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Bronze objects discovered in the settlements of the Noua-Sabatinovka cultures from the collection of the National Museum of History of Moldova

Keywords: metal items, Late Bronze Age, Noua-Sabatinovka cultures, Republic of Moldova.

Cuvinte cheie: obiecte din metal, perioada târzie a epocii bronzului, culturile Noua-Sabatinovka, Republica Moldova.

Ключевые слова: металлические изделия, эпоха поздней бронзы, культуры Ноуа-Сабатиновка, Республика Молдова.

Mariana Sîrbu, Denis Topal, Eugen Sava, Lazar Dermenji

Bronze objects discovered in the settlements of the Noua-Sabatinovka cultures from the collection of the National Museum of History of Moldova

The bronze objects attributed to the Noua-Sabatinovka cultural assemblage come largely from hoards or are stray finds, very rarely being found in settlements. Over 70 bronze pieces discovered in settlements or by chance (except for those in hoards) are stored in the National Museum of History of Moldova. The present paper introduces this collection of objects, as well as the chemical analysis of the metal alloy, which will elucidate some aspects related to the spread of metals in the settlements of Noua-Sabatinovka in the western part of this cultural community. The distribution by categories of the pieces discovered in the settlements, places the tools on the first position (30 units), followed by ornaments (25 units) and weapons (3 units). Except for uncleaned objects, the least impurities (Sn: 0.5-1.2%; Pb: 0.35-1.2%) were found on a piece of wire, pins, a Rollenadel type pin and bracelet and most impurities (Sn: 13-16%; Pb: 5.3-5.6%) were found on awls, knives and pins with ring heads. At the same time, the average values of tin are almost the same for tools and adornments and amount to about 7%; the values of lead, arsenic and antimony being visibly higher for tools (especially knives). The awls are among the tools in whose composition the tin can amount to 10-11%, the average values of this metal being lower in the case of pins and knives. In the category of ornaments, the tin content of the alloy is usually below average, although there are samples with a tin content of 8-13%. We mention that most of the bronze objects discovered in the Noua-Sabatinovka settlements are of western origin, analogous to those in Transylvania, but there are also items of Eastern origin – from the Dnieper region, such as daggers.

Mariana Sîrbu, Denis Topal, Eugen Sava, Lazar Dermenji

Piese de bronz descoperite în așezările culturilor Noua-Sabatinovka din colecția Muzeului Național de Istorie a Moldovei

Obiectele din bronz atribuite complexului cultural Noua-Sabatinovka, provin în mare parte, din depozite sau descoperiri întâmplătoare, foarte rar fiind depistate în așezări. În colecțiile Muzeului Național de Istorie a Moldovei se păstrează peste 70 de piese din bronz descoperite în așezări sau întâmplător (cu excepția celor din depozite). Lucrarea de față vine să prezinte acest lot de obiecte și rezultatele analizei chimice a metalului din care au fost confecționate, ceea ce va permite elucidarea unor aspecte ce țin de răspândirea metalului în așezările Noua-Sabatinovka din arealul vestic al acestui complex cultural. Repartizarea pe categorii a pieselor descoperite în așezări poziționează pe primul loc uneltele (30 unități), urmate de podoabe (25 unități) și arme (3 unități). Cu excepția obiectelor necurățate, cele mai puține impurități (Sn: 0,5-1,2%; Pb: 0,35-1,2%), au fost fixate pentru un fragment de sârmă, ace simple, un ac de tip Rollenadel și o brățară, iar cele mai multe impurități (Sn: 13-16%; Pb: 5,3-5,6%) pentru împungătoare, cuțite și ace cu capătul inelar. În același timp, valorile medii ale staniului sunt aproape aceleași pentru unelte și bijuterii și se ridică la aproximativ 7%, conținutul de plumb, arsenic și antimoniu fiind vizibil mai mare pentru unelte (în special cuțite). Printre acestea se evidențiază împungătoarele în compoziția cărora staniul poate fi de 10-11%, conținutul mediu al acestui metal fiind mai mic în cazul acelor și cuțitelor. La categoria podoabe, conținutul staniului în aliaj este, de regulă sub medie, deși există mostre cu un conținut de staniu de 8-13%. Menționăm că, majoritatea obiectelor din bronz descoperite în așezările Noua-Sabatinovka sunt de origine vestică, analogice celor din Transilvania, dar sunt prezente și piese de proveniență estică, ca de exemplu, pumnalele din regiunea Niprului.

Мариана Сырбу, Денис Топал, Еуджен Сава, Лазар Дерменжи

Бронзовые изделия поселений культуры Ноуа и Сабатиновка из коллекции Национального музея истории Молдовы

Бронзовые изделия культурного комплекса Ноуа-Сабатиновка-Кослоджен, в основном, происходят из кладов или являются случайными находками, при этом, очень редки на поселениях. Зачастую они представлены булавками, шильями, долотами, иногда украшениями, ножами, кинжалами или кельтами. В фондах Национального музея истории Молдовы хранятся более 70 подобных предметов, часть из которых была опубликована ранее. В задачи данной работы входит обзор этой коллекции, а также публикация результатов анализа химического состава, что позволит

уточнить некоторые детали распространения металла на поселениях культур Ноуа-Сабатиновка в западной части ареала культурного комплекса Ноуа-Сабатиновка-Кослдожень. Исходя из распределения анализируемых объектов по категориям, можно отметить, что орудия труда наиболее многочисленны (30 экз.). За ними следуют украшения (25 экз.) и предметы вооружения (3 экз.). Эти металлические предметы, которые очень редко встречаются в закрытых комплексах, в большинстве случаев происходят из культурного слоя поселений. За исключением неочищенных предметов, наименьшее содержание примесей (Sn: 0,5-1,2%; Pb: 0,35-1,2%) зафиксировано для фрагмента проволоки, булавки типа Rollenadel, фрагмента браслета (?), иглы; самые высокие (Sn: 13-16%; Pb: 5,3-5,6%) – для прокола, булавок с кольцевыми окончаниями и ножа. При этом средние значения олова почти одинаковы для инструментов и украшений и составляют около 7%, тогда как содержание свинца, мышьяка и сурьмы заметно выше для орудий труда (особенно ножей). Среди орудий труда выделяются проколки, в составе их сплава олово может достигать 10-11%, при этом среднее содержание олова в иглах и ножах заметно ниже. В группе украшений содержание олова в сплаве булавок обычно ниже среднего, хотя встречаются образцы со значением олова 8-13%. Следует отметить, что большая часть бронзовых изделий, обнаруженных на поселениях Ноуа-Сабатиновка, имеет западное происхождение, аналогичное изделиям из Трансильвании, но есть и предметы восточного происхождения, например, кинжалы – из Поднепровья.

Most of the metal items attributed to the Noua-Sabatinovka cultures¹ come from hoards or are stray finds. In the settlements of these cultures, bronze pieces are very rare. These are usually represented by an insignificant number of objects – needles, stabs, chisels, and rarely fragments of adornments, socketed axes, knives and daggers.

More than 70 such objects are kept in the funds of the National Museum of History of Moldova (NMHM) (fig. 1); some of them were published in various papers. A few attempts have been made to systematize the artifacts discovered in settlements [Sirbu 2014, 185-201; Sirbu, Sava 2014, 481-500], but without developing a general typology and submitting data on the chemical analysis of the metal alloy. As a result, we consider it appropriate to present the lacking information in this paper. Regarding the context of the discovery of metal pieces in settlements, the vast majority come from the cultural layer. Only a few of them were discovered in assemblages: a fragment of a bracelet (pit no. 2) and a ring-headed needle (pit no. 5) in the settlement of the Noua culture at Odaia-Miciurin [Sava, Kaiser 2004, 9, fig. 42/10; 20, fig. 62/10]; a ring-headed pin (pit no. 9) in the Sabatinovka culture settlement in Taraclia-Gaid-abul [Sava et al. 2019b, 18-19, fig. 30/5, 116/3].

Below is presented the catalog of metal items by categories and types, accompanied by statistical data, description, analogues, as well as the results of chemical analyzes of these objects (tab. 1)².

2. We would like to mention that only 65 samples were subjected to chemical study and analysis, the others not being available for research while writing this paper. The analyzes were performed due to the agreement between the National

TOOLS

Socketed axe of Râșești type, one item, Isacova commune, Orhei district, stray find (cat. 46; fig. 2/1) [Dergachev 1975, 31, ris. 11/8; 2010, tabl. 2/23; Dergachev 2002, Taf. 43/E]. It has a slender hexagonal body in section, with arched facets with oval openings. On one side, the opening is framed in an oval nervure with overlapping ends. The tube for hafting has an oval shape, with a raised edge, from where the side ear is drawn. The edge of the tube has a casting defect. The blade is slightly arched and dented. Dimensions: H³: 10.7 cm; W: 3.7 cm; Wblade: 3.8 cm; Hilt: 3.6×4.9 cm. Weight: 240 g. FB-27817-4.

The Râșești type represents socketed axes with a straight and massive body, a side handle and arched facets bearing oval openings or imitations of them under the arches. Such socketed axes are rarely discovered in Noua (Poiana Dulcești, Tăvădărești, Tanacu) and Coslogeni (Radovanu) settlements in Romania [Morintz 1978, fig. 86/1; Florescu 1991, fig. 102-A/6, 105-A/11, 106-A/6], or Sabatinovka type settlements on the territory of Ukraine – at Pivdene, Antonovka, Betsilove [Cherniakov 1985, ris. 63/11-15; Dergachev 1986, ris. 52/1; 2010, 35; Sirbu 2014, 185, fig. 2/1], being

Museum of History of Moldova and the Institute of Applied Physics of the Ministry of Education and Research of the Republic of Moldova, using the AFRX Xenometrix fluorescence spectrometer “X-Calibur”. Thus, we express sincere thanks for assistance and collaboration to Dr. habilitat Leonid Culiuc – academician at the ASM, Head of “Sergiu Rădăuțan” Laboratory of Physics of Semiconductor Compounds.

3. H – height, L – length, W – width; T – thickness, D – diameter.

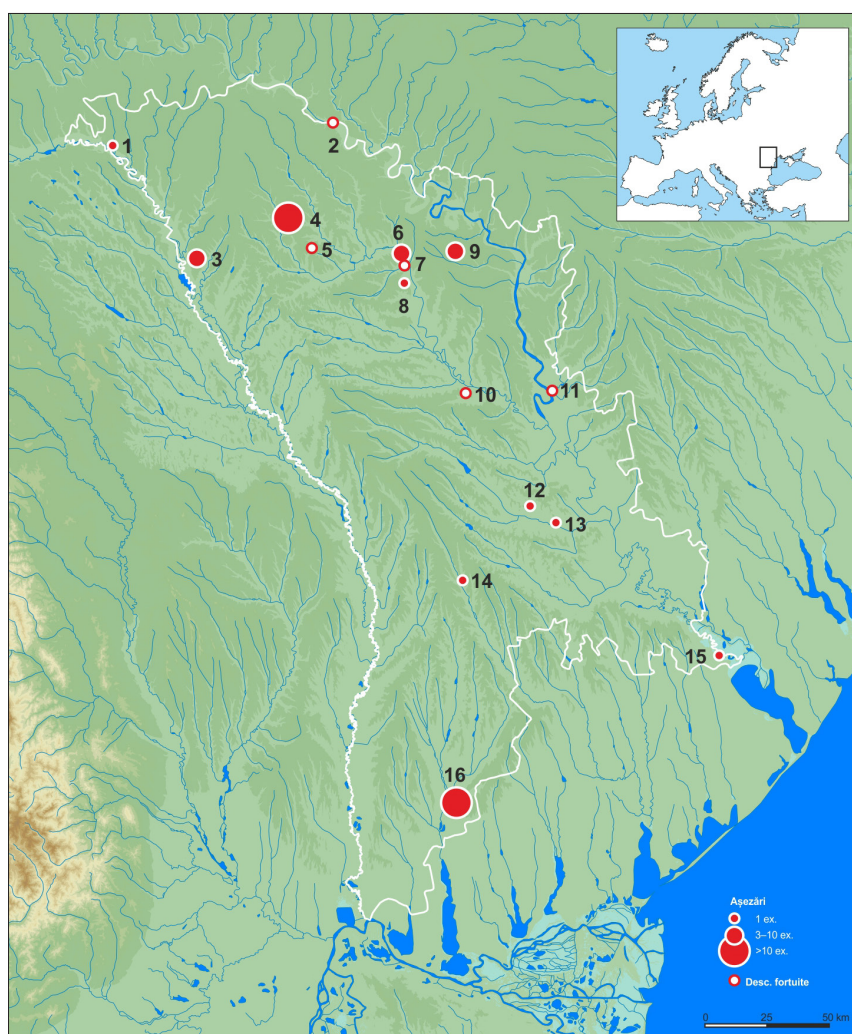


Fig. 1. Map of the Noua-Sabatinovka settlements with the finds of bronze objects: 1 – Slobodca-Șireuți, 2 – Balinți, 3 – Petrușeni, 4 – Odaia-Miciurin, 5 – Lazo, 6 – Ghindești, 7 – Ciutulești, 8 – Roșieticii Vechi, 9 – Cobilea, 10 – Isacova, 11 – Goian, 12 – Menereni, 13 – Socoleni, 14 – Gura Galbenei, 15 – Tudora, 16 – Taraclia-Gaidabul.

mostly discovered in bronze deposits [Dergachev 2010, ris. 18, tabl. 1-7]. A casting pattern with the negative of such a socketed axe was discovered at Mayaky [Bočkarov, Leskov 1980, Taf. 6/48a]. The highest concentration of this type of socketed axes is registered territorially in the central area of Moldova on the right bank of the Prut, from where it spread in the Sabatinovka cultures area, in HaA1 being present in Transylvania [Dergačev 1997, 144].

Chisels with tubes for hafting, two items.

1. *Socoleni village, Anenii Noi district, stray find* (cat. 44; fig. 2/2) [Dergachev 1975, 19, ris. 7/2]. It has a straight and slender body, with a semi-oval section at the top and a rectangular one

at the bottom, provided on one side with a groove that deepens and widens progressively towards the slightly flared blade. The tube for hafting has the edge highlighted by two slightly embossed nervures. Two other nervures descend sideways to the blade. Dimensions: H: 9.4 cm; W: 1.8 cm; Wblade: 1.7 cm; Hilt: 2.0×2.1 cm. Weight: 104 g. FB-27817-4.

2. *Taraclia-Gaidabul, Taraclia, settlement of the Sabatinovka culture* (cat. 50; fig. 3/1) [Sava et al. 2019, 18-19, fig. 116/4]. It has a straight and slender body, hexagonal at the top and rectangular at the bottom, with a groove on one side that deepens and widens progressively towards the slightly flared blade. The tube for hafting has a slightly thickened edge, below which there is an irregular

oval opening of 0.3×0.4 cm. Dimensions: H: 8.2 cm; W: 1.6 cm; WBlade: 1.4 cm; Hilt: 1.8×2.0 cm. Weight: 66 g. FB-30530-1.

