

## The cemetery of the Cernavodă I culture at Orlovka-Kartal

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*Abstract:* The article presents materials of the late Eneolithic cemetery related to the Cernavodă I culture. The cemetery is part of a very extensive archaeological complex with the name Kartal located in the vicinity of the village of Orlovka (the Reni district, the Odessa county) on the Lower Danube. About 40 late Eneolithic graves were uncovered in the cemetery for several years of excavations. The graves are represented by inhumations in oval and rectangular pits. The deceased are buried in a crouched position on the left side or on the back. Grave goods are quite rare and usually include single vessels. Burial rite in the cemetery has clear parallels in mortuary traditions of the Cernavodă I culture in the Balkans and steppe Eneolithic graves in the North-West Pontic region.

*Key words:* North-West Pontic region, prehistory, prehistoric archaeology, late Eneolithic, steppe Eneolithic, Cernavodă I culture, Usatovo culture, mortuary archaeology, cemetery, burial rite.

### Introduction

The multicultural site of Orlovka-Kartal (the Reni district, the Odessa county) represents a very extensive and structurally diversified archaeological complex consisting of settlements, special production zones, barrow and flat cemeteries and defensive structures. It occupies a huge area extended along the east-west line for about 3.5 kilometres. The eastern border of the complex is marked by a Roman rampart and a ditch running from the south-east to the north-west and crossing the eastern periphery of the modern village of Orlovka. Almost whole territory of the village represents part of the archaeological site. It is evidenced by numerous archaeological finds which are regularly found in the village.

Main archaeological objects are concentrated in the western part of the site about 1.5 km west of the village (Fig. 1, 2). They are situated on a narrow promontory extended from the east to the west and bordered on the north by the Cahul Lake and on the south by a girt of the Danube. Western extremity of the promontory is occupied by a multilayer settlement which consists of two

parts. The western part is located on the top of an eminence with the name of Kamennaya Gora (English: Stone Hill) which represents a kind of a fortified acropolis. Initially this eminence covered the area of about 3–4 ha but now it is almost completely destroyed due to extraction of schist. A lower settlement or a suburb is attached from the east to the acropolis. Cultural deposits on the settlement are about 3 m thick. They consist of separate layers of different epochs. Remains of the settlement of the Gumelnița A culture (the Bolgrad variant) lay in the basis of the deposits. This settlement is covered by the late Eneolithic layer represented by the Cernavodă I culture.<sup>1</sup> Upper layers include materials of the Early Iron Age, classical Greek and Hellenistic periods of the IV–III centuries BC and the late Roman period.<sup>2</sup> Sporadic finds of the Middle Ages are evidenced too. All these cultural layers are uncovered both in the acropolis and in the lower settlement. The settlement of the Cernavodă I

<sup>1</sup> Govedarica / Manzura 2015, 445 ff.

<sup>2</sup> Бруйко / Манзура / Субботин / Топал 2005, 5 ff.;

Бруйко / Засыпкина / Манзура / Субботин 2009, 339 ff.

culture was protected by seven defensive ditches up to three meters deep.

An extensive multicultural cemetery was uncovered in 2004 approximately 200 meters east of the settlement.<sup>3</sup> The excavated area from 2004 to 2018 is 5865 square meters. The cemetery is situated on the slope of the promontory gently declining to the Kagul Lake (Fig. 1, 2). Several hundred graves are related to the Early Iron Age. Additionally, isolated burials of the Yamnaya and Babino cultures, the Late Bronze Age and the Sarmatian culture have been found on the territory of the cemetery. About forty graves can be attributed to the Cernavodă I culture of the late Eneolithic period.

## Presentation of material

**Grave 10** (the Cernavodă I culture) is uncovered in squares O–Π/1 (area I) on the depth of 1.1 m from modern surface (Fig. 1, 3; 9, 1). The irregular oval pit (1.5×1.1 m, 1.55 m deep) was extended along the north-east – south-west axis.

The skeleton (woman 30–35 years old)<sup>4</sup> was disposed in a crouched position on the left side with the skull to the north-east (74°). The left arm was bent in the elbow and with the forearm stretched forth. The right arm was also bent and lay with the hand on the left forearm (Fig. 2, 1; 9, 1). Dark-brown remains of organic mat maintained on the bottom of the pit. A lump of ochre lay at the left shoulder of the skeleton.

