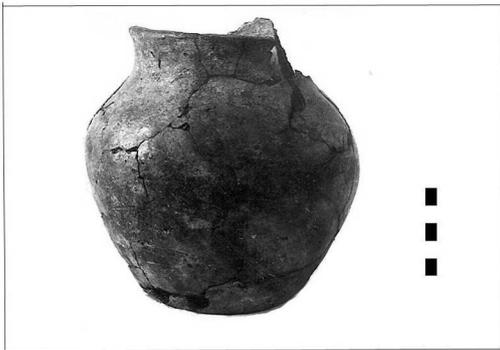
Fig. 4. Pots from burials of Budzhak culture:
1 - Vynogradivka 7/2; 2 - Glyboke 1/23; 3 - Kholmske 2/17; 4 - Mayaki 1/15;
5 - Mykolaivka 8/8; 6 - Katarzhyno 1/9
(OAM collection, photo by S.V. Ivanova)



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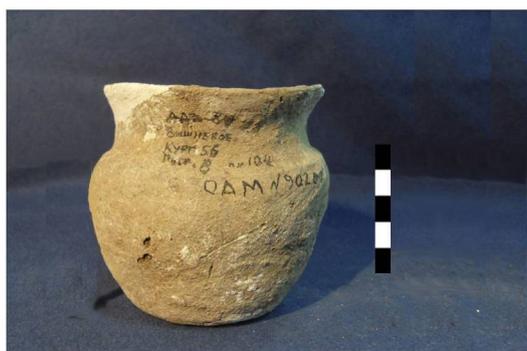


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Fig. 5. Pots from burials of Budzhak culture:
1 - Semenivka 19/3; 2 - Nagirne 14/17; 3 - Dalnik (Ovidiopol region) 1/2; 4 - Nagirne 15/7; 5 -
Semenivka 2/2; 6 - Frikatsey 4/29
(1-2,5 - OAM collection, photo by S.V. Ivanova, 3 - Subbotin, Dzigovskyi, 1989; 4 - Toshev,
1992)



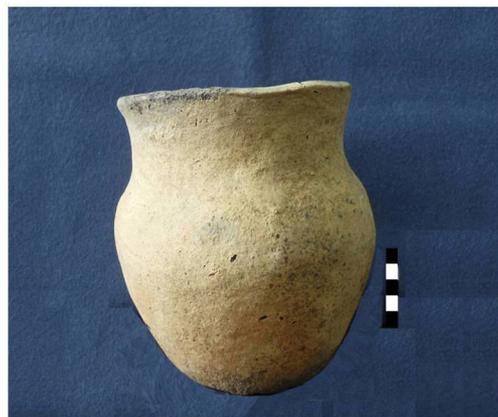
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Fig. 6. Pots from burials of Budzhak culture:
1 - Vyshneve 56/8; 2 - Grygorivka 1/3; 3 - Kubey 21/5; 4 - Mykolaivka 8/10;
5 - Nagirne 15/10; 6 - Gorodne III, 1/14;
(OAM collection, photo by S.V. Ivanova)



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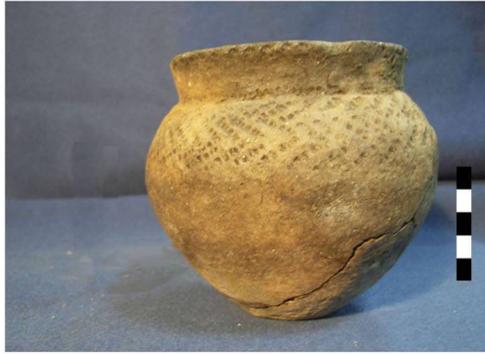
Fig. 7. Pots from burials of Budzhak culture:
1 - Alkaliya 34/5; 2 - Bilolissia 11/9; 3 - Vyshneve 52/3; 4 - Glyboke 1/11; 5 - Gradeshka 1, 5/12;
6 - Novogradkivka 2/7; 7 - Novokamyanka 1/5; 8 - Yasski 1/27
(OAM collection, photo by S.V. Ivanova)



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Fig. 8. Pots from burials of Budzhak culture:
1 -Nerushay 9/56; 2 - Sychavka 1/10; 3 - Chornomorka, k. 1; 4 - Plavni 9/6; 5 -
Novogradkivka 1/4; 6 - Petrodolinske 1/4; 7.8 - Mresonota Mogyla 1/3
(OAM collections, photo by S.V. Ivanova)