Cast in bivalve molds, they have a straight, slender, or slightly flared body in the edge area, a vertical sleeve for fixing the handle and a semicircular or rectangular cross-section at the bottom [Chernykh 1976, 109-110]. A study dedicated to this type of chisels was made by E. Uşurelu [Uşurelu 2010, 8-17]. V. Dergačev attributes such chisels to the Mala Kopanya type [Dergačev 2002, 121]. Chisels with tubes for hafting were discovered in the settlements of the Noua culture on the territory of Ukraine at Mahala [Balaguri 1971, ris. 111/8; Sirbu, Sava 2014, fig. 229/2] and in Romania at Rădeni, Ruginoasa [Diaconu 2012, fig. 80/5, 9], those discovered on the territory of our country coming from the Sabatinovka culture environment. The rest of the known specimens come from bronze deposits on a vast area, between the Lower Danube and the Don River basin [Dergachev 2010, ris. 137; Sirbu 2013, 208, fig. 4/9; Topal, Sirbu 2016, fig. 5/2].

On the territory of Ukraine several forms of casting with the negative of this type of chisel are known [Bočkarev, Leskov 1980, Taf. 3/29, 36, 4/39d, 40, 11/87a-b].

Knives, 4 items.

One item, Sabatinovka culture settlement, Tudora village, Ştefan Vodă district (cat. 34; fig. 2/3) [Meliukova 1961b, 120, ris. 44/7; Dergačev 2002, Taf. 53/N]. Peduncle-free knife with a single cutting edge and a thickened lip. Dimensions: L: 8.4 cm; W: 1.1-1.3 cm; T: 0.2 cm. Weight: 6.46 g. FB-28143-5.

One item, stray find, Vărativ village, Rîşcani district. Peduncle-free knife with parallel cutting edges and a median rib on the blade (cat. 36; fig. 3/2) [Dergachev 1975, 24, ris. 10/29; Dergačev 2002, Taf. 53/M]. Dimensions: L: 10.7 cm; W: 1.4-1.7 cm; T: 0.25 cm. Weight: 12.71 g. FB-29081.

Two items, Sabatinovka culture settlement, Taraclia-Gaidabul, Taraclia town:

1. Fragment of a single-edged knife with a thickened handle (cat. 55; fig. 3/5) [Sava et al. 2019b, 18-19, fig. 175/3]. Dimensions: L: 7.0 cm; W: 1.3-1.8 cm; T: 0.2-0.4 cm. Weight: 16.36 g. FA-12297-2.

2. Rod-free knife, with parallel cutting edges and a median rib on the blade (cat. 51; fig. 3/4) [Sava et al. 2019b, 18-19, fig. 116/5]. It has an oval opening of 0.4×0.3 cm towards the tip of the blade.

Dimensions: L: 13.4 cm; W: 1.4-2.5 cm; T: 0.2-0.3 cm. Weight: 24.26 g. FB-30530-4.

The knives are present in relatively small numbers in settlements, mostly being found in deposits [Chernykh 1976, 115; Petrescu-Dîmbovița 1977, pl. 73/6-17, 100/8-11; Lazanu, Ursache 2013, pl. 9]. Several types of knives can be distinguished [Chernykh 1976, 115-122, tab. 13III]. One of the specimens discovered at Taraclia-Gaidabul and one in the Tudora settlement are included by E. Chernykh in the type H-2 [Chernykh 1976, 113]. The other two are attributed to the H-16 type [Chernykh 1976, 116]. Their analogues are known in the settlement of the Sabatinovka culture from Vyshchetarasovka [Chernykh 1976, 113] and in those of the Noua culture from Botoşana and Horoiata [Florescu 1991, fig. 99/9, 111/1].

Specific to Central European cultural environments [Dergačev 2002, 130], the knives, especially those with peduncles, have evolved over a long period, being known until HaB [Levički 1994, 128; Kaşuba 2003, fig. X/39-40; XXX/16-22; Ciugudean, Luca, Georgescu 2006, 39]. For the North Pontic region, a concentration of knives is recorded in the lower and middle Dnieper area [Chernykh 1976, ris. 48].

Sewing needles, 9 items, made of circular bronze wire in section, with one end pointed and the other provided with an opening.

Three items from the Noua settlement from Ghindeşti.

1. Sewing needle with the foot strongly bent and broken in the area of the opening (cat. 42; fig. 6/13) [Meliukova 1961a, 31, ris. 12/10; Dergačev 2002, Taf. 45/3; Sirbu 2014, fig. 3/12; Sava 2014, fig. 140/14]. Dimensions: L: 8.2 cm; D: 0.2 cm; Weight: 1.08 g. FA-11653-1.

2. Sewing needle with the foot bent towards the tip and the opposite end broken (cat. 37; fig. 6/9) [Meliukova 1961a, 31, ris. 12/11; Dergačev 2002, Taf. 45/C1; Sirbu 2014, fig. 3/4; Sava 2014, fig. 140/7]. Dimensions: L: 7.3 cm; D: 0.2 cm; Weight: 0.77 g. FA-11653-2.

3. Sewing needle with the foot slightly bent in the middle area, with one sharp end and the other with an oval-shaped opening (cat. 41; fig. 6/10) [Meliukova 1961a, 31, ris. 12/9; Dergačev 2002, Taf. 45/C2; Sirbu 2014, fig. 3/1; Sava 2014, fig. 140/10].

Dimensions: L: 9.5 cm; D: 0.25 cm; Dopening: 0.2×0.3 cm; Weight: 1.57 g. FB-29078-7.

Four items from the Noua settlement at



Fig. 2. 1 – Isacova, socketed axe, 2 – Socoleni, chisel, 3 – Tudora, knife (photos by E. Mistreanu, drawings by D. Topal).

Odaia-Miciurin, Miciurin village, Drochia district.

1. Sewing needle with the foot strongly curved towards the tip, with an oval-shaped opening at the opposite end (cat. 31; fig. 7/11) [Sava, Kaizer 2011, ris. 72/7; Sîrbu 2014, fig. 3/2; Sava 2014, fig. 92/7].

Dimensions: L: 6.0 cm; D: 0.3 cm; Dopening: 0.2×0.3 cm; Weight: 1.53 g. FB-28535-8.

2. Sewing needle with a slightly curved foot, broken tip and opposite end with an opening (covered with patina) (cat. 21; fig. 6/8) [Sava, Kaizer 2011, ris. 72/5; Sîrbu 2014, fig. 3/6; Sava 2014, fig. 92/5]. Dimensions: L: 7.5 cm; D: 0.3 cm; Weight: 1.52 g. FA-11626-77.

3. Sewing needle with the foot strongly bent in the upper half, with an oval-shaped opening

(cat. 19; fig. 7/6) [Sava, Kaizer 2011, ris. 72/8; Sîrbu 2014, fig. 3/3; Sava 2014, fig. 92/8]. Dimensions: L: 6.0 cm; D: 0.3 cm; Dopening: 0.2×0.4 cm. Weight: 2.46 g. FB-29036-4.

4. Sewing needle with a curved foot, one sharp end and the other end broken (cat. 23; fig. 7/7) [Sava, Kaizer 2011, ris. 72/15; Sîrbu 2014, fig. 3/7; Sava 2014, fig. 92/15]. Dimensions: L: 10.0 cm; D: 0.25 cm; Weight: 2.01 g. FA-11626-83.

One item discovered in the settlement of the Noua culture at Petrușeni (cat. 6; fig. 7/9) [Levitskii, Sava 1993, fig. 3/14; Dergačev 2002, Taf. 46/D3; Sîrbu 2014, fig. 3/8; Sava 2014, fig. 49/10]. Simple needle with the foot bent towards the tip, with an oval opening at the opposite end. Dimensions: L: 8.7 cm; D: 0.3 cm; Dopening: 0.2×0.3 cm;

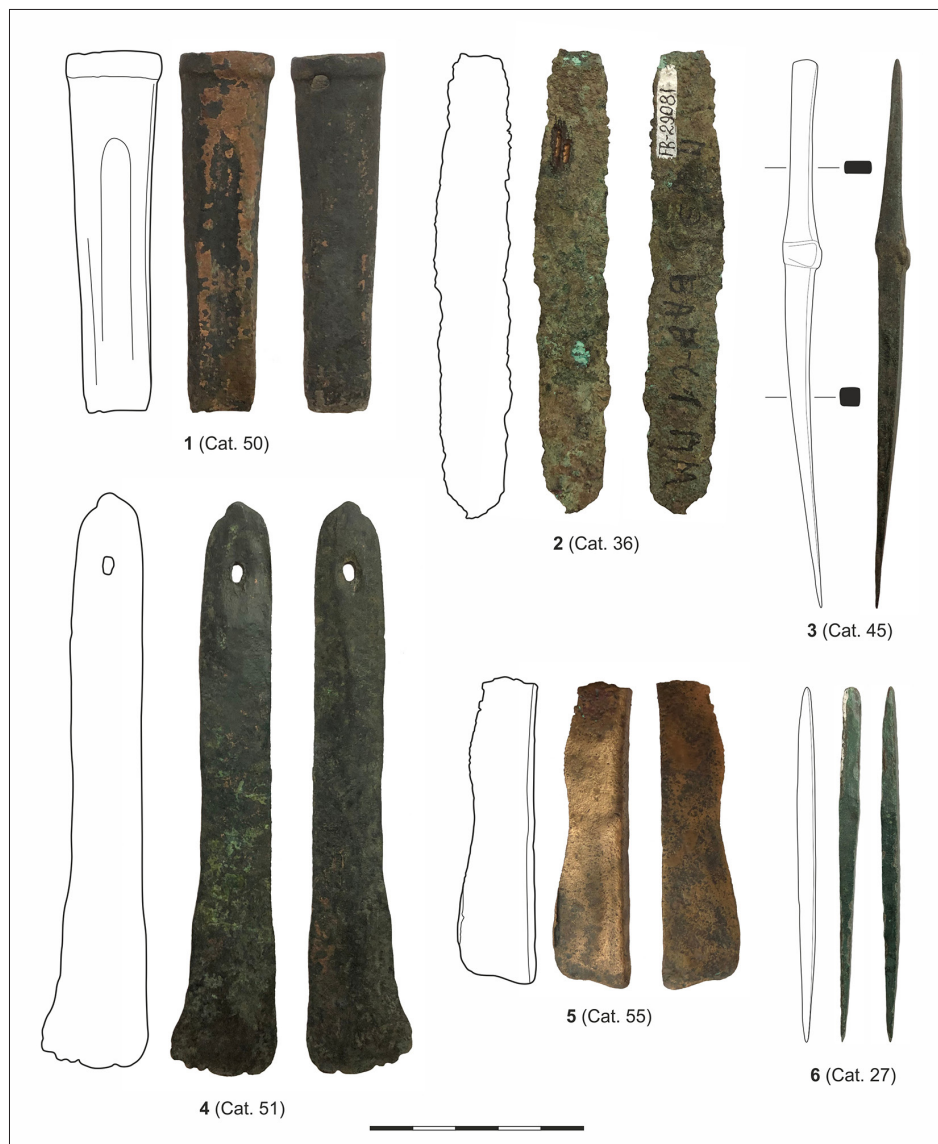


Fig. 3. 1, 4, 5 – Taraclia-Gaidabul (1 – chisel, 4-5 - knives), 2 – Vărativ, knife, 3 – Lazo, awl, 6 – Odaia-Miciurin, awl (photos by E. Mistreanu, drawings by D. Topal).

Weight: 2.24 g. FB-28233-5.

One item discovered in the settlement of the Sabatinovka culture at Taraclia-Gaidabul (cat. 57; fig. 5/12) [Sava et al. 2019a, fig. 2/3; Sava et al. 2019b, 18-19, fig. 175/2]. Simple needle with a slightly bent foot, a sharp tip and the other end broken. Dimensions: L: 7.6 cm; D: 0.2 cm; Weight: 2.08 g. FA-12297-3.

Sewing needles are known in several settlements of the Noua type on the territory of Ukraine – Ostrivets [Balaguri 1968, 21, ris. 3/3-4], Mahala [Smirnova 1957, 70, ris. 38/10, 13; Smirnova 1969, ris.7/I, 26] and Romania – Zoltan [Cavruc 2003, 107, foto 233-237, 107, foto 242], Piatra-Neamț,

Dodești, Gârbovăț, Cavadinești, Zapodeni [Florescu 1991, fig. 103-A/11, 106-A/3-4, 107-A/7, 108-A/17-19; 111-A/8-10], Râșești [Petrescu-Dîmbovița 1978, 462, fig. 10/7; Berezanskaia, Kruts, Telegin 1985, ris. 131/18], Crasnaleuca [Dascălu 2007, 126, pl. 61/94.1] and others.

Awls, 14 items. Based on morphological features, two types of awls can be distinguished:

1. Awl with both ends sharpened, 5 items.

Three items discovered in the Noua culture settlement at Odaia-Miciurin:

1. Awl made of a trapezoidal bar in section with both ends sharp (cat. 15; fig. 5/6) [Sava, Kaizer 2011, ris. 72/20; Sirbu 2014, fig. 3/18; Sava 2014,



Fig. 4. 1 – Balași, pin, 2 – Petrușeni, pin, 3, 6 – Odaia-Miciurin, pins, 4 – Gura-Galbenei, pin, 5, 7 – Ghindești, pins (photos by E. Mistreanu, drawings by D. Topal).

fig. 92/20]. It has a curved body at both ends. Dimensions: L: 7.9 cm; W: 0.4 cm; Weight: 3.31 g. FB-29069-2.

2. Awl made of a trapezoidal bar in section with both ends sharp (cat. 17; fig. 5/7) [Sava, Kaizer 2011, ris. 72/19; Sava 2014, fig. 92/19]. It has a slightly thickened body in the middle area. Dimensions: L: 6.4 cm; W: 0.4 cm; Weight: 3.06 g. FB-29036-2.

3. Awl made of a trapezoidal bar in section, with both ends sharp (cat. 18; fig. 5/14) [Sava, Kaizer 2011, ris. 72/21; Sava 2014, fig. 92/21]. The body is slightly thickened towards one end. Dimensions: L: 4.5 cm; W: 0.3 cm; Weight: 1.33 g. FB-29036-3.

One item discovered in the settlement of the

Noua culture at Petrușeni (cat. 4; fig. 5/5) [Levitsckii, Sava 1993, des. 3/7; Dergačev 2002, Taf. 46/D1; Sava 2014, fig. 44/19]. Awl made of a trapezoidal bar in section, with both ends sharp. A slightly thickened body in the middle area. Dimensions: L: 6.5 cm; W: 0.5 cm; Weight: 4.13 g. FB-28233-22.