Inventory: 1. A bowl with S-shaped profile was placed at the parietal part of the skull. It is modelled from the shell-tempered clay. The shoulders of the bowl were ornamented by one horizontal row of semicircular imprints of a hard stamp (Fig. 2, 2). Dimensions of the bowl: height – 5.8 cm, diameter of the rim – 7.8 cm, diameter of the body – 8 cm, diameter of the bottom – 3.5 cm. 2. Small ceramic fragment lay in front of the deceased.

**Grave 14** (the Cernavodă I culture) was uncovered in square Π/2 (area I) on the depth of 1.36 m (Fig. 1, 3). The oval burial pit (1.85×1.8 m, 1.75 m deep) was extended along the east-west line. The northern side of the pit was destroyed by a structure of the antique period.

The skeleton (female 25–30 years old) lay in a crouched position on the left side with the skull to the south-east (120°). The left arm was destroyed by a later pit. The right hand was bent in the elbow with the forearm in the abdominal region, perpendicular to the body (Fig. 2, 3; 9, 2). The bones were covered by red ochre. The burial chamber was filled by the layer of wattle and daub lumps. A funnel-shaped hole was made in the centre of the layer. It has been stopped up by a clay plug, something like closed Seelenloch. Fragments of thin-walled shell-tempered pottery occurred in the filling of the pit. Grave goods were absent.

**Grave 20** (the Cernavodă I culture) was uncovered in square K/8 (area I) on the depth of 0.96 m (Fig. 1, 3). The burial pit had approximately rectangular shape with strongly rounded corners. It was extended along the south-east – north-west line. Narrow steps 15 cm high were carved up along the walls except the eastern side. Dimensions of the pit on the upper level are 1.67×1.17 m, on the lower level – 1.4×1 m. The depth of the grave is 1.41–1.38 m.

The skeleton (adult female) lay in a crouched position on the left side with the skull to the south-east (117°). The arms were bent in the elbow and laid with the hand in front of the face (Fig. 2, 5; 9, 3). Dark-brown remains of the plant mat covered the bottom of the pit.

Inventory: 1. A small amphora made of well purified clay was placed in front of the skeleton, close to the southern wall of the pit. It has two tunnel handles on the body (Figs. 2, 4; 12, 26). The surface of the vessel is well smoothed and burnished. Dimensions of the amphora: height – 11.8 cm, diameter of the rim – 10 cm, diameter of the body – 13.5 cm, diameter of the bottom – 5.5 cm. 2. A vessel of the milk-jug type was placed in front of the face of the deceased. Two tubular handles are disposed on the edge of the rim (Figs. 2, 6; 12, 27). The light-brownish surface is similarly well smoothed and burnished. Dimensions of the vessel: height – 7.5 cm, diameter of the rim

<sup>3</sup> Bruyako / Manzura / Subbotin 2005, 13 ff.; Бруяко, И. В. / Субботин, А. В. / Субботин, Л. В. 2005, 70 ff.; Бруяко / Манзура / Субботин 2006, 78–80.

<sup>4</sup> Anthropological analysis of skeletons was carried out by K. S. Lipatov (the Odessa I. I. Mechnikov National University), V. A. Moiseev and V. I. Selezneva (the Museum of Anthropology and Ethnography of the Russian Academy of Sciences, Saint-Petersburg).

– 7.3 cm, diameter of the body – 9.4 cm, diameter of the bottom – 4.2 cm

**Grave 36** (the Cernavodă I culture) is found in squares O-II/7–8 (area I) on the depth of 1.07–1.11 m (Fig. 1, 3). The burial structure and the skeleton were severely disturbed by later intrusions. The burial structure was represented by rests of an oval pit 1.4–1.45 m deep extended along the south-east – north-west line.

The skeleton of an adult male lay in a crouched position on the left side with the skull to the south-east (116°). The left arm was slightly bent and with the forearm stretched to the knees. The right arm was also bent and lay with the forearm on the chest perpendicular to the body (Fig. 2, 7). The bottom of the pit was covered by dark-brown remains of the plant mat. Grave goods were absent.