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Fig. 9. Jars from burials of Budzhak culture:
1.2 - Alkaliya 5/3; 3 - Alkaliya 34/6; 4 - Bashtanivka 4/25; 5 - Plavni 15/55; 6 - Vyshneve 17/36
(OAM collection, photo by S.V. Ivanova)



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Fig. 10. Jars from burials of Budzhak culture:
1 - Trapivka 1/8; 2 - Kholmske 1/4; 3 - Semenivka 8/16; 4 - Frikatsey 10/14; 5 - Efymivka 2/23; 6 - Plavni 15/5; 7 - Revova 3/7; 8 - Semenivka 2/2
(OAM collections, photo of S.V. Ivanova)



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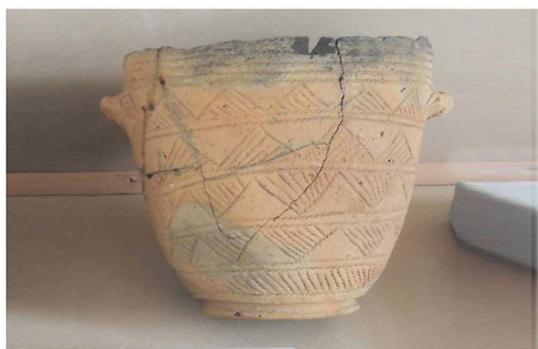


8

Fig.11. Jars from burials of Budzhak culture:
1 - Alkaliya 5/6; 2 - Efymivka 6/6; 3.4 - Dyvisiya II, 6/3; 5 - Zhovtyi Yar 3/12;
6 - Semenivka 19/4; 7 - Semenivka 12/2; 8 - Yasski 6/14
(OAM collections, photo by S.V. Ivanova)



Fig.12. Jars from burials of Budzhak culture:
 1 - Grygorivka 1/12; 2-4 - Glyboke 1/25; 5 - Nerushay 9/74; 6 - Nerushay 9/56;
 7-8 -Plavni 12/5
 (OAM collection, photo by S.V. Ivanova)



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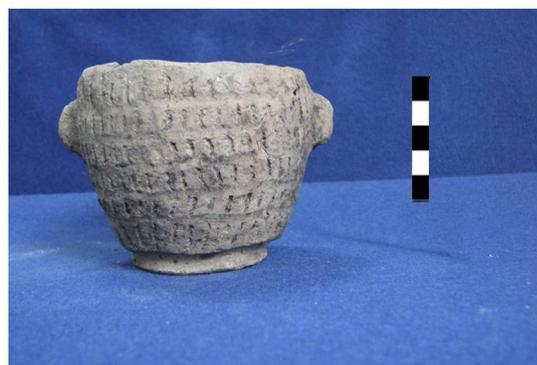
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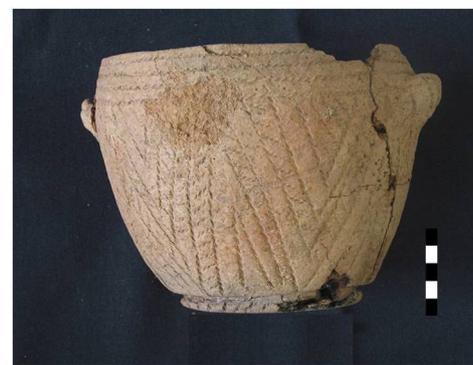
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Fig.13. Jars from burials of Budzhak culture:
1 - Semenivka 8/18; 2 - Chervonyi Yar 1, 1/2; 3,4 - Sergiivka 11/7; 5 - Yasski 3/6;
6 - Sychavka 1/15; 7 - Efymivka 2/14
(OAM collections, photo of S.V. Ivanova)



Fig. 14. Amphorae from burials of Budzhak culture:
 1 - Mologa 2/3; 2 - Nagirne 15/7; 3-6 - Novokamyanka 1/5; 7 - Semenivka 14/5;
 8 - Strumok 1/16
 (OAM collection, photo by S.V. Ivanova)



Fig. 15. Amphorae from burials of Budzhak culture:
 1 - Vyshneve 17/4; 2 - Vyshneve 52/40; 3 - Lyman 3A/17; 4 - Novokamyanka, k. 1, embankment; 5- Semenivka 2/6; 6-Dobrooleksandrivka 1/3; 7 - Baranove 1/9; 8 - Kholmske 1/21 (OAM collection, photo by S.V. Ivanova)