One item discovered in the settlement of the Sabatinovka culture at Taraclia-Gaidabul (cat. 60; fig. 5/2). [Sava et al. 2020a, fig. 80/6]. Awl made of a trapezoidal bar in section, with both ends sharp. The body is slightly thickened towards one end. Dimensions: L: 5.2 cm; W: 0.4 cm; Weight: 3.36 g. FB-30520-8.

2. Chisel-awl, 9 items.

Four items discovered in the settlement of the Noua culture at Odaia-Miciurin.

1. Awl made of a trapezoidal bar in section, with one sharp end and another flattened (cat. 25; fig. 5/4) [Sava, Kaizer 2011, ris. 72/6; Sava 2014, fig. 92/6]. The body is curved towards the flattened end. Dimensions: L: 7.0 cm; W: 0.3 cm; Weight: 2.32 g. FB-28930-10.

2. Awl made of trapezoidal bar in section, with one sharp end and another flattened (cat. 27; fig. 3/6) [Sava, Kaizer 2011, ris. 72/17; Sava 2014, fig. 92/17; Sirbu 2014, fig. 3/15]. It has a straight body, slightly

thickened towards the flattened end. Dimensions: L: 8.2 cm; W: 0.4 cm; Weight: 6.08 g. FB-28930-9.

3. Awl made of a trapezoidal bar in section, with one sharp end and another flattened (cat. 26; fig. 5/8) [Sava, Kaizer 2011, ris. 72/1; Sava 2014, fig. 92/1; Sirbu 2014, fig. 3/14]. The body is curved at both ends, provided with a protrusion towards the flattened end. Dimensions: L: 13.2 cm; W: 0.5 cm; Weight: 12.34 g. FB-28930-14.

4. Awl made of a trapezoidal bar in section, with one sharp end and another flattened (cat. 14; fig. 5/10) [Sava, Kaizer 2011, ris. 72/18; Sava 2014, fig. 92/18; Sirbu 2014, fig. 3/20]. The body is thick-

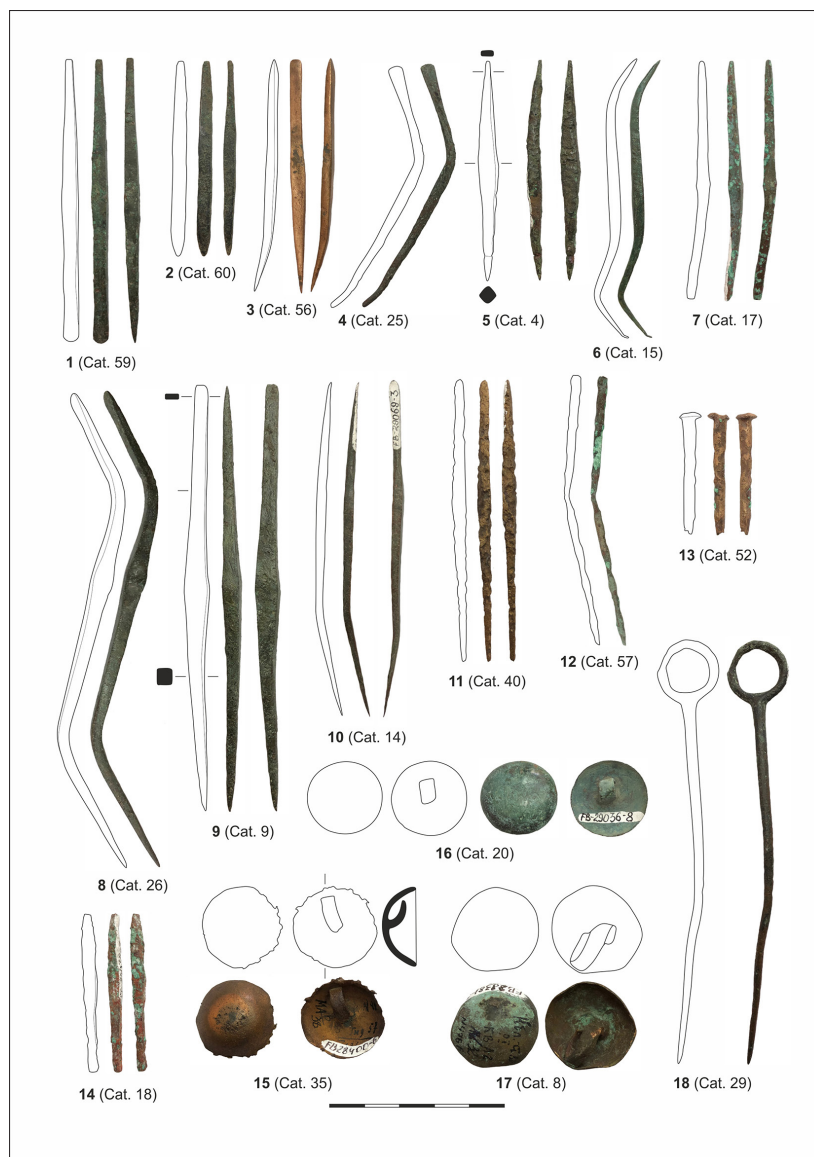


Fig. 5. 1-3, 12, 13 – Taraclia-Gaidabul, awls, 4, 6-8, 10, 14, 16, 18 – Odaia-Miciurin (4, 6-8, 10, 14 – awls, 16 - plaque, 18 - pin), 5 – Petrușeni, awl, 9, 17 – Cobilea (9 – awl, 17 – plaque), 11, 15 – Ghindești (11 – awl, 15 - plaque) (photos by E. Mistreanu, drawings by D. Topal)

ened towards the flattened end and the sharp end is slightly curved. Dimensions: L: 9.2 cm; W: 0.3 cm; Weight: 3.36 g. FB-29069-3.

One item discovered in the settlement of the Noua culture at Ghindești (cat. 40; fig. 5/11) [Meliukova 1961a, 31, ris. 12/9; Dergačev 2002, Taf. 45/4; Sava 2014, fig. 140/9; Sîrbu 2014, fig. 3/22]. Awl made of a trapezoidal bar in section, with both ends sharp. The body is slightly thickened towards one end. Dimensions: L: 7.9 cm; W: 0.4 cm; Weight: 3.82 g. FB-29078-4.

One item discovered in the settlement of the Noua culture at Cobîlea (cat. 9; fig. 5/9) [Demchenko, Levitskii 1992, 120, ris. 3/5; Dergačev 2002, Taf. 44/G1; Sava 2014, fig. 159/14; Sîrbu 2014, fig. 3/21]. Awl made of a trapezoidal bar in section, with one sharp end and another flattened. The body is straight, strongly thickened in the middle area. Dimensions: L: 12.0 cm; W: 0.6 cm; Weight: 12.40 g. FB-28381-15.

One item discovered accidentally in Lazo, Singerei district (cat. 45; fig. 3/3) [Dergačev 2002, Taf. 46/G]. Awl made of a trapezoidal bar in section, with one sharp end and another flattened. The body is curved at both ends, with a protrusion towards the flattened end. Dimensions: L: 12.7 cm; W: 0.7 cm; Weight: 16.71 g. FB-28409-1.

Two items discovered in the Sabatinovka culture settlement in Taraclia-Gaidabul.

1. Awl made of a trapezoidal bar in section, with one sharp end and another flattened (cat. 56; fig. 5/3) [Sava et al. 2019a, fig. 2/2; Sava et al. 2019b, 18-19, fig. 175/1]. The body is thickened in the middle area and slightly curved towards the sharp end. Dimensions: L: 6.7 cm; W: 0.5 cm; Weight: 3.97 g. FB-30520-5.

2. Awl made of a trapezoidal bar in section, with one sharp end and another flattened (cat. 59; fig. 5/1) [Sava et al. 2020a, fig. 80/1]. The body is straight, slightly thickened in the middle area. Dimensions: L: 8.0 cm; W: 0.45 cm; Weight: 6.42 g. FB-30520-10.

Awls, analogues to those described above, were discovered in settlements of the Noua culture on the territory of Ukraine – at Ostrivets [Balaguri 1971, 145, ris. 3/6, 14, 20], Mahala [Smirnova 1969, 7/I 22], Stetsivka [Krushel'nits'ka 2006, ris. 21/12], and Romania – at Trușești, Bărboasa, Tăvădărești, Gârbovăț [Florescu 1991, fig. 100-A/2, 104-A/7, 105-A/8, 109-A/24-30], Zoltan [Cavruc 2003, 108, foto 240],

Vlădeni [Dascălu 2007, 125]. Awls fixed on bone or horn handles were discovered in several settlements of the Noua (Mahala, Gârbovăț, Tăvădărești) and Sabatinovka (Dremaylivka) cultures.

PARTS AND ATTRIBUTES OF ADORNMENTS

Pins of the Rollenadel type, 4 items.

Two items from the settlement of the Noua culture at Ghindești.

1. Pin with a medium foot, circular in section, a sharp tip and the opposite end flattened and twisted laterally in the shape of a ring (cat. 38; fig. 4/5) [Meliukova 1961a, 29, ris. 12/5; Dergačev 2002, Taf. 45/5; Sava 2014, fig. 140/6; Sîrbu 2014, fig. 4/4]. Dimensions: L: 8.6 cm; D: 0.3 cm; Dring: 0.9 cm; Weight: 4.75 g. FB-29078-2.

2. Pin with a high foot, circular in section, a sharp point and the opposite end flattened and twisted laterally in the form of a ring (cat. 39; fig. 4/7) [Meliukova 1961a, 29, ris. 12/7; Dergačev 2002, Taf. 45/7; Sava 2014, fig. 140/5; Sîrbu 2014, fig. 4/2]. Under the ring, there is a circular depression with a diameter of 0.2 cm. Dimensions: L: 10.5 cm; D: 0.3 cm; Dring: 0.5 cm; Weight: 3.80 g. FB-29078-3.

One item from the Noua type settlement from Odaia-Miciurin (cat. 24; fig. 4/6) [Sava, Kaizer 2011, ris. 72/3; Sava 2014, fig. 92/3, Sîrbu 2014, fig. 4/1]. Pin with a high foot, circular in section, sharp tip and the opposite end flattened and twisted laterally in the shape of a ring. Dimensions: L: 12.7 cm; D: 0.4 cm; Dring: 0.7 cm; Weight: 8.58 g. FB-28771-17.

One item of the Sabatinovka culture settlement from Gura Galbenei (cat. 1; fig. 4/4) [Dergachev 1973, 100, ris. 24/1; Dergačev 2002, Taf. 45/H; Sîrbu 2014, fig. 4/7]. Pin with a high foot, circular in section, broken tip and the opposite end flattened and twisted laterally in the shape of a ring. The foot is strongly bent at the top. Dimensions: L: 8.7 cm; D: 0.3 cm; Dring: 0.7 cm; Weight: 4.68 g. FB-29075-2.

Rollenadel pins are made from a circular bronze bar in section, with the upper end flattened and twisted in a spiral. Such pins are also known in the settlements of the Noua culture on the territory of Ukraine – at Mahala [Smirnova 1969, ris. 7/I30], Ostrivets [Balaguri 1968, 145, ris. 3/9-12] and Romania – Căndești [Florescu, Florescu 1990, 13, fig. 32/9], Zoltan [Cavruc 2003, 107, 108, foto 232, 239],

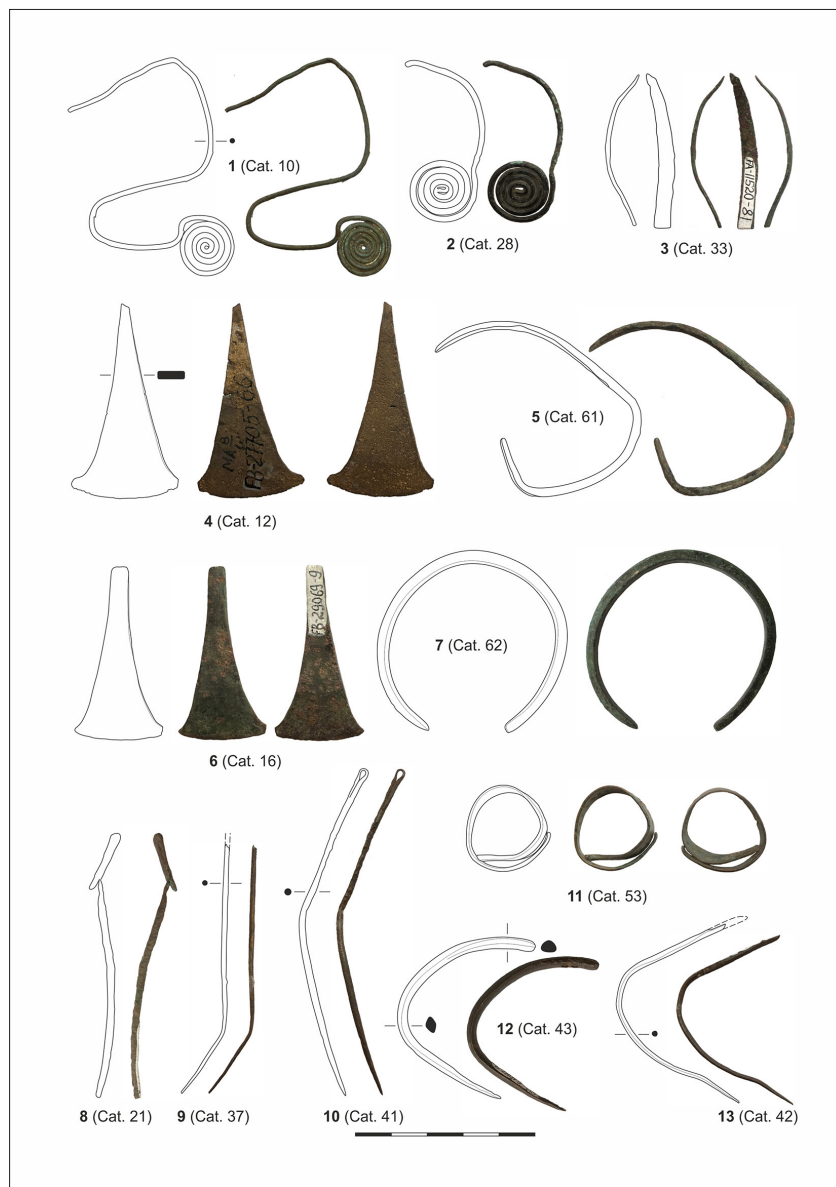


Fig. 6. 1 – Slobodca-Șireuți, 2, 3, 6, 8, – Odaia-Miciurin (2, 3, 6 - ornaments, 8, 10 – needles), 4, 9, 10, 13 – Ghindești (4 – pendant, 9, 13 – needles), 5, 7, 11 – Taraclia-Gaidabul, ornaments, 12 – Roșeticii Vechi, bracelet (photos by E. Mistreanu, drawings by D. Topal).