**Grave 73** (the Cernavodă I culture) was uncovered in squares Φ-X/I–II (area I) on the depth of 0.86 m (Fig. 1, 3). The head of the deceased was under the grave 72 of the Early Iron Age. The oval burial pit (1.4×0.85 m, 1.15 m deep) was extended along the east-west line.

The skeleton (adult woman) was disposed in a crouched position on the back with the body tilted to the right side and with the skull to the north-east (79°). The right arm was bent in the elbow and lay on the right knee. The left arm was also bent with the hand on the pelvis (Figs. 2, 8; 12, 4). A reach-through hole was situated on the parietal lobe. The brown dust from a plant mat was traced on the bottom of the pit. Grave goods were absent.

**Grave 145** (probably the Cernavodă I culture) was situated in squares II-Ч/5 (eastern appendix to the area I) in the pit of later period. The burial was covered with very dense oval layer of wattle and daub soil (1.2×1.1 m). The oval burial pit (1.25×0.8 m, 1.08 m deep) was extended along the south-east – north-west line.

The deceased (adult) lay in a strongly crouched position on the left side with the head to the south-east (154°). The skull was removed by a later intrusion, only the lower jaw maintained in original position (Fig. 3, 1). Both arms were bent in the elbows with the hands in front of the face. Grave goods were absent.

**Grave 160** (the Cernavodă I culture) was found in squares H-O/IV–V (area IV) on the depth of 0.9–0.95 m from modern surface (Fig.

1, 3). The burial pit of nearly rectangular shape (1.8×0.85 m, 1.25–1.28 m deep) was extended along the north-east – south-west line. A ledge 10 cm wide and 10 cm high was made along the north-eastern side of the pit (Fig. 3, 3). Remains of the deceased in the burial were absent. The grave probably represents a cenotaph or a cult complex.

Inventory: A vessel of orange colour made in the technological tradition of the Cucuteni-Tripolye culture was found at the south-eastern wall, close to the eastern corner (Fig. 3, 2; 12, 28). Two vertical handles were placed on the shoulders of the vessel. Dimensions of the vessel: height – 6.9 cm, diameter of the rim – 3.7 cm, diameter of the body – 7 cm, diameter of the bottom – 2.7 cm.

**Grave 168** (probably the Cernavodă I culture) was uncovered in squares Φ-X/6–7 (area I) on the depth of 0.62 m (Fig. 1, 3). The northern part of the burial pit and the lower part of the skeleton were destroyed by a later structure. According to preserved parts it can be established that the pit had an oval shape with orientation along the south-east and north-west line. The pit has become narrower to the bottom through steps cut out in the walls. Dimensions of the pit in the upper part could be 1.8×1.5 m, in the lower part – 1.5×1.0 m. The bottom of the pit went down from north-west to south-east to 15 cm. It was on the depth of 0.98–1.12 m from modern surface.

The skeleton (adult male) probably lay in a crouched position on the back with the skull to the south-east (164°). The left arm was bent and with the forearm drawn aside from the body. The humerus only preserved from the right arm which also was extended aside from the body (Fig. 3, 4).

Inventory: Compact accumulation of 6 flint flakes was uncovered under the skull (Fig. 12, 1–6).

**Grave 193** (the Cernavodă I culture) with the surrounding cromlech was situated on the border of excavation surfaces IV and V (Fig. 1, 3). The cromlech was built of flat stones (dark-green schist) which were laid flatways in several layers. It represented in plan a semicircle open from the south-eastern side (Fig. 3, 5). The base of the cromlech was on the depth of 0.75–0.8 m from the modern surface. The masonry was especially massive in the north-eastern sector where its

width was 60–100 cm and thickness reached 40–45 cm. In this part stones of middle size (20×25 cm, 30×15 cm, etc.) and big size (50×30 cm, 60×25 cm, etc.) lay very tightly. The second semicircle was situated at the outer side of the inner semicircle. It consisted of small flat stones which were laid in a broken manner in one layer on the depth of 0.6–0.7 m. The presence of two semicircles can be considered as a constructive element of the structure. The inner semicircle had external diameter 7 m, the outer semicircle – 8 m. The cromlech was disturbed in some places by intrusions of the Early Iron Age however in the southern part such intrusions were absent so the gap in this sector seems to have been left intentionally.