Fig. 16. Amphorae from burials of Budzhak culture:
 1 - Vladychen 1/2; 2 - Semenivka 19/5; 3.4 - Dzynilor 9/12; 5.6 - Novokamyanka 1/13; 7 -
 7 - Plavni 5/3
 (OAM collection, photo by S.V. Ivanova)



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Fig.17. Amphorae from burials of Budzhak culture:
1.2 - Alkaliya, k.25, ditch; 3 - Vyshneve 11/4; 4 - Gradeshka 1, 5/2; 5 - Bolgrad 3/2; 6 - Bolgrad 4/2; 7.8 - Bolgrad 5/6
(OAM collections, photo by S.V. Ivanova)



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Fig. 18. Amphorae and funnels from burials of Budzhak culture
1 - Bashtanivka 7/12, 2 - Velykodolynske 1/13; 3 - Dyvisiya II, 1/7; 4 - Semenivka 19/4;
5 - Novogradkivka 1/10; 6 - Novogradkivka 1/4
(OAM collection, photo by S.V. Ivanova)



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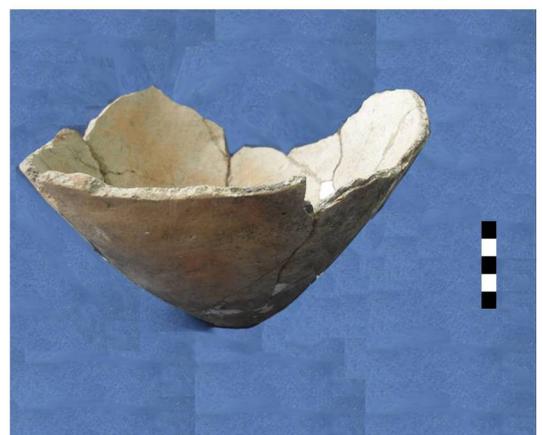


Fig. 19. Amphorae from burials of Budzhak culture
1,2 - Ostrivne 2/2; 3 - Yasski 5/26; 5 - Gradeshka 1, 5 /1; 6 - Bilolissia, k.l, embankment
(OAM collection, photo S.V. Ivanova)



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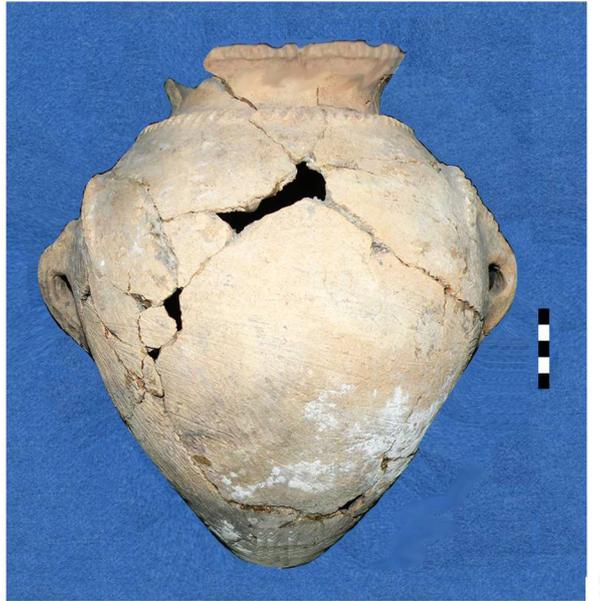
Fig.20. Amphorae from burials of Budzhak culture:
1,2 - Efymivka 10/7; 3,4 - Gorodne III, k. 1, embankment
(OAM collections, photo by S. V. Ivanova)



Fig. 21. Ovoid amphorae from the burials of the Budzhak culture:
 1-5 - Gradeshka 1, 5/11; 6 - Kurchi 1, 1/6
 (OAM collection, photo by S.V. Ivanova)



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Fig. 22. Amphorae from burials of Budzhak culture:
1.2 - Camenka/Oknitsa 6/18; 3.4 - Camenka/Oknitsa 3/13
(Collection of the Institute of Archaeology and Ancient History of the Republic of Moldova,
photo S.M. Agulnikov)