Hărman, Corlăteni, Valea Lupului, Trușești, Poiana-Dulcești, Târpești [Florescu 1991, fig. 98-A/8; 99-A/1, 7; 100-A/7, 8; 102-A/3; 103-A/1, Dascălu 2007, 65], as well as in Sabatinovka-type settlements – from Berislav [Gerškovič 1999, Taf. 7/15-16].

Ring-headed pins, 2 items.

One item of the Noua culture settlement at Odaia-Miciurin (cat. 29; fig. 5/18) [Sava, Kaizer 2011, ris. 72/2; Sava 2014, fig. 92/2, Sirbu 2014, fig. 4/15] is a pin with a long foot, circular in section, pointed tip and the opposite end finished in the shape of a ring. Dimensions: L: 12.0 cm; D: 0.4 cm; Dring: 1.7 cm; Weight: 4.58 g. FB-28535-10.

One item from the Sabatinovka culture settlement at Taraclia-Gaidabul (cat. 54; fig. 7/1) [Sava et al. 2019b, 18-19, fig. 116/3] pin with a short foot, circular in section, pointed tip and the opposite end finished in the shape of a ring. L: 7.5 cm; D: 0.3 cm; Dring: 0.8 cm; Weight: 3 g. FB-30520-3.

The ring-headed pins are made from circular bronze bars in section with one end pointed and the other finished in a ring. Based on morphological criteria, they were included by E. Chernykh in type Y18 [Chernykh 1976, 128-129, tab. XL/21-23]. Analogues are known in the settlements of the

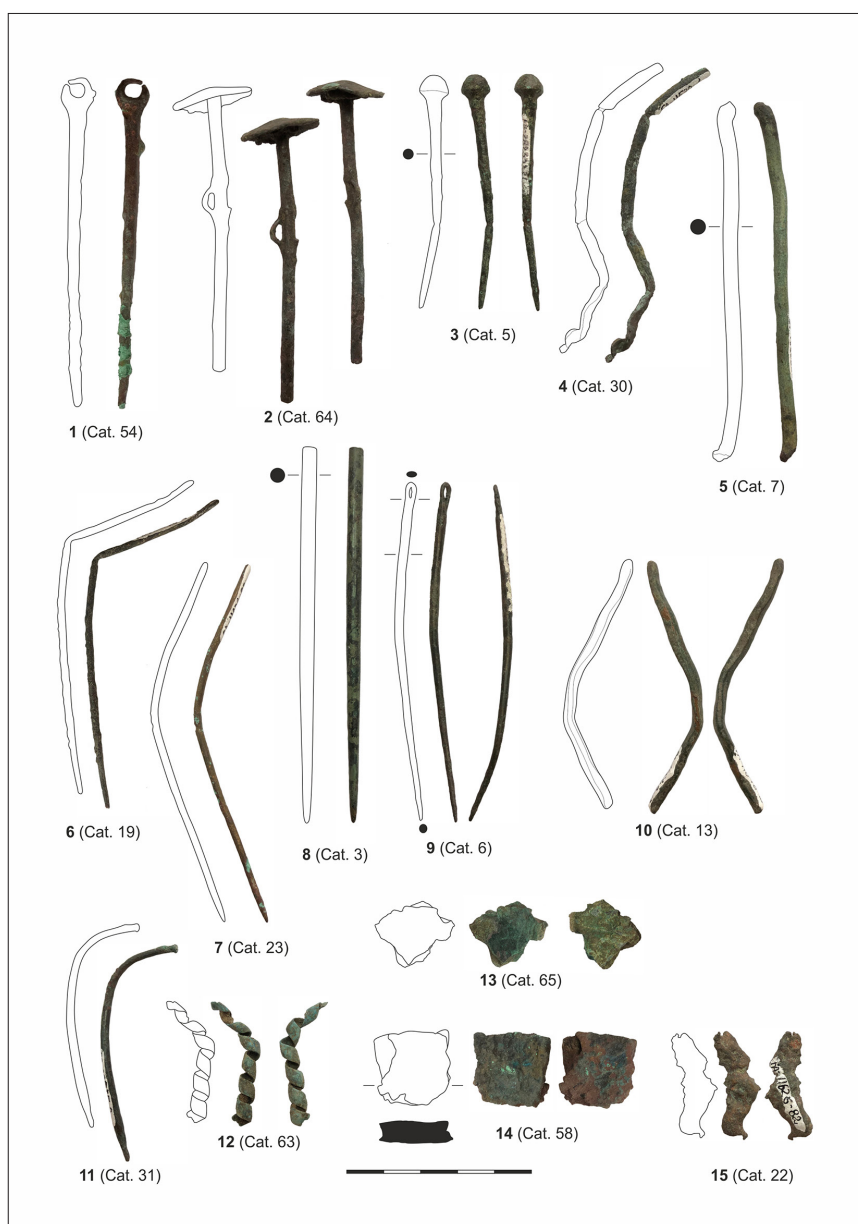


Fig. 7. 1, 2, 12-14 – Taraclia-Gaidabul (1, 2 – pin, 12-14 – fragments), 3, 9 – Petrușeni (3 – pin, 9 – needle), 4, 6, 7, 10, 11, 15 – Odaia-Miciurin (4, 10 – bars, 6, 7, 11 – needles, 15 – scrap), 5, 8 – Cobîlea (5 – bar, 8 – awl) (photos by E. Mistreanu, drawings by D. Topal).

Noua culture from Mahala [Smirnova 1957, ris. 39/8], Zhabokruki [Balaguri 1971, ris. 111/14.], Cânduști [Florescu, Florescu 1990, fig. 32/18], Trușești, Gârbovăț [Florescu 1991, fig. 100-A/1; 108-A/14] and Sabatinovka culture from Novokievka [Gerškovič 1999, Taf. 44/3]. Ring-headed pins are also attested in deposits dated as BrD-HaA1 [Dergačev 1991, fig. 3 /1-3; 2002, Taf. 30/70-72; Sîrbu 2013, fig. 3/11, 6/1; Sava, Boroffka 2013, ris. 2/5].

This type of pin is known on the territory between the north of Moldova in the west and the

Lower Dnieper in the east [Chernykh 1976, 129, ris. 53], being also discovered in the environment of Lebedovskaya [Berezanskaia 1982, ris. 20/1, 2], Belogradovka [Berezanskaia et. al. 1971, ris. 114/9; Berezanskaia 1982, ris. 22/25], Chernoles [Sharafutdinova 1987, 75] and Gáva-Holigrady [Klochko 1994, ris. 37/12] cultures.

Pins with hemispherical head, 2 items.

One item from the settlement of the Noua culture at Petrușeni (cat. 5; fig. 7/3) [Levitskii, Sava 1993, des. 3/8; Dergačev 2002, Taf. 46/D4; Sava 2014, fig. 44/20;

Sirbu 2014, fig. 4/13]. Pin with a short foot, sharp tip and opposite end finished in a hemispherical prominence. Dimensions: L: 6.0 cm; Dfoot: 0.2-0.35 cm; Dhead: 0.65 cm; Weight: 2.94 g. FB-28233-21.

One item of the Sabatinovka culture settlement at Taraclia-Gaidabul (cat. 52; fig. 5/13) [Sava et al. 2019b, 18-19, fig. 116/1]. Fragment of a pin, with a broken end and another, finished in the form of a hemispherical protrusion with a longitudinal opening. Dimensions: L: 3.3 cm; Dfoot: 0.3 cm; Dhead: 0.6 cm; Dopening: 0.3 cm; Weight: 2.07 g. FA-11297-5.

Analogues of this type of pin were also discovered in the western area of the Noua culture, in Romania – at Davideni and Chircești [Florescu 1991, fig. 102-A/1; 111-A/6]. Similar pieces are also known in the multi-cordoned ware (Babyno) [Berezanskaia 1982, ris. 4/7] and Srubnaya [Leskov 1971, ris. 117/17] cultures.

Pin with a hemispherical head and lateral ear, *one item discovered in the settlement of the Noua culture at Petrușeni* (cat. 2; fig. 4/2) [Levitskii, Sava 1993, des. 3/9; Dergačev 2002, Taf. 46/D5; Sava 2014, fig. 49/12]. Pin made from a circular bronze bar in section, with one end pointed and the other bent sideways and finished with a flattened hemispherical prominence. At the upper part of the foot, there is a side ear. Dimensions: L: 14.3 cm; Dfoot: 0.45 cm; Dear: 0.8×1.3 cm; Weight: 11.93 g. Such a needle was discovered on the territory of Romania, in the settlement of the Noua culture from Rotbav [Dietrich, Dietrich 2008, pl. 2/2]. Another item comes from the Hallstadian settlement from Saharna Mare [Niculiță, Zanoci, Băț 2016, fig. 8/1-5]. FB-30520-11.

Pin with a side ear, *one item discovered in the settlement of the Noua culture at Odaia-Miciurin* (cat. 32; fig. 4/3) [Sava, Kaizer 2011, ris. 72/4; Sava 2014, fig. 92/4; Sirbu 2014, fig. 4/22] and was made from a circular bronze bar in section, with one end pointed and the other flattened and twisted sideways in the shape of an oval ear. Dimensions: L: 8.2 cm; Dfoot: 0.3 cm; Dear: 0.4×0.6 cm; Weight: 3.73 g. FB-28535-30. No analogues.

Pin with a rhomboid head, *one item accidentally discovered in Balinți, Soroca district* (cat. 49; fig. 4/1) [Sirbu, Sava 2014, fig. 227/20].

High-footed **pin**, circular in section, with one end pointed and the other finished in the shape of a rhombus made of rhomboidal wire in section provided on the side corners with rings, one of them with the ends apart. The ring on the top corner is broken. Dimensions: L: 14.4 cm; Dfoot: 0.1-0.2 cm; Drings: 0.8 cm; Weight: 7.36 g. FB-30380.

A fragment of a **pin** of the same type was discovered in the settlement of the Noua culture from Roșieticii Vechi⁴. Other such discoveries are not currently known.

Pin with a flattened conical head and ears at the top of the foot, *one item, discovered in the settlement of the Sabatinovka culture at Taraclia-Gaidabul* (cat. 64; fig. 7/2) [Sava et al. 2020a, 43, nr. inv. 601]. It is made of a circular bronze bar in section and has its end finished with a discoidal plate, under which there are small bar fragments of three ears placed around the foot. Dimensions: L: 7.2 cm; Dfoot: 0.2 cm; Dplate: 2.0 cm; Weight: 7.72 g. FB-30520-6.

This type is not specific to Noua-Sabatinovka cultures, it has analogues in Komarow culture [Lisenko, Lisenko, Didenko 2004, 191-196; Lysenko et al. 2005, 154, ris. 3/1; Lysenko et al. 2012, 154, ris. 1/1] and most likely represents an imported piece.

A **pin** fragment, undetermined typologically due to the lack of the upper end, was discovered in the settlement of the Noua culture at *Petrușeni* (cat. 3, fig. 7/8) [Dergačev 2002, Taf. 53/F]. It has a massive foot, circular in section, and a pointed tip. Dimensions: L: 10.0 cm; Dfoot: 0.4 cm; Weight: 7.97 g. FA-11473-4.

Fragments of cruciform-anthropomorphic pendants, *2 items*.

One item discovered in the settlement of the Noua culture at Ghindești (cat. 12, fig. 6/4) [Meliukova 1961a, 32, ris. 13/3; Dergačev 2002, Taf. 45/C10-11; Sava 2014, fig. 140/3; Sirbu 2014, fig. 5/5,7]. It represents the lower part of the pendant, a triangular plate with flared lower corners. Dimensions: L: 5.0 cm; W: 0.3-2.5 cm; T: 0.35 cm. FB-27705-66.

One item discovered in the settlement of the Noua culture at Odaia-Miciurin (cat. 16; fig. 6/6) [Sava 2014, fig. 92/26; Sirbu 2014, fig. 5/9; Sirbu

4. The item was not available for analysis.

2015, fig. 5/24]. As in the previous case, it represents the triangular lower part of the pendant, a triangular-shaped plate with flared lower corners. Dimensions: L: 4.3 cm; W: 0.4-2.1 cm; T: 0.2 cm; Weight: 4.17 g. FB-29069-9.

Such items are found in the literature as *openwork pendants* or *openwork anthropomorphic pendants* [Petrescu-Dîmbovița 1977, 73,77], *pendants with suspension link and openwork plate* [Dascălu 2007, 128] or *cruciform pendants of Băleni type* [Dergačev 2002, 155]. V. Diaconu, in a study dedicated to these pieces, identifies for these type two variants – A and B [Diaconu 2012, 24-25, tab.1].

Variant A represents the cruciform pendants with a triangular plate and circular arms with a central rhomboid opening, the lower part having a triangular shape, with a narrow or widened base. Such specimens were discovered in the settlement of the Noua culture at Ulmi-Liteni [Florescu 1991, fig. 101/4,7] and in the eponymous one of the Coslogeni culture [Diaconu 2012, fig. 1/4]. To the east of the Dniester, on the territory of Ukraine, in the environment of the Sabatinovka culture, such pendants are known in the deposits of Ingul [Cherniakov 1985, ris. 63/3-4] and Solonets [Bočkarev, Leskov 1980, Taf. 15/B2].

Variant B is singled out by the lack of the central rhomboid cutout, an arched base and circular or ovoid arms. Such pendants come from the settlements of the Noua culture in Mahala [Smirnova 1969, ris. 7/ 121] and Ostrivets [Balaguri 1968, ris. 3/8]. A casting mold with the negative of this variant of the pendant is known in the Sabatinovka culture at the settlement of Vyshchetarasovka II [Sharafutdinova 1987, ris. 4/2].

Regarding the origin of these pendants in specialized literature, one opts for both the Central European variant culture [Diaconu 2012, 27-28] and the Eastern culture [Novikova 1976, 30-43, ris. 1/29-32], in the support of the latter being also the form of casting discovered at Vyshchetarasovka II [Sharafutdinova 1987, ris. 4/2]. The functionality of the pendants is that of adornments [Diaconu 2012, 31], not excluding their use as decorative pieces for harness [Chidioșan 1977, 28, I, 57] or amulets [Diaconu 2012, 27-28; Sîrbu 2015, 98]. Chronologically, they are specific to the BrD period, but continue their evolution in HaA1 [Dergačev 2002, 157; Dergachev 2012, 168].

Plaques, 3 items.

One item discovered in the settlement of the Noua culture at Ghindești (cat. 35; fig. 5/15) [Meliukova 1961a, ris. 12/4; Dergačev 2002, Taf. 45/C9; Sava 2014, fig. 140/2; Sîrbu 2014, fig. 5/1] represents a hemispherical plaque made of thin plate, provided on the inside with a trapezoidal bar ear in section. An edge is scratched. Dimensions: 2.2 cm; Tplate: 0.1 cm; D: Weight: 3.82 g. FB-28400-6.