The burial was situated in the centre of the area outlined by the cromlech. The rectangular pit (1.7×1.2 m, 1.7 m deep) was extended along the east-west line with some insignificant deviations.

The deceased (adult female) was buried in a crouched position on the with the head to the east (80°). The body was slightly tilted to the left side. The left arm was bent in the elbow and with the forearm stretched forth. The right humerus lay along the body whereas bones of the forearm were absent (Fig. 3, 6; 9, 5). The bones of the skeleton were covered with red ochre. Two small lumps of ochre was situated right of the skull. Two fragments of Eneolithic pottery lay at the left shoulder and left of the pelvis. The bottom of the pit was covered with remains of a plant mat.

**Grave 204** (the Cernavodă I culture) was uncovered in squares B–Γ/XX (area V) on the depth of 0.55–0.6 m (Fig. 1, 3). The rectangular burial pit with rounded corners in its western part (1.7×1.05–0.85 m, 1.3 m deep) was extended along the east-west axis. A low ledge 15–25 cm wide and 5 cm high was made along the eastern side of the pit.

Remains of two individuals were found in the grave. Both skeletons were severely disturbed by animal holes. Position of an adolescent in the southern part of the pit was not determined due to bad preservation of the skeleton. It lay with the head to the east (approximately 90°). The second skeleton (adult female) was disposed in a crouched position on the back with the head to the south-east (116°). The skull was turned to the left and tilted to the shoulder (Fig. 3, 7; 9, 6).

Dark-brown remains of a plant mat were traced under the second skeleton.

Grave inventory consisted of tubular, cylindrical and disk-shaped beads and shells. 1. Cylindrical bead of almost black colour (jet – ?) lay at the skull of the adult individual, near the eastern wall. Diameter of the bead is 0.8 cm, thickness – 0.5–0.3 cm (Fig. 3, 17; 12, 17). 2. Seven small disk-shaped beads made of bone lay under the skull of the adult individual. Diameter of the beads is 0.7–0.8 cm, thickness – 0.15–0.25 cm (Fig. 3, 10–16; 12, 10–16). 3. Bone cylindrical bead lay in the area of the stomach of the adult individual. Diameter of the bead is 1.2 cm, length – 0.7 cm (Fig. 3, 8; 12, 9). 4. Long shell pendant lay at the skull of the adult individual. Diameter of the pendant is 1.2 cm, length – 0.7 cm (Fig. 3, 9; 12, 18). 5. Several small river shells were dispersed near the left elbow of the adult individual.

**Grave 205** (the Cernavodă I culture) was uncovered in squares Y/6–7 (area I) on the depth of 0.7 m (Fig. 1, 3). Late Eneolithic material was found in the pit 145 of the Early Iron Age. Fragments of two skulls were found in the upper layer of the pit. Several fragments of a vessel made of shell-tempered clay arranged in a stack were situated at one of the skulls (Fig. 4, 1; 12, 31.). A long ledge was identified in the south-eastern sector of the later pit which perhaps represents remains of the Eneolithic grave.

**Grave 221** (the Cernavodă I culture) was uncovered in squares X–II/XXIII (area IV) on the depth of 1.05–1.1 m (Fig. 1, 3). The rectangular pit with rounded corners (dimensions on the upper level 1.98×0.86–0.98 m, on the lower level 1.6×0.85–0.95 m, 1.75–1.85 m deep) was extended from the south-east to the north-west. A ledge 35 cm wide and 40–42 cm high was made at the north-western side of the pit (Fig. 4, 3.). Remains of the deceased were absent. The grave probably represents a cenotaph or a cult complex.

Inventory: Grey biconical bowl made of shell-tempered clay stood on the bottom of the pit, close to southern corner (Fig. 4, 2; 12, 24). One small handle with vertical hole is situated in the middle of the body. Dimensions of the vessel: height – 8 cm, diameter of the rim – 12.7 cm, diameter of the body – 14.5 cm, diameter of the bottom – 8 cm.