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Fig. 23. Beakers from burials of Budzhak culture:
1,2 - Dyviziya II, 2/5; 3 - Myrne 1/12; 4 - Kurchi 3/11; 5 - Khadzhider 2/3;
6 - Yasski 5/24; 7 - Glyboke 2/8; 8 - Kamyanka, k.1, embankment
(OAM collection, photo by S.V. Ivanova)



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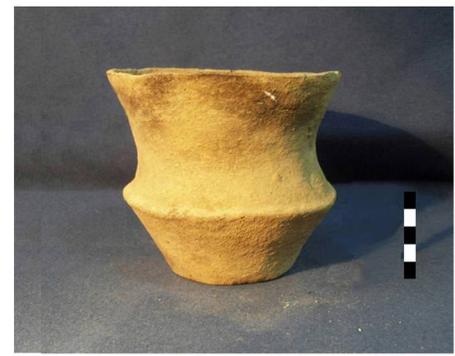
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Fig. 24. Beakers from burials of Budzhak culture:
1 - Bashtanivka 7/12; 2 - Trapivka 6/20; 3 - Efymivka 9/17; 4 - Trapivka 4/5;
5 - Kurchi 3/9; 6 - Kholodna Balka 1/13; 7 - Mykolaivka 8/10; 8 - Kholmske 1/16
(OAM collection, photo by S.V. Ivanova)



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Fig.25. Beaker-like vessels from burials of Budzhak culture:
1 - Mologa 2/3; 2,3 - Glyboke, k.2, embankment, 4 - Ostrivne, k. 2,
embankment; 5 - Bashtanivka 7/21
(OAM collection, photo by S.V. Ivanova)