One item discovered in the settlement of the Noua culture at Cobîlea (cat. 8; fig. 5/17) [Demchenko, Levitskii 1992, ris. 2/12; Levitsckii, Sava 1993, des. 11/12; Dergačev 2002, Taf. 44/G3; Sava 2014, fig. 159/12; Sîrbu 2014, fig. 5/3] is a hemispherical plaque, made of thin plate, provided on the inside with an ear from a trapezoidal bar in section. Dimensions: 2.3 cm; Tplate: 0.2 cm; D: Weight: 6.06 g. FB-28381-5.

One item discovered in the settlement of the Noua culture at Odaia-Miciurin (cat. 20; fig. 5/16) [Sava, Kaizer 2011, ris. 72/25; Sava 2014, fig. 92/25, Sîrbu 2014, fig. 5/4] is a hemispherical plaque, made of thin plate, provided on the inside with an ear in the lenticular plate. Dimensions: 2.1 cm; Tplate: 0.1 cm; D: Weight: 2.61 g. FB-29036-8.

Made of thin bronze plate, they have a hemispherical shape and are fitted with a central perforation or an inner latching ear. Plaques of this type are also known in settlements of the Noua culture on the territory of Ukraine – at Ostrivets [Balaguri 1968, ris. 3/19, 23] and in Romania – at Ulmi-Liteni [Dascălu 2007, 129], Zoltan [Cavruc 2003, 109, foto 247]. In the areal of Sabatinovka culture, analogues come from the settlements Vyshchetarasovka and Solonets [Berezanskaia et al. 1986, ris. 30/20, 35]. Numerically, they are mostly found in the bronze deposits [Aricescu 1970, fig. 26/1-2, 27/2, 4; Petrescu-Dîmbovița 1977, pl. 74/17-18, 176/3-8, 274/9-12; Sharafutdinova 1982, ris. 52/7; Dergachev 1991, fig. 3/12; 2012, ill. II/1; Sîrbu 2013 fig. 1-3, 6/6-8] being attributed chronologically to the BrD and Ha A1 periods [Dergačev 2002, 163].

Bracelets, 3 items.

One item discovered in the settlement of the Noua culture at Odaia-Miciurin (cat. 33; fig. 6/3) [Sava, Kaizer 2011, ris. 77/22; Sava 2014, fig. 92/22]. Fragment of a bracelet made of semi-oval wire in section, with a progressively narrowed

end. Dimensions: L: 3.2 cm; W: 0.4 cm; T: 0.2 cm. Weight: 1.05 g. FA-11520-81.

One item discovered in the settlement of the Noua culture at Roșieticii Vechi (cat. 43; fig. 6/12) [Meliukova 1961a, 31, ris. 12/12; Dergačev 2002, Taf. 46/E2; Sava 2014, fig. 140/13; Sirbu 2014, fig. 5/14]. Fragment of a bracelet made of semi-oval wire in section, with a progressively narrowed end. Dimensions: L: 8.1 cm; W: 0.5 cm; T: 0.4 cm. Weight: 6.81 g. FB-28079-23.

One item discovered in the settlement of the Sabatinovka culture at Taraclia-Gaidabul (cat. 62; fig. 6/7) [Sava et al. 2020a, fig. 80/4; 2020b, fig. 2/5]. Bracelet made of a semi-oval bar in section with spaced ends. It has a narrow and rounded end and the other cut on a straight line. Dimensions: D: 5.2 cm; W: 0.5 cm; T: 0.4 cm. Weight: 11.60 g. FB-30520-9.

The bracelets discovered in settlements of Noua-Sabatinovka type are made of oval, circular or trapezoidal bronze bars in section. These are ornaments well represented numerically in the deposits [Aricescu 1970, fig. 24/1-12; Petrescu-Dîmbovița 1977, pl. 75/3-13, 76-77, 78/1-8; Chernykh, Kuz'minykh 1989, ris. 73/7-16; Dergačev 2002, Taf. 19/R, 46/E; 31/A; Sirbu 2013, fig. 3/14-16, 6/14-16; Bolohan 2016, pl. 47/A2] and less frequently as discoveries in settlements. Morphologically, two main types of bracelets can be distinguished: closed (fully cast) and open (with the ends apart). With small exceptions [Chernykh 1976, tab. 41/19; Petrescu-Dîmbovița 1977, pl. 96/5, 182/4-6, 334/1-2; Florescu 1991, fig. 108/10], open bracelets are predominant for Noua-Sabatinovka cultures. Analogues are known in Noua type settlements on the territory of Ukraine – at Ostrivets [Balaguri 1968, 145, ris. 3/15-16] and in Romania – at Bârboasa, Tăvădărești, Gârbovăț [Florescu 1991, fig. 104-A/1, 104-A/2, 105-A/10, 108-A/10, 13], Zoltan [Cavruc 2003, 109, foto 244-245]. The presence of this type of bracelet over a wide chronological framework [Sava 2002b, 190] complicates the establishment of an exact time frame for them. However, at the current research level, we tend to believe that their dating in BrD is more accurate.

Loop ring, *one item, settlement of the Sabatinovka culture at Taraclia-Gaidabul* (cat. 53; fig. 6/11) [Sava et al. 2019b, 18-19, fig. 116/2] was made of a bent bronze plate in the shape of

a ring with overlapping ends. It has an ornament on the surface that represents a dotted line made in the repoussé technique. Dimensions: D: 2.3 cm; Wplate: 0.3-0.8 cm; T: 0.15 cm; Weight: 2.84 g. FB-30530-2. No analogues.

Earring, *one item, the settlement of the Sabatinovka culture at Taraclia-Gaidabul* (cat. 61; fig. 6/5) [Sava et al. 2020a, fig. 80/5] was made of thin square bronze wire in section, bent in a circular shape (later deformed), with one sharp end and the second flattened. Dimensions: L: 9.1 cm; W: 0.3 cm; T: 0.2 cm; Weight: 1.90 g. FB-30520-7.

The analogues are known in the settlements of the Noua culture at Zoltan [Cavruc 2003, 109, foto 244-245] and Trușești [Florescu 1991, fig. 100/6] and in the deposits at Tăutu [Petrescu-Dîmbovița 1978, 131, Taf. 159/A10] and Haragiș [Sirbu, Popovici, Vornic 2019, 233, fig. 5/1].

Elements of trimmings, two items.

One item discovered in the settlement of the Noua culture at Slobodca-Șireuți, Slobozia-Șireuți village (cat. 10; fig. 6/1) [Dergachev 1969, 116, tab. 3/18; Dergačev 2002, Taf. 46/H3; Sava 2014, fig. 12/6; Sirbu 2014, fig. 5/12]. Thin, circular wire in section with one end twisted in a concentric circle. Dimensions: D circle: 1.5 cm; Dwire: 0.2 cm. Weight: 2.98 g. FB-26732-11.

One item discovered in the settlement of the Noua culture at Odaia-Miciurin (cat. 28; fig. 6/2) [Sava, Kaizer 2011, ris. 77/27; Sava 2014, fig. 92/27; Sirbu 2014, fig. 5/11] represents a thin, circular wire in section with one end twisted in a concentric circle. Dimensions: D circle: 1.7 cm; Dwire: 0.2 cm. Weight: 2.60 g. FB-28535-7.

The analogues are known on the territory of Ukraine in the settlement of the Noua culture at Ostrivets [Balaguri 1968, 145, ris. 3/22] and on the territory of Romania in the settlement of the Noua culture at Banca-Tăvădărești [Florescu, Căpitanu 1968, fig. 6/4], the deposits at Ticvanul Mare [Hansen 1994, 276, Abb. 176/3], Băleni, Bocșa, Gușterița, Pecica II, Poșaga de Sus, Suseni, Șpălnaca [Petrescu-Dîmbovița 1977, pl. 74/12, 120/17, 18, 160/40, 176/10, 179/21, 191/16-18, 210/21] etc., as well as in the bronze deposit discovered in the area of the Sabatinovka culture at Antonești [Sirbu 2013, fig. 3/7, 6/10].

WEAPONS

Daggers, 3 items.

One item discovered accidentally in Ciutulești, Florești district (cat. 47; fig. 8/1) [Ketraru, Rafalovich 1964, 220, ris. 1; Dergachev 1975, 26, ris. 9/19; 2011, ris. 142/7; Dergačev 2002, Taf. 44/C]. It has a leaf-shaped blade with the maximum width in the central area, provided with three median ribs. The guard is arched, with the ends twisted in the shape of a ring and the upper part in the shape of an hourglass with the faceted surface from where the rectangular and square in section peduncle continues. It has a slightly bent tip and dented cutting edges. Dimensions: Ltotal: 41.5 cm; Lblade: 35.0 cm; Lguard: 3.0 cm; Lrod: 3.5 cm; Wmax.: 8.0 cm; Tblade: 0.3 cm; Weight: 379 g. FB-29272.

For the late Bronze Age in the northern and northwestern Pontic area, several types and variants of daggers were established, based on morphological and metrical features [Chernykh 1976, 115-125; Dergachev 2011, 222-231; Dergačev 2002, 123-131; Ușurelu 2010, 24-70]. The item discovered in Ciutulești belongs to the Krasnyi Mayak type. This type represents daggers with a leaf-shaped blade, with the maximum width in the central area, most often provided with three median ribs. The guard is arched, with the ends twisted in the shape of a ring or provided with a ring on the handle. Smaller daggers are also known, with a maximum width below the middle of the blade, provided with a single median rib. These are characteristic of the Dnieper-Bug region and are known only by the casting molds [Dergachev 2011, 228]. Their presence is concentrated in three different areas: in the lower Bug and Dnieper interfluvium (Sabatinovka culture area), in the Middle Prut and Dniester interfluvium (eastern part of the Noua culture) and the Lower Danube (in the area corresponding to the Coslogeni culture area) [Dergachev 2011, 140]. Most come from deposits or were discovered occasionally [Dergachev 1975, ris. 4/1-7; Dergačev 2002, 124-125, Abb. 44/C, G4, 69/A420-421]. To the east, in the Dnieper region, daggers of this type are discovered quite rarely and have smaller dimensions [Dergachev 2011, 227]. In the Noua-Sabatinovka settlements no cast specimens are known, but casting patterns with the negative of such daggers were discovered at Cobîlea, Mahala, Voloske and Krasnyi Mayak [Bočkarev, Leskov 1981, Taf. 2/24a, 3/27-28, 5/42a-b, 12/112, 13/113]. They are considered to have appeared at the initial stage of the formation of

Noua-Sabatinovka cultures, and after these cultures disappeared, continued to be cast in the framework of Belozerka culture [Dergachev 2011, 228].

One item discovered by accident in Goian, Dubăsari district (cat. 48; fig. 8/3) [Ketraru, Rafalovich 1964, 220, ris. 2; Dergachev 1975, ris. 9/18; 2011, ris. 146/7; Dergačev 2002, Taf. 43/B]. It represents a dagger-knife with a rod on a handle, a leaf-shaped blade with the maximum width in the upper area, provided with a median rib and a frustoconical prominence between the rod and the blade. Dimensions: Ltotal: 22.0 cm; Lblade: 17.0 cm; Lrod: 5.0 cm; Wmax.: 4.2 cm; Tblade: 0.3 cm; Weight: 125 g. FB-29270.

Analogues are known in the settlements of the Noua culture west of the Prut – at Rogojeni [Florescu 1991, fig. 111/11], Vânători [Dumitroaia 1985, 469, fig. 6/b], Crucișoara and Răcătău [Dergachev 2011, ris. 146/3-4].

One item discovered in the Sabatinovka culture settlement at Mereni, Mereni village, Anenii-Noi district (cat. 11; fig. 8/2) [Savva 1992, 137, ris. 60/4; Dergačev 2002, Taf. 46/C; Sava 2002a, fig. 3/8; Sava 2014, fig. 182/21; Sirbu 2014, fig. 6/4] is a dagger with a rod on the handle and a leaf-shaped blade with a median rib, with the maximum width at the top. The transition from the blade to the peduncle is in a frustoconical shape. The cutting edges are broken. Dimensions: Ltotal: 17.0 cm; Lblade: 11.0 cm; Lpeduncle: 6.0 cm; Wmax.: 4.3 cm; Tblade: 0.25 cm; Weight: 49 g. FB-29274-1.

The item discovered in the Mereni settlement belongs to the Loboikov type. E. Chernykh attributes it to the H32 type [Chernykh 1976, 119]. Analogues are known in several settlements and deposits throughout the Noua-Sabatinovka cultures area – at Loboikov [Leskov 1981, Taf. 3/38-39; Kločko 1995, 118, Abb. 24/2-3,6], Mahala [Smirnova 1969, ris. 7/ I29], Suhaya Balka [Cherniakov 1985, 114, ris. 57/9], Khmelna, Kabakovo, Puzhaykove [Cherniakov 1964, 129, ris. 1], Dobryanka [Leskov 1981, Taf. 4/D1, 3], Borovoe, Klepikovo, Berdsk [Podobed, Usachuk, Tsimidanov 2009, ris. 3/2, 3, 6], Solonets [Sharafutdinova 1982, ris. 52/13], Cut [Popa 1999, 29, fig. 1], Ulmi-Liteni [Petrescu-Dîmbovița 1977, pl. 88/17; Florescu 1991, 273, fig. 101/8; Dascălu 2007, 402, pl. 68/9], Băleni [Dragomir 1967, fig. 8/3], Duda [Petrescu-Dîmbovița 1977, pl. 80/15], Rogojeni [Cherniakov 1985, 114, fig. 57/4; Florescu 1991, 283, fig. 111/11], Copăceana [Der-