**Grave 235** (probably the Cernavodă I culture) was situated in squares P–C/II–III (area



IV) on the depth of 0.9 m (Fig. 1, 3). The rectangular pit (1.45 m 1.4×1.2 m, 1.6 m deep) was extended along the south-east – north-west line. The northern corner of the pit was damaged by the grave 234 of the Early Iron Age. The filling of the pit consisting of loam contained numerous inclusions of red ochre which close to the bottom took shape of a compact lens of bright dye. This attribute allows us to date this structure to the Eneolithic period. Remains of the deceased and inventory were absent. The grave probably represents a cenotaph or a cult complex.

**Grave 239** (the Cernavodă I culture) was uncovered in squares X-II/III-IV (area IV) on the depth of 0.9–0.95 m (Fig. 1, 3.). The burial pit of irregular rectangular shape 1.5 m deep was extended along the east-west line (Fig. 4, 5). The walls of the pit become wider to the bottom. Dimensions on the upper level 1.0×0.85 m, on the lower level – 1.12×0.87 m. A ledge with dimension 0.7×0.55 m and 0.1–0.14 m high was made at the north-western corner. Remains of the deceased in the grave were absent. The grave probably represents a cenotaph or a cult complex.

Inventory: A vessel with two vertical handles under the rim was found in the filling of the pit close to the bottom (Fig. 4, 4.). Dimensions of the vessel: height – 7.9 cm, diameter of the rim – 6.3 cm, diameter of the body – 8.2 cm, diameter of the bottom – 4 cm.

**Grave 264** (the Cernavodă I culture) was uncovered in squares AII-AE/XXIV (area IV) on the depth of 0.9 m (Fig. 1, 3). The pit of irregular rectangular shape with rounded corners (1.60×1.05 m, 1.45 m deep) was extended almost directly along the east-west line.

The deceased (adult) was buried in a crouched position on the back with the body tilted to the left. The head was turned to the east (89°). The right arm was half-bent and stretched to the pelvis whereas the left arm was stretched along the body to the knees (Fig. 4, 6). The skull lay on the clay bedding and was slightly elevated. A patch of ochre was on the back of the head. Grave goods were absent.

**Grave 283** (the Cernavodă I culture) was uncovered in squares Y-Φ/VII (area IV) on the depth of 0.8 m (Fig. 1, 3). The oval burial pit (1.65×1.0 m, 1.2–1.25 m deep) was extended along the south-east – north-west axes. A ledge 10 cm wide was in the south-eastern part

of the pit. A cavity 10 cm wide was made in the north-western wall. Additionally, a step 40×25 cm was made at the western side of the pit (Fig. 4, 7).

The deceased (adult) was placed on earthen bedding 5–7 cm thick. It lay in crouched position on the left side with the head to south-east (138°). The almost straight left arm was stretched to the legs. The right arm was bent and lay with the forearm across the body.

**Grave 286** (the Cernavodă I culture) was uncovered in squares H-O/X-IX (area IV) on the depth of 0.85 m (Fig. 1, 3). The rectangular pit with rounded corners and one end side (1.85×1.55 m, 1.25–1.3 m deep) was extended along the south-east – north-west line.

The skeleton was severely damaged by shrews. It can be established that the deceased (adult) initially lay in a crouched position on the left side with the head to the south (169°). The right arm was bent with the forearm across the body (Fig. 4, 8). Bones of the left arm were displaced from initial position. Grave goods were absent.

**Grave 293** (the Cernavodă I culture) was situated in square T/IX (area IV) (Fig. 1, 3). The rectangular pit with rounded corners (1.95–2×1.05 m, 1.1 m deep) was extended along the south east – north-west line. A ledge 30 cm wide was made at the north-western side of the pit.

The deceased (adult) lay in a crouched position on the left side with the head to the south-east (112°). The left arm was extended along the body. The right arm was bent with the forearm across the body (Fig. 4, 9; 10, 1). A patch of ochre was traced on the bottom of the pit under the upper part of the skeleton. A small lamp of burned clay lay at the left shoulder. Grave goods were absent.