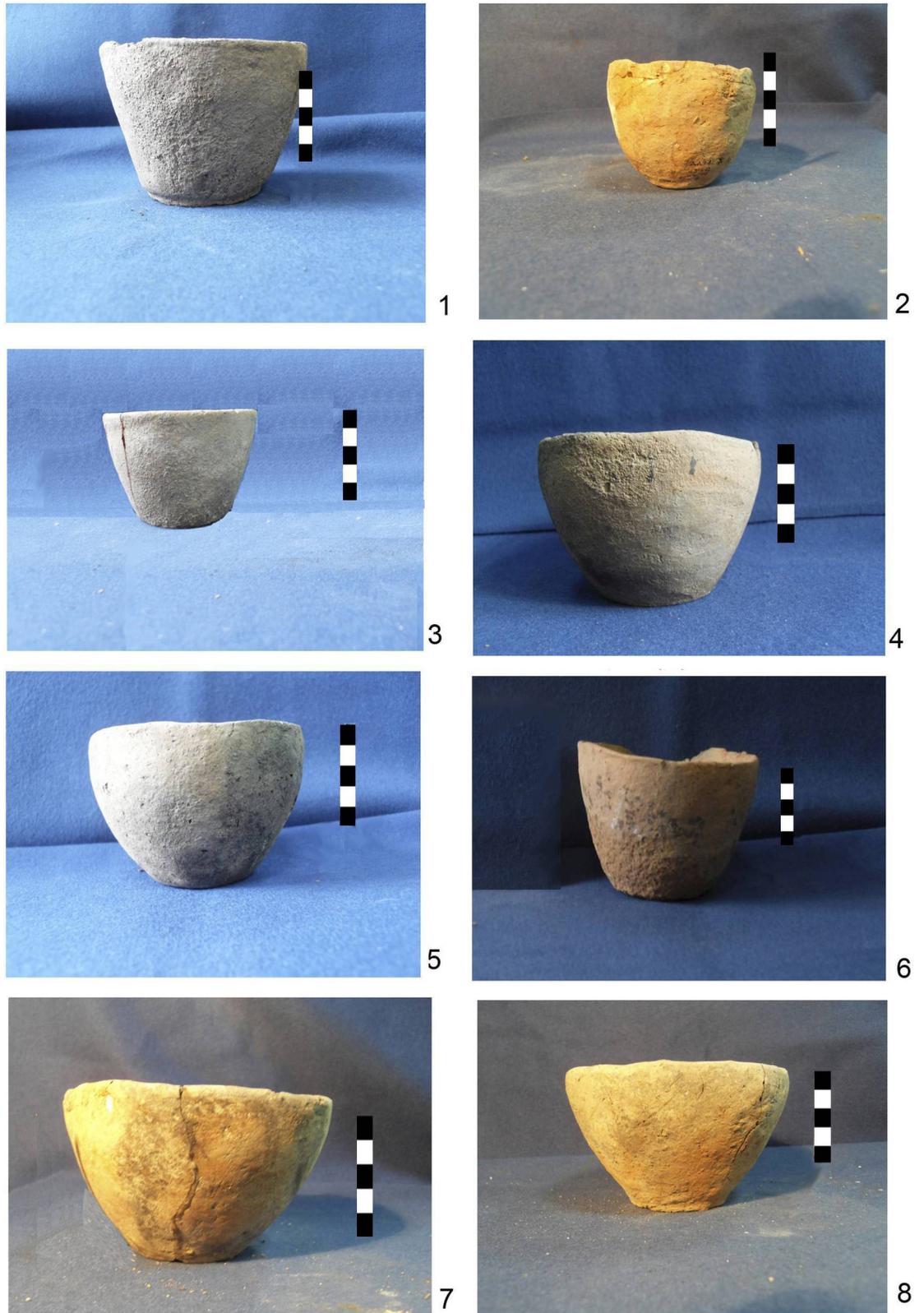


Fig.26. Bowls from burials of Budzhak culture:
 1 - Efymivka 3/4; 2 - Zhovtyi Yar 3/12; 3 - Chervonyi Yar 1, 1/2; 4 - Lyman 2/3;
 5 - Sanzheyka 1/12; 6 - Mykolaivka 8/11; 7 - Yasski 2/10; 8 - Vynogradivka 1/3
 (OAM collection, photo by S.V. Ivanova)



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Fig. 27. Bowls from burials of Budzhak culture:
1 - Artsyz 1/22; 2 - Mykolaivka 2/6; 3 - Plavni 1/6; 4 - Novogradkivka 1/10;
5 - Strumok 1/16; 6 - Strumok 1/16; 7 - Nerushay 10/10
(OAM collection, photo by S.V. Ivanova)