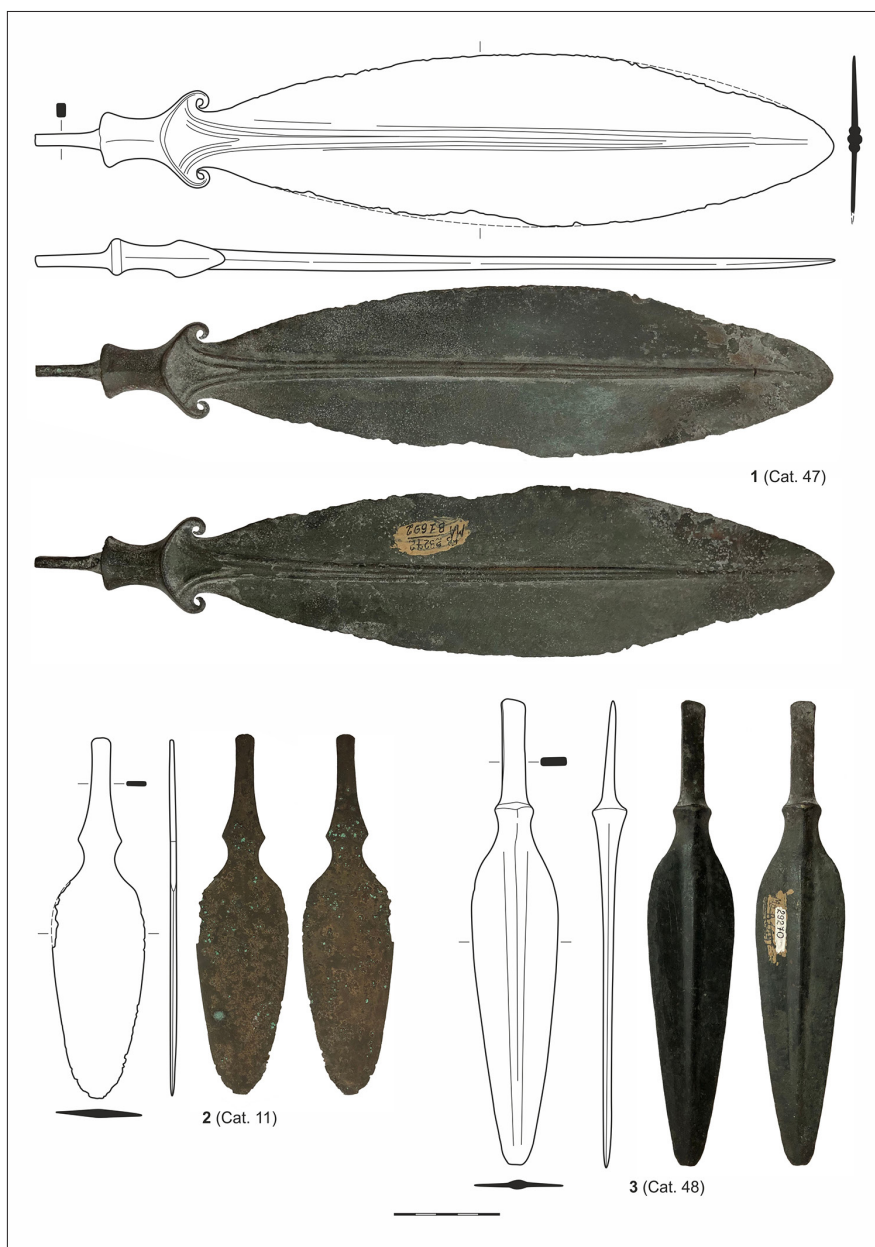


Fig. 8. 1 – Ciutulești, dagger, 2 – Mereni, dagger, 3 – Goian, dagger, (photos by E. Mistreanu, drawings by D. Topal).

gachev 2011, 231, ris. 146/4], Trușești [Dascălu 2007, 397, pl. 63/365], Crucișoara, Răcățau and Lățești [Dergačev 2002, Taf. 70/A423-424,426].

OTHER OBJECTS

Fragments of objects of uncertain function, seven items.

Bars

Two items discovered in the settlement of the Noua culture at Odaia-Miciurin.

1. Oval wire in section, curved towards one end (cat. 13; fig. 7/10) [Sava, Kaizer 2011, ris. 77/14; Sava 2014, fig. 92/14]. Dimensions: L: 6.4 cm; W:

0.4 cm; T: 0.3 cm; Weight 5.29 g. FA-11648-13.

2. Circular wire in section, curved at both ends (cat. 30; fig. 7/4) [Sava, Kaizer 2011, ris. 77/10; Sava 2014, fig. 92/10]. Dimensions: L: 7.8 cm; D: 0.3 cm. Weight 4.08 g. FA-11520-1.

One item discovered in the settlement of the Noua culture at Cobîlea (cat. 7; fig. 7/5) [Demchenko, Levitskii 1992, ris. 4/7; Levitsckii, Sava 1993, dis. 14/7; Dergačev 2002, Taf. 44/G/2; Sava 2014, fig. 159/13]. Circular wire in section slightly bent at the ends. Dimensions: L: 9.6 cm; D: 0.3 cm. Weight 8.20 g. FB-28381-10.

A twisted plate was discovered in the settlement of the Sabatinovka culture at *Taraclia-Gaid-abul* (cat. 63, fig. 7/12) [Sava et al. 2020a, fig. 80/3]. Dimensions: L: 3.1 cm; D: 0.4 cm; Tplate: 0.1 cm. Weight: 0.67 g. FA-12297-1. A small fragment of ingot of irregular square shape comes from the same settlement (cat. 58; fig. 7/14). FA-12297-4, Dimensions: L: 2.0cm; W: 1.9 cm; T: 0.7 cm. Weight: 15.80 g) and a plate of oxides (as demonstrated by its chemical analysis) of irregular shape (cat. 65; fig. 8/13) [Sava et al. 2020a, fig. 80/2]. Dimensions: L: 1.8 cm; W: 1.7 cm; T: 0.2 cm. Weight: 1.48 g. FA: 12297-6 [Sava et al. 2019a, fig. 175/4].

A fragment of bronze scrap, of irregular shape, was discovered in the settlement of the Noua culture at Odaia-Miciurin (cat. 22; fig. 7/15) [Sava, Kaizer 2011, ris. 77/24; Sava 2014, fig. 92/24]. Dimensions: L: 2.9 cm; W: 0.7 cm; T: 0.5 cm. Weight: 4.25 g. FA-11626-82.

Conclusions

Based on the distribution by categories of the analyzed objects, we can mention that the tools are the most numerous (30 items), followed by adornments (25 items) and a much smaller number of weapons (3 items). Being rarely found in archaeological assemblages [Sava, Kaiser 2004, 9, fig. 42/10,20, 62/10; Sava et al. 2019a, 18-19, fig. 30/5, 116/3], these metal objects come in most cases from the cultural layer of the settlements. Unfortunately, some of the objects (11 out of 65⁵) could not be completely cleaned of patina, which most likely affected the result of the analysis of the chemical composition, increasing the content of some impurities (cat. 1, 10, 19, 21, 22, 28, 30, 44, 46, 48, 65). The surfaces of the samples were exposed to X-rays (voltage – up to 45 keV, current power – 10 μ A), the exposure time being 60 sec., and the diameter of the area subjected to exposures (fluorescent field) – 3 mm. The analysis of the obtained spectra was performed by the software from the manufacturer (Xenometrix), in the simulation of the fundamental parameters of the sample components. This method allows the determination of the chemical composition of the sample with a margin of error of 3-5%, provided that certain

requirements are met: flat surface, with minimal roughness and homogeneous composition. As not all samples met these requirements, the accuracy with which some quantitative results were obtained may be slightly lower. To increase the accuracy of determining the composition of samples with cylindrical surfaces, the measurements were performed in geometry, when the cylinder surface generator, the axis of the X-ray exposure beam and the axis of the detector was in a single plane. In cases where the investigated surface was covered with layers generated by oxidation processes (patina, for example), in order to ensure the veracity of the data obtained, it was necessary to remove these layers to the metallic surface of the sample.

Excluding uncleaned objects, the lowest content of impurities (Sn: 0.5-1.2%; Pb: 0.35-1.2%) is documented for a fragment of wire (cat. 13), a pin of Rollenadel type (cat. 38), a fragment of a bracelet (?) (cat. 43), sewing needle (cat. 42), above all (Sn: 13-16%; Pb: 5.3-5.6%) – in awls (cat. 59, 15), pins with ring heads (cat. 54) and a knife (cat. 51). At the same time, the average values of tin are almost the same for tools, as well as for adornments, and amount to about 7%, while the content of lead, arsenic and antimony is visibly higher only for tools (especially for knives). Among tools, the awls stand out, in the composition of their alloy the tin can amount to 10-11%, while the average tin content in needles and knives is visibly lower. In the group of adornments, the tin content of the pin alloy is generally below average, although there are specimens with a tin content of 8-13% (cat. 2, 5, 39, 54, 64). It should be noted that most of the bronze pieces discovered in the Noua-Sabatinovka settlements are of Western origin, having direct analogues with the types of bronzes from Transylvania, but there are also objects of Eastern origin – (from the Dnieper river regions), e.g. daggers.

5. The chemical composition of seven objects (cat. 1, 10, 38, 39, 44, 47, 48) was already known [Dergačev 2002, 224], but we have to mention that these results contradict the recent ones (tab. 1).

Tab. 1. The chemical composition of bronze items according to XRF, % (I – catalogue number; II – museum number, site, year of excavation; III – chemical elements).

I	II	III												
		Cu	Sn	Pb	Zn	Ag	Sb	As	Fe	Ni	Co	Bi	Mn	Au
1	FB-29075-2, Gura-Galbenei I, 1968	83.1	15.3	0.46	-	-	-	0.57	0.25	0.14	0.05	-	0.02	0.15
2	FB-30520-11, Petrușeni III, 1984	86.5	10.9	1.64	-	-	-	0.31	0.04	0.49	0.03	-	0.07	-
3	FA-11473-4, Petrușeni III, 1984	94.1	3.5	0.18	-	0.32	1.14	0.15	-	0.52	-	-	0.08	-
4	FB-28233-22 Petrușeni III, 1984	92.0	6.7	0.42	-	-	0.18	0.14	0.34	0.12	-	-	0.06	0.02
5	FB-28233-21, Petrușeni III, 1984	83.8	10.8	0.60	-	0.26	0.88	1.22	0.07	2.05	0.28	-	0.09	-
6	FB-28233-5, Petrușeni III, 1984	86.6	11.2	0.44	-	-	0.07	0.34	0.11	1.06	0.06	-	0.08	-
7	FB-28381-10, Cobâlnea- Stația, 1988	90.6	7.1	0.60	-	-	-	0.52	0.27	0.78	0.07	-	0.01	0.04
8	FB-28381-5, Cobâlnea- Stația, 1988	85.0	11.4	0.41	-	-	0.73	0.49	1.34	0.54	0.10	-	0.05	-
9	FB-28381-15, Cobâlnea- Stația, 1988	86.5	11.9	0.39	-	-	0.39	0.40	0.24	0.09	-	-	0.03	0.05
10	FB-26732-11, Slobozia- Șireuți III, 1966	83.8	13.9	0.55	-	0.09	-	0.33	0.27	0.96	0.05	-	0.06	-
11	FB-29274-1, Mereni II, 1986	91.3	8.2	-	-	0.13	0.02	0.25	-	0.02	0.06	-	-	-
12	FB-27705-66 Ghindești VI, 1957	89.9	9.0	0.10	-	-	0.32	0.23	0.03	0.20	0.11	-	0.10	-
13	FA-11648- 13, Odaia- Miciurin, 2008	98.9	0.6	0.07	-	0.03	-	0.12	0.02	0.22	-	0.04	0.01	0.05
14	FB-29069- 3, Odaia- Miciurin, 2008	94.2	3.5	0.79	-	0.03	0.29	0.30	0.59	0.23	-	-	0.10	0.06
15	FB-29069- 2, Odaia- Miciurin, 2008	91.0	6.8	0.14	-	-	0.03	1.51	0.03	0.28	0.08	-	0.08	-
16	FB-29069- 9, Odaia- Miciurin, 2008	90.6	6.3	1.70	-	-	0.14	0.22	0.02	0.78	0.08	-	0.14	-

17	FB-29036-2, Odaia-Miciurin, 2007	86.8	11.8	0.55	-	-	0.09	0.47	0.04	0.32	0.02	-	-	0.02
18	FB-29036-3, Odaia-Miciurin, 2007	87.2	11.5	0.18	-	0.02	0.11	0.36	0.01	0.38	0.08	-	0.12	-
19	FB-29036-4, Odaia-Miciurin, 2007	94.1	4.6	0.76	-	-	0.04	0.14	0.22	0.06	0.04	-	0.11	0.01
20	FB-29036-8, Odaia-Miciurin, 2007	89.0	9.2	0.19	-	-	0.56	0.33	0.12	0.41	0.11	-	0.11	-
21	FA-11626-77, Odaia-Miciurin, 2007	95.3	3.3	0.35	0.01	-	0.10	0.33	0.09	0.28	0.05	-	0.06	0.22
22	FA-11626-82, Odaia-Miciurin, 2007	96.5	2.4	0.13	-	-	0.11	0.17	0.22	0.39	-	-	-	0.06
23	FA-11626-83, Odaia-Miciurin, 2007	88.7	7.4	1.83	-	-	0.77	0.36	0.30	0.55	0.05	-	-	0.04
24	FB-28771-17, Odaia-Miciurin, 2005	91.7	6.0	0.63	-	-	0.26	0.39	-	0.87	0.09	-	0.07	-
25	FB-28930-10, Odaia-Miciurin, 2006	95.5	3.2	0.30	-	-	0.16	0.18	0.01	0.45	0.10	-	0.11	-
26	FB-28930-14, Odaia-Miciurin, 2006	85.8	12.4	0.85	-	0.04	-	0.55	0.01	0.21	0.09	-	0.06	-
27	FB-28930-9, Odaia-Miciurin, 2006	85.6	11.9	0.70	-	-	0.01	0.56	0.20	1.04	0.04	-	-	0.02
28	FB-28535-7, Odaia-Miciurin, 2003	74.9	19.3	1.94	-	-	-	0.37	2.95	0.26	0.24	-	0.03	-
29	FB-28535-10, Odaia-Miciurin, 2003	93.8	5.1	0.64	-	-	-	-	0.09	0.21	-	0.07	0.07	-
30	FA-11520-1, Odaia-Miciurin, 2003	88.0	8.7	1.93	-	0.55	-	0.19	0.16	0.17	0.03	0.24	0.04	-
31	FB-28535-8, Odaia-Miciurin, 2003	93.2	4.7	0.76	-	-	0.29	0.27	0.02	0.58	0.11	-	0.08	-
32	FB-28535-30, Odaia-Miciurin, 2003	91.1	5.5	2.39	-	-	0.22	0.17	-	0.58	0.10	-	-	-
33	FA-11520-81, Odaia-Miciurin, 2003	91.2	6.9	0.42	-	-	0.10	0.30	0.11	0.70	0.14	-	0.10	-

34	FB-28143-5, Tudora XII, 1958	91.5	7.2	0.16	-	-	0.31	0.18	0.05	0.47	-	-	0.09	0.07
35	FB-28400-6, Ghindești VI, 1956	93.0	6.2	0.24	-	-	0.11	0.06	0.03	0.24	0.09	-	0.10	-
36	FB-29081, Văratice, 1961	88.8	5.3	1.82	-	0.40	2.02	0.61	0.18	0.73	0.04	-	0.01	0.08
37	FA-11653-2, Ghindești VI, 1957	92.4	6.1	0.42	-	-	0.12	0.20	0.03	0.48	0.08	0.07	0.08	-
38	FB- 29078-2, Ghindești VI, 1957	97.7	1.2	0.12	-	0.02	0.12	0.20	0.01	0.50	0.11	-	0.09	-
39	FB- 29078-3, Ghindești VI, 1957	89.7	8.6	0.14	-	0.04	0.58	0.44	0.02	0.24	0.12	-	0.11	-
40	FB- 29078-4, Ghindești VI, 1957	89.9	8.5	0.44	-	-	0.14	0.23	0.06	0.61	0.01	-	0.11	-
41	FB- 29078-7, Ghindești VI, 1957	97.3	2.0	-	-	-	0.08	0.37	-	0.05	0.12	-	0.11	-
42	FA-11653-1, Ghindești VI, 1957	97.1	1.2	0.08	-	0.03	-	0.20	0.33	0.72	0.08	0.20	0.10	-
43	FB-28079-23, Roșieticii Vechi V, 1957	97.3	1.2	0.25	-	-	0.17	0.31	0.31	0.36	0.08	-	-	-
44	FB-27817-4, Socoleni	93.9	4.7	0.16	-	-	0.53	0.40	-	0.28	0.01	-	-	-
45	FB-28409-1, Lazo	88.5	10.6	0.03	-	-	-	0.49	0.01	0.24	0.12	-	0.10	-
46	FB-29269-2, Isacova	81.9	15.9	1.55	-	0.06	-	0.09	0.39	0.03	-	0.12	0.01	-
47	FB-29272, Ciutulești	80.7	16.2	1.19	-	0.13	0.23	0.47	0.37	0.56	0.06	-	0.01	-
48	FB-29270, Goian	89.5	8.3	0.20	-	-	1.00	0.45	0.14	0.27	-	-	0.09	-
49	FB-30380, Balinți	96.1	2.9	0.34	-	-	0.02	0.20	0.01	0.30	0.08	-	0.07	-
50	FB-30530-1, Taraclia- Gaidabul, 2017	93.6	4.1	0.24	-	-	1.08	0.35	0.02	0.50	0.04	-	0.05	-
51	FB-30530-4, Taraclia- Gaidabul, 2017	91.3	2.5	2.22	-	0.40	2.03	0.78	0.01	0.58	0.06	-	0.08	0.04
52	FA-11297-5, Taraclia- Gaidabul, 2017	91.5	7.0	0.12	-	-	0.32	0.31	0.03	0.49	0.07	-	0.09	0.07

53	FB-30530-2, Taraclia- Gaidabul, 2017	86.1	9.5	1.71	-	0.03	0.91	0.65	0.04	0.96	0.07	-	0.10	-
54	FB-30530-3, Taraclia- Gaidabul, 2017	81.6	16.7	0.80	-	-	0.12	0.35	0.06	0.38	0.03	-	-	0.01
55	FA-12297-2, Taraclia- Gaidabul, 2018	92.5	5.9	0.22	-	0.01	0.23	0.29	0.03	0.47	0.04	0.28	-	0.07
56	FB-30520-5, Taraclia- Gaidabul, 2018	93.8	3.6	2.11	-	-	-	0.09	0.01	0.21	0.12	-	0.12	-
57	FA-12297-3, Taraclia- Gaidabul, 2018	93.0	5.9	0.05	-	-	-	0.27	0.06	0.51	0.09	-	0.09	-
58	FA-12297-4, Taraclia- Gaidabul, 2018	89.5	9.6	0.05	-	-	-	0.16	0.13	0.01	0.08	0.32	0.08	0.02
59	FB-30520-10, Taraclia- Gaidabul, 2019	79.7	16.2	3.03	-	-	0.20	0.29	0.04	0.52	0.04	-	—	-
60	FB-30520-8, Taraclia- Gaidabul, 2019	79.2	17.2	2.80	-	0.03	-	0.23	0.05	0.57	-	-	-	-
61	FB-30520-7, Taraclia- Gaidabul, 2019	88.6	9.7	0.18	-	-	0.62	0.21	0.19	0.36	0.04	-	0.07	-
62	FB-30520-9, Taraclia- Gaidabul, 2019	87.3	10.8	0.77	-	0.04	0.23	0.22	-	0.47	0.06	-	0.06	-
63	FA-12297-1, Taraclia- Gaidabul, 2019	89.1	8.5	0.58	-	-	0.43	0.56	0.11	0.55	0.07	-	0.07	-
64	FB-30520-6, Taraclia- Gaidabul, 2019	89.8	9.4	-	-	0.03	-	0.13	0.20	0.32	0.05	-	0.05	0.03
65	FA-12297-6, Taraclia- Gaidabul, 2019	76.1	23.5	0.11	-	0.02	-	0.06	0.05	0.01	0.01	0.09	0.04	-

Bibliography

- Aricescu 1970:** A. Aricescu, Depozite de unelte, arme, și podoabe de bronz din Dobrogea. Pontica 3, 1970, 25-76.
- Balaguri 1968:** E.A. Balaguri, Poselennia kul'tury Noa bilia s. Ostrivets', Ivano-Frankivs'koї oblasti. Arkheologija 21, 1968, 135-146 // E.A. Балагурі, Поселення культури Ноа біля с. Острівець, Івано-Франківської області. Археологія 21, 1968, 135-146.
- Balaguri 1971:** E.A. Balaguri, Kul'tura Noa. Arkheologija Ukraїns'koї RSR, t. 1, 385-394, 1971 // E.A. Балагурі, Культура Ноа. Археологія Української РСР, т. 1, 1971, 385-394.
- Berezanskaia et al. 1971:** S.S. Berezanskaia, Iu.M. Zakharuk, O.M. Leskov, D.Ia. Telegin, I.G. Shovkoplias, Arkheologija Ukraїns'koї RSR, t. 1, 1971 // С.С. Березанская, Ю.М. Захарук, О.М. Лесков, Д.Я. Телегин, И.Г. Шовкопляс, Археологія Української РСР, т. 1, 1971.

- Berezanskaia 1982:** S.S. Berezanskaia, Severnaia Ukraina v epokhu bronzy (Kiev1982) // С.С. Березанская, Северная Украина в эпоху бронзы (Киев 1982).
- Berezanskaia, Kruts, Telegin 1985:** S.S. Berezanskaia, V.A. Kruts, D.Ia. Telegin, Arkheologiiia Ukrainsoi SSR. Pervobytnaia arkheologiiia, t. 1 (Kiev 1985) // С.С. Березанская, В.А. Круц, Д.Я. Телегин, Археология Украинской ССР. Первобытная археология, т. 1 (Киев 1985).
- Berezanskaia et al. 1986:** S.S. Berezanskaia, V.V. Otroshchenko, N.N. Cherednichenko, I.N. Sharafutdinova, Kul'tury epokhi bronzy na territorii Ukrainy (Kiev 1986) // С.С. Березанская, В.В. Отрощенко, Н.Н. Чередниченко, И.Н. Шарафутдинова, Культуры эпохи бронзы на территории Украины (Киев 1986).
- Bočkarev, Leskov 1980:** V.S. Bočkarev, A.M. Leskov, Jung-und spätbronzezeitliche Gußformen im nördlichen Schwarzmeergebiet. PBF XIX, 1 (München, Beck 1980).
- Bolohan 2016:** N. Bolohan, Bronzul târziu la Dunărea de Jos. Componente și relații interculturale (Cluj-Napoca 2016).
- Cavruc 2003:** V. Cavruc, Noi descoperiri arheologice în sud-estul Transilvaniei (Sfântu Gheorghe 2003).
- Cherniakov 1964:** I.T. Cherniakov, Novye nakhodki predmetov pozdnei bronzy v Severno-Zapadnom Prichernomor'e. KSOГAM 1962 goda, 1964, 128-134 // И.Т. Черняков, Новые находки предметов поздней бронзы в Северно-Западном Причерноморье. КСОГAM 1962 года, 1964, 128-134.
- Cherniakov 1985:** I.T. Cherniakov, Severo-Zapadnoe Prichernomor'e vo vtoroi polovine II tys. do n.e. (Kiev 1985) // И.Т. Черняков, Северо-Западное Причерноморье во второй половине II тыс. до н.э. (Киев 1985).
- Chernykh 1976:** E.N. Chernykh, Drevniaia metalloobrabotka na Iugo-Zapade SSSR. (Moskva 1976) // Е.Н. Черных, Древняя металлообработка на Юго-Западе СССР (Москва 1976).
- Chernykh, Kuz'minykh 1989:** E.N. Chernykh, S.V. Kuz'minykh, Drevniaia metallurgiiia severnoi Evrazii (Moskva 1989) // Е.Н. Черных, С.В. Кузьминых, Древняя металлургия северной Евразии (Москва 1989).
- Chidioșan 1977:** N. Chidioșan, Depozitul de bronzuri de la Micșa. SCIV 28, I, 1977, 55-70.
- Ciugudean, Luca, Georgescu 2006:** H. Ciugudean, S.A. Luca, A. Georgescu, Depozitul de bronzuri de la Dipșa (Sibiu 2006).
- Dascălu 2007:** L. Dascălu, Bronzul Mijlociu și târziu în Câmpia Moldovei (Iași 2007).
- Demchenko, Levitskii 1992:** T.I. Demchenko, O.G. Levitskii, Issledovanie zol'nikov kul'tury Noua u st. Kobyl'nia. AIM v 1986 godu, 1992, 120-134 // Т.И. Демченко, О.Г. Левицкий, Исследование зольников культуры Ноуа у ст. Кобыльня. АИМ в 1986 году, 1992, 120-134.
- Dergachev 1969:** V.A. Dergachev, Poselenie epokhi bronzy u sela Slobodka-Shireutsy. In: (red. L.L. Polevoi) Dalekoe proshloe Moldavii (Kishinev 1969), 110-122 // В.А. Дергачев, Поселение эпохи бронзы у села Слободка-Ширеуцы. В: (ред. Л.Л. Полевой) Далекое прошлое Молдавии (Кишинев 1969), 110-122.
- Dergachev 1973:** V.A. Dergachev, Pamiatniki epokhi bronzy. АКМ 3, 1973 // В.А. Дергачев, Памятники эпохи бронзы. АКМ 3, 1973.
- Dergachev 1975:** V.A. Dergachev, Bronzovye predmetry XIII-VIII vv. do n.e. iz Dnestrovsko-Prut'skogo mezhdurech'ia (Kishinev 1975) // В.А. Дергачев, Бронзовые предметы XIII-VIII вв. до н.э. из Днестровско-Прутского междуречья (Кишинев 1975).
- Dergachev 1986:** V.A. Dergachev, Moldaviia i sosednie territorii v epokhu bronzy (Kishinev 1986) // В.А. Дергачев, Молдавия и соседние территории в эпоху бронзы (Кишинев 1986).
- Dergachev 1997:** V. Dergachev, Piese de metal – Referințe la problema genezei culturilor Hallstattului timpuriu din regiunea carpato-danubiano-nord-pontică. Thraco-Dacica XVIII, 1-2, 1997, 135-205.
- Dergachev 2002:** V. Dergachev, Die äneolithischen und bronzzeitlichen Metallfunde aus Moldavien. PBF XX, 9 (Stuttgart, Steiner 2002).
- Dergachev 2010:** V.A. Dergachev, Topory-kel'ty pozdnei bronzy Karpato-Podunav'ia, 1 (Kishinev 2010) // В.А. Дергачев, Топоры-кельты поздней бронзы Карпато-Подунавья, 1 (Кишинев 2010).
- Dergachev 2011:** V.A. Dergachev, Topory-kel'ty pozdnei bronzy Karpato-Podunav'ia, 2 (Kishinev 2011) // В.А. Дергачев, Топоры-кельты поздней бронзы Карпато-Подунавья, 2 (Кишинев 2011).
- Dergachev 2012:** V.A. Dergachev, Novye komplekсы i edinichnye nakhodki metallicheskih predmetov pozdnei bronzy-rannego gal'shtata na territorii Respubliki Moldova. RA VIII, 1-2, 2012, 161-181 // В. Дергачев, Новые комплексы и единичные находки металлических предметов поздней бронзы-раннего гальштата на территории Республики Молдова. RA VIII, 1-2, 2012, 161-181.
- Diaconu 2012:** V. Diaconu, Discuții privitoare la unele pandantive specifice bronzului târziu din nord-vestul și nordul Mării Negre. Peuce X, 2012, 21-38.
- Dietrich, Dietrich 2008:** L. Dietrich, O. Dietrich, Alte und neue Bronzefunde aus Rotbav „La Pârâuț“. MCA III, 2008, 89-102.