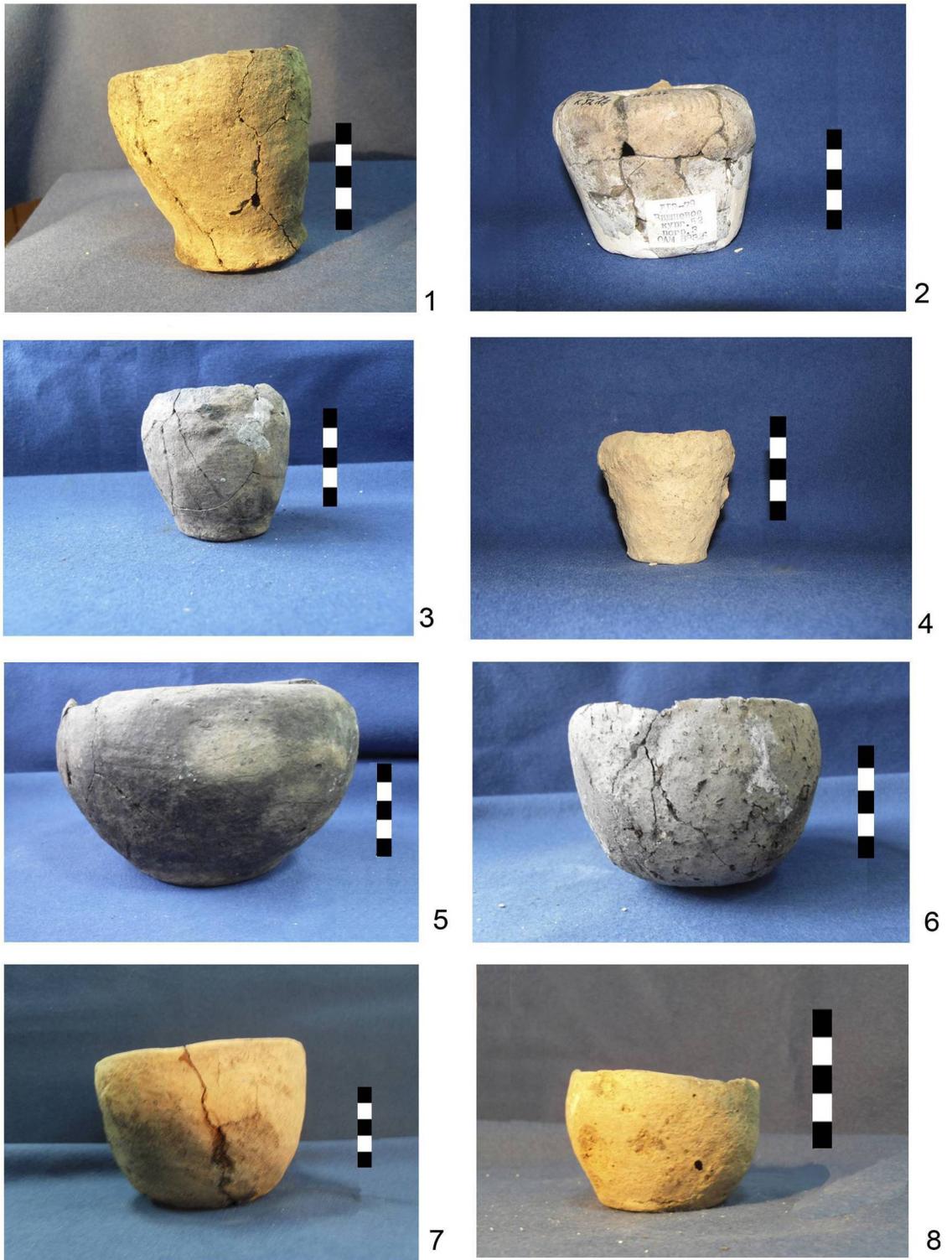


Fig. 28. Bowls from burials of Budzhak culture:
 1 - Alkaliya 4/2; 2 - Vyshneve 52/3; 3 - Mayaki 1/18; 4 - Nagirne 14/16; 5 - Borysivka 8/7;
 6 - Odessa barrow; 7 - Biliayivka 1/34; 8 - Kholmske 2/7
 (OAM collection, photo by S.V. Ivanova)



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Fig. 29. Bowls from burials of Budzhak culture:
1-4 - Kurchi 3/8; 5 -7 - Novogradkivka 2/9; 8 - Bolgrad 5/6
(OAM collection, photo by S.V. Ivanova)