- Dragomir 1967:** I.T. Dragomir, Un nou depozit de obiecte de bronz descoperit la Băleni în sudul Moldovei. *Danubius I*, 1967, 89-105.
- Dumitroaia 1985:** Gh. Dumitroaia, Obiecte de aramă și bronz descoperite pe teritoriul județului Neamț. *MA IX-XI* (1977-1979), 1985, 465-482.
- Florescu 1991:** A.C. Florescu, Repertoriul culturii Noua-Coslogeni din România. *CCDJ IX*, 1991.
- Florescu, Căpitanu 1968:** M. Florescu, V. Căpitanu, Câteva observații privitoare la sfârșitul epocii bronzului în lumina ultimelor cercetări arheologice efectuate de Muzeul de Istorie din Bacău. *Carpica 1*, 1968, 35-47.
- Florescu, Florescu 1990:** M. Florescu, A.C. Florescu, Unele observații cu privire la geneza culturii Noua în zonele de curbură ale Carpaților Răsăriteni. *AM XIII*, 1990, 49-102.
- Gerškovič 1999:** Ja.P. Gerškovič, Studien zur spätbronzezeitlichen Sabatinovka-Kultur am unteren Dnepr und an der Westküste des Azov'schen Meeres. *AE 7* (Rahden/Westf., Leidorf, 1999).
- Hansen 1994:** S. Hansen, Studien zu den Metalldeponierungen während der älteren Urnenfelderzeit zwischen Rhônetal und Karpatenbecken. Teil I. (Bonn 1994).
- Kașuba 2003:** M. Kașuba, Periferia de est a complexului hallstattian timpuriu cu ceramică incizată și imprimată (sec. X-VIII î.e.n.) în interfluviul Nistru-Siret. In: (ed. E. Sava) *Interferențe cultural-cronologice în spațiul nord-pontic* (Chișinău 2003), 183-210.
- Ketraru, Rafalovich 1964:** N.A. Ketraru, I.A. Rafalovich, Dva kinzhala epokhi bronzy iz Moldavii. *Materialy i issledovaniia po arheologii i etnografii Moldavskoi SSR* (Kishinev 1964), 219-220 // Н.А. Кетрапу, И.А. Рафалович, Два кинжала эпохи бронзы из Молдавии. *Материалы и исследования по археологии и этнографии Молдавской ССР* (Кишинев 1964), 219-220.
- Klochko 1994:** V.I. Klochko, Metallurgicheskoe proizvodstvo v eneolite-bronzovom veke. In: (red. S.S. Berezanskaia i dr.) *Remeslo epokhi eneolita-bronzy na Ukraine*. (Kiev 1994), 96-130 // В.И. Ключко, *Металлургическое производство в энеолите-бронзовом веке*. В: (ред. С.С. Березанская и др.) *Ремесло эпохи энеолита-бронзы на Украине* (Киев 1994), 96-130.
- Kločko 1995:** V. Kločko, Zur bronzezeitlichen Bewaffung in der Ukraine. *Die Metallwaffen des 17-10 Jrs. v. Chr. Eurasia Antiqua 1*, 1995, 81-163.
- Krushel'nits'ka 2006:** L.I. Krushel'nits'ka, Kul'tura Noa na zemliakh Ukraïni (L'viv 2006) // Л.И. Крушельницька, *Культура Ноа на землях України* (Львів 2006).
- Lazanu, Ursache 2013:** C.C. Lazanu, C.N. Ursache, Depozitul de bronzuri de la Oțeleni-Cimitirul ortodox (com. Hocenii, jud. Vaslui). In: (ed. B.P. Niculică, D. Boghian) *Semper fidelis. In honorem magistri Mircea Ignat* (Suceava 2013), 175-194.
- Leskov 1971:** O.M. Leskov, Zrubna kul'tura. *Arkheologiiia Ukraïns'koï RSR*, t. I, 1971, 404-434 // О.М. Лесков, *Зрубна культура*. *Археологія Української РСР*, т. I, 1971, 404-434.
- Leskov 1981:** A.M. Leskov, Jung-und spätbronzezeitliche depotfunde in nördlichen Schwarzmeergebiet I. *PBF XX*, 5 (München 1981).
- Levitsckii, Sava 1993:** O.G. Levitsckii, E.N. Sava, Nouvelles recherches des établissements de la culture Noua dans la zone comprise entre la Prout et le Nistru. *CCDJ IX*, 1993, 125-155.
- Levițki 1994:** O. Levițki, Cultura hallstattului canelat la răsărit de Carpați. *Biblioteca Thracologica VII* (București 1994).
- Lisenko, Lisenko, Didenko 2004:** S.D. Lisenko, S.S. Lisenko, S.V. Didenko, Shpil'ki z krugloiu shliapkoïu ta vushkom iz zibrannia Natsional'nogo muzeïu istoriï Ukraïni. *Natsional'nii muzeï istoriï Ukraïni: postup u trete tisiacholittia*, 2004, 191-196 // С.Д. Лисенко, С.С. Лисенко, С.В. Диденко, Шпильки з круглою шляпкою та вушком із зібрання Національного музею історії України. *Національний музей історії України: поступ у третє тисячоліття*, 2004), 191-196.
- Lysenko et al. 2005:** S.D. Lysenko, S.S. Lysenko, S.V. Didenko, E.A. Iakubenko, Bronzovye ukrasheniia epokhi pozdnei bronzy – nachala rannego zheleznogo veka iz fondov Natsional'nogo muzeïa istorii Ukrainy. In: *Problemi arkeologii Seredn'ogo Podniprovia: Do 15-richchia zasnovannia Fastivs'kogo derzhavnogo kraeznavchogo muzeïu* (Kiev 2005), 152-200 // С.Д. Лысенко, С.С. Лысенко, С.В. Диденко, Е.А. Якубенко, *Бронзовые украшения эпохи поздней бронзы – начала раннего железного века из фондов Национального музея истории Украины*. В: *Проблеми археології Середнього Подніпров'я: До 15-річчя заснування Фастівського державного краєзнавчого музею* (Киев 2005), 152-200.
- Lysenko et al. 2012:** S.D. Lysenko, P. Makarovich, S.S. Lysenko, T.Iu. Goshko, Metallicheskie izdeliia iz kurganov komarovskoi kul'tury mogil'nika Bukovna. *ADIU 8*, 2012, 38-42 // С.Д. Лысенко, П. Макарович, С.С. Лысенко, Т.Ю. Гошко, *Металлические изделия из курганов комаровской культуры могильника Буковна*. *АДИУ 8*, 2012, 38-42.

- Meliukova 1961a:** A.I. Meliukova, Kul'tury predskifskogo perioda v Lesostepnoi Moldavii. Pamiatniki epokhi bronzы i rannego zheleza v Severnom Prichernomor'e. MIA SSSR 96, 1961, 5-52 // A. И. Мелюкова, Культуры предскифского периода в лесостепной Молдавии. МИА СССР, 96, 1961, 5-52.
- Meliukova 1961b:** A.I. Meliukova, Raboty v Podnestrov'e v 1958 godu. KSIA 84, 1961, 113 // A.И. Мелюкова, Работы в Поднестровье в 1958 году. КСИА 84, 1961, 113.
- Morintz 1978:** S. Morintz, Contribuții arheologice la istoria tracilor timpurii: Epoca bronzului în spațiul carpatobalcanic, Vol. I (București 1978).
- Niculiță, Zanoci, Băț 2016:** I. Niculiță, A. Zanoci, M. Băț, The Horizon with incised pottery of the Holercani-Hansca tape in the Middle Dniester river region. In: (eds. A. Zanoci et al.) Mensch, Kultur und gesellschaft von der Kupferzeit bis Frühen Eisenzeit im Nördlichen Eurasien. Beiträge zu ehren zum 60. Geburtstag von Eugen Sava (Chișinău 2016), 295-317.
- Novikova 1976:** L.A. Novikova, Zapadnye svyazi severoprichernomorskogo ochaga metalloobrabotki v epokhu pozdnei bronzы. SA 3, 1976, 25-75 // Л.А. Новикова, Западные связи северопричерноморского очага металлообработки в эпохи поздней бронзы. СА 3, 1976, 25-75.
- Petrescu-Dîmbovița 1977:** M. Petrescu-Dîmbovița, Depozitele de bronzuri din România (București 1977).
- Petrescu-Dîmbovița 1978:** M. Petrescu-Dîmbovița, Die Sichel in Rumänien. PBF XVIII, 1. (München, Beck 1978).
- Podobed, Usachuk, Tsimidanov 2009:** V.A. Podobed, A.N. Usachuk, V.V. Tsimidanov, Nozhi epokhi pozdnei bronzы s kol'tsevym uporom iz Tsentral'noi Azii i Sibiri i ikh zapadnye analogii. Drevnosti Sibiri i Tsentral'noi Azii 1-2 (13-14), 2009, 3-16 // В.А. Подобед, А.Н. Усачук, В.В. Цимиданов, Ножи эпохи поздней бронзы с кольцевым упором из Центральной Азии и Сибири и их западные аналогии. Древности Сибири и Центральной Азии 1-2 (13-14), 2009, 3-16.
- Popa 1999:** C.I. Popa, Un pumnal de tip răsăritean provenit de la Cut (jud. Alba). Carpica XXVIII, 1999, 17-30.
- Savva 1992:** E.N. Savva, Kul'tura mnogovalikovoі keramiki Dnestrovsko-Prutskogo mezhdurech'ia (po materialam pogrebal'nogo obriada) (Kishinev 1992) // E.Н. Савва, Культура многоваликовой керамики Днестровско-Прутского междуречья (по материалам погребального обряда) (Кишинев 1992).
- Sava 1998:** E. Sava, Die Rolle der „östlichen“ und „westlichen“ Elemente bei der Genese des Kulturkomplexes Noua-Sabatinovka. In: Das Karpatenbecken und die osteuropäische Steppe. Nomadenbewegungen und Kulturaustausch in den vorchristlichen Metallzeiten (4000-500 v. Chr.) (München-Rahden/Westf., Leidorf 1998), 267-312.
- Sava 2002a:** E. Sava, Materiale din epoca bronzului târziu din așezarea Mereni. AM XXV, 2002, 69-92.
- Sava 2002b:** E. Sava, Die Bestattungen der Noua-Kultur. Ein Beitrag zur Erforschung spätbronzezeitlicher Bestattungsriten zwischen Dnestr und Westkarpaten. PAS, Bd. 19. (Kiel, Oetker/Voges 2002).
- Sava 2014:** E. Sava, Așezări din perioada târzie a epocii bronzului în spațiul pruto-nistrean (Noua-Sabatinovka) (Chișinău 2014).
- Sava, Boroffka 2013:** E. Sava, N. Boroffka, Novye nakhodki bronzovykh predmetov epokhi pozdnei bronzы v Pruto-Dnestrovskom mezhdurech'e. RA IX, 1, 2013, 166-187 // E. Сава, Н. Бороффка, Новые находки бронзовых предметов эпохи поздней бронзы в Пруто-Днестровском междуречье. RA IX, 1, 2013, 166-187.
- Sava, Kaiser 2004:** E. Sava, E. Kaiser, Cercetări arheologice în așezarea culturii Noua de la Odaia/Miciurin în anul 2003. Raport arheologic științific, Arhiva MNIM, Nr. 427 (Chișinău 2004).
- Sava, Kaizer 2011:** E. Sava, E. Kaizer, Poselenie s «zol'nikami» u sela Odaia, Michurin, Respublika Moldova (Arheologicheskie i estestvennonauchnye issledovaniia) (Chișinău 2011) // E. Сава, Э. Кайзер, Поселение с «золъниками» у села Одая, Мичурин, Республика Молдова (Археологические и естественнонаучные исследования) (Chișinău 2011).
- Sava et al. 2019a:** E. Sava, E. Kaiser, M. Sirbu, E. Mistreanu, V. Bubulici, L. Sirbu, Așezarea de la Taraclia-Gaidabul. O nouă etapă de cercetare. Campania 2018. In: Cercetări arheologice în Republica Moldova. Campania 2018. Sesiunea Națională de Rapoarte, 18 aprilie 2019 (Chișinău 2019), 46-48.
- Sava et al. 2019b:** E. Sava, E. Kaiser, M. Sirbu, E. Mistreanu, V. Bubulici, Raport științific privind rezultatele investigațiilor arheologice din anii 2017-2018 în așezarea culturii Sabatinovka de la Taraclia-Gaidabul. Arhiva MNIM, Nr. 616 (Chișinău 2019).
- Sava et al. 2020a:** E. Sava, E. Kaiser, M. Sirbu, E. Mistreanu, V. Bubulici, L. Sirbu, Raport științific privind rezultatele investigațiilor arheologice din anul 2019 în așezarea culturii Sabatinovka de la Taraclia-Gaidabul, Arhiva MNIM, Nr. 635 (Chișinău 2020).
- Sava et al. 2020b:** E. Sava, E. Kaiser, M. Sirbu, E. Mistreanu, V. Bubulici, L. Sirbu, Rezultatele preliminare ale cercetărilor arheologice în așezarea de la Taraclia-Gaidabul. In: Cercetări Arheologice în Republica Moldova. Campania 2019. Sesiunea Națională de Rapoarte, 18 aprilie 2020 (Chișinău 2020), 44-46.

- Sharafutdinova 1982:** I.N. Sharafutdinova, *Stepное Podneprov'e v epokhu pozdnei bronzы* (Kiev 1982) // И.Н. Шарафутдинова, *Степное Поднепровье в эпоху поздней бронзы* (Kiev 1982).
- Sharafutdinova 1987:** I.N. Sharafutdinova, *Bronzovye ukrasheniia sabatinovskoi kul'tury*. In: *Mezhplemennye sviazi epokhi pozdnei bronzы na territorii Ukrainy* (Kiev 1987), 69-86 // И.Н. Шарафутдинова, *Бронзовые украшения сабадиновской культуры*. В: *Межплеменные связи эпохи поздней бронзы на территории Украины* (Kiev 1987), 69-86.
- Sirbu 2013:** M. Sirbu, *Depozitul din perioada tardivă a epocii bronzului descoperit în împrejurimile comunei Antonești, raionul Cantemir, Republica Moldova*. *Tyragetia VII (XXII)*, 1, 2013, 205-218.
- Sirbu 2014:** M. Sirbu, *Piese de bronz descoperite în așezările de tip Noua-Sabatinovka din spațiul pruto-nistrean*. *Tyragetia VIII (XXIII)*, 1, 2014, 185-203.
- Sirbu 2015:** M. Sirbu, *Viața spirituală a comunităților Noua-Sabatinovka-Coslogeni prin prisma elementelor non-funerare descoperite în așezări*. *Tyragetia IX*, 1, 2015, 91-122.
- Sirbu, Sava 2014:** M. Sirbu, E. Sava, *Obiecte din bronz*. In: E. Sava, *Așezări din perioada târzie a epocii bronzului în spațiul pruto-nistrean (Noua-Sabatinovka)* (Chișinău 2014), 481-500.
- Sirbu, Popovici, Vornic 2019:** M. Sirbu, S. Popovici, V. Vornic, *The hoard of bronze artifacts discovered near village Haragiș (Cantemir district)*. *Tyragetia XIII (XXVIII)*, 1, 2019, 229-241.
- Smirnova 1957:** G.I. Smirnova, *Poselenie pozdnebronzovogo veka i rannego zheleza vozle s. Magala Chernovitskoi oblasti*. *KSIA 70*, 1957, 99-107 // Г.И. Смирнова, *Поселение позднебронзового века и раннего железа возле с. Магала Черновицкой области*. *КСИА 70*, 1957, 99-107.
- Smirnova 1969:** G.I. Smirnova, *Poselenie Magala – pamiatnik drevnefrakiiskoi kul'tury v Prikrapat'e (vтораia polovina XIII – seredina VII vv. do n.e.)*. In: (red. T.D. Zlatkovskaia, A.I. Meliukova) *Drevnie frakiitsy v Severnom Prichernomor'e* (Moskva 1969), 7-34 // Г.И. Смирнова, *Поселение Магала – памятник древнефракийской культуры в Прикарпатье (вторая половина XIII – середина VII вв. до н.э.)*. В: (ред. Т.Д. Златковская, А.И. Мелюкова) *Древние фракийцы в Северном Причерноморье* (Москва 1969), 7-34.
- Topal, Sirbu 2016:** D. Topal, M. Sirbu, *New hoards and solitary finds of the Bronze Age – Early Iron Age from the territory of Republic of Moldova*. In: (eds. A. Zanoci et al.) *Mensch, Kultur und gesellschaft von der Kupferzeit bis Frühen Eisenzeit im Nördlichen Eurasien. Beiträge zu ehren zum 60. Geburtstag von Eugen Sava* (Chișinău 2016), 251-267.
- Ușurelu 2010:** E. Ușurelu, *Cronologia complexelor ce țin de prelucrarea metalelor în perioada târzie a epocii bronzului din spațiul Carpato-Dunăreani-Nord Pontic I*. *RA VI*, 1, 2010, 24-71.

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