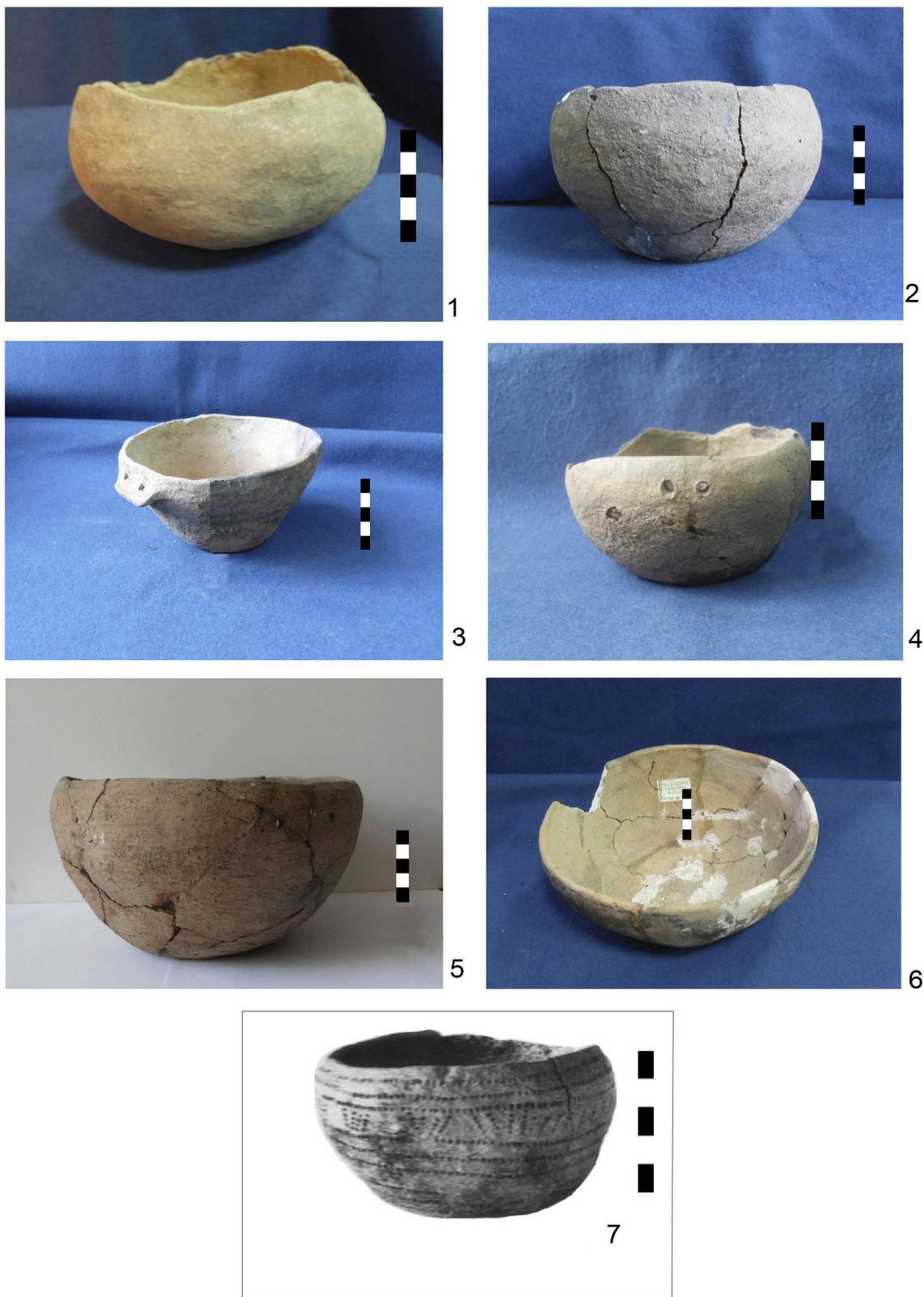


Fig. 30. Dishes from burials of Budzhak culture:
 1 - Alkaliya 8/3; 2 - Efymivka 3/15; 3 - Biliayivka 1/20; 4 - Novogradkivka 5/3;
 5 - Kholmske 2/8; 6 - Kholmske 5/14; 7 - Novogradkivka 5/4
 (OAM collection, 1-6 - photo by S.V. Ivanova; 7 - Subbotin et al., 1986)



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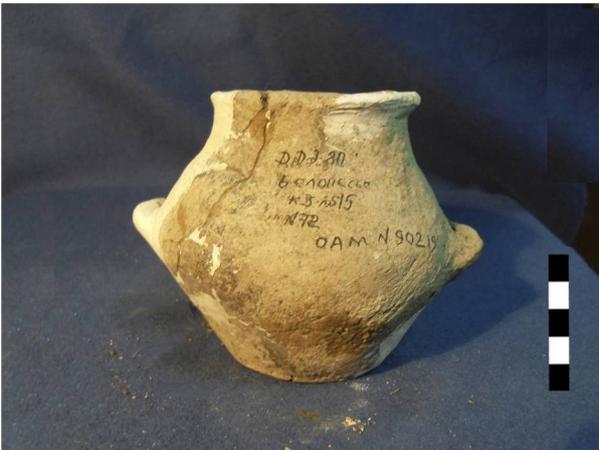
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Fig. 31. Jugs from burials of Budzhak culture:
1-4 - Strumok 1/3; 5,6 - Bilolissia 3/15
(OAM collection, photo by S.V. Ivanova)



Fig. 32. Jugs and mugs from burials of Budzhak culture:

1 - Glyboke 1/24; 2 - Frikatsey 1/5; 3 - Novogradkivka 2/9; 4 - Nova Dolyna 3/5;
 5,6 - Mayaki 1/18; 7 - Vyshneve 54/1; 8 - Novogradkivka 2/9
 (OAM collection, photo by S.V. Ivanova)



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Fig. 33. Rounded-bottom vessels from burials of Budzhak culture:
1-3 - Gradische 1/16; 4 - Dalnik 3/3; 5,6 - Dalnik 1/3; 7 - Nerushay 9/49; 8 -Sergiivka 10/10
(1-3 - collection of Institute of Archaeology and Ancient History of the Republic of Moldova,
photo by S.M. Agulnicov; 4-8 - OAM collection, photo by S.V. Ivanova).



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Fig. 34. Askoses from burials of Budzhak culture:
1,2 - Dyviziya II, 5,7; 3-4 - Kubey 21/5; 5 - Vapniarka 4/18
(OAM collection, photo by S.V. Ivanova)



Fig. 35. Ask from Matroska, kurgan 1
(OAM collection, 1- after Bruyako, Samoylova 2013;
2,3 - photo by S.V. Ivanova)