**Grave 294** (the Cernavodă I culture) was uncovered in squares II-P/VII-VIII (area IV) on the depth of 1.2 m (Fig. 1, 3). The burial pit of irregular rectangular shape (1.45–1.5×0.90–1.1 m, 1.2–1.3 m deep) was extended from the south-east to the north-west.

The deceased (adult) was laid in a crouched position on the left side with the head to the south-east (138°). The right arm was bent and lay with the forearm across the body. Only the humerus preserved from the left arm which lay across the body (Fig. 5, 1; 10, 2). Grave goods were absent.

**Grave 309** (the Cernavodă I culture) was uncovered in squares II–P/VII–VIII (area IV) (Fig. 1, 3) on the depth of 1.2 m. The irregular rectangular burial pit the (1.1×0.85 m, 1.27 m deep) was extended from the south to the north. It was situated under the ditch of the Sarmathian culture.

Only three long bones preserved from the skeleton of a child so position of the deceased was not determined (Fig. 5, 3). It was probably oriented with the head to the south.

**Inventory:** A small bowl with S-like profile made of shell-tempered clay was situated on the bottom in the southern part of the pit (Fig. 5, 2). Dimensions of the vessel: height – 5.4 cm, diameter of the rim – 8.6 cm, diameter of the body – 8.5 cm, diameter of the bottom – 5.7 cm.

**Grave 318** (probably the Cernavodă I culture) was found in squares AA–AB/I (area IV) on the depth of 0.8 m (Fig. 1, 3). The burial pit of irregular rectangular shape (1.8×1.4 m, 1.5 m deep) was extended along the east-west line. A ledge 15 cm wide was made at the southern side of the pit.

The grave was severely damaged by later intrusions. Nevertheless, it could be established that the deceased (adult) was buried in a crouched position on the left side with the head to the east (90°) (Fig. 5, 4). Grave goods were absent.

**Grave 334** (the Cernavodă I culture) was uncovered in squares II–Ч/XVII–XVIII (area IV) on the depth of 0.8 m (Fig. 1, 3). The oval burial pit (1.40×1.05 m, 0.95 m deep) was extended from the east to the west.

The skeleton (adult) was disturbed by shrews and preserved in bad state. The deceased (adult) was buried in a crouched position on the back with the head to the south-east (110°). The left arm was half-bent and lay with the end of the forearm on the pelvis. Only bones of the forearm preserved from the right arm. According to their position it can be established that the arm was bent and turned with the forearm to the pelvis (Fig. 5, 5; 10, 3). Grave goods were absent.

**Grave 336** (the Cernavodă I culture) was uncovered in squares Ф–X/XVI–XVII (area IV) on the depth of 0.86 m (Fig. 1, 3). The oval burial pit (2.05×1.50 m, 1.01 m deep) was extended along the north-east – south-west line.

Two structures, a kind of thresholds, consisted of big but narrow stones were constructed on

the bottom of the pit in the eastern and western parts, across the long axes. The eastern threshold was composed from three stones whereas the western threshold consisted of one stone 70 cm long. The head of the deceased was laid on the eastern threshold whereas the legs were placed on the western one (Fig. 5, 6; 10, 4). According to arrangement of preserved bones it can be suggested that the deceased was buried in a crouched position on the left side with the head to the east (96°). The inventory was absent.

**Grave 339** (the Cernavodă I culture) was uncovered in squares O–II/XV–XVI (area IV) on the depth of 0.5 m (Fig. 1, 3). The burial pit of irregular oval shape (1.6×1.3 m, 1.05 m deep) was extended along the south-east – north-west line. A triangular ledge 20 cm high was cut out at the south-eastern side of the pit. A patch of bright red ochre was situated at the edge of the ledge (Fig. 5, 7; 10, 5). A niche was made in the northern side of the pit although it could emerge naturally because of a tree which recently grew on this place. The pit was filled with stones of different size. Bones of human legs were found immediately below the stones, and part of the human skull laid a little lower at the eastern wall.

A crashed human skull and fragmented human bones lay on the bottom of the pit. It can be suggested that the deceased was placed in a crouched position with the head to the south-east (appr. 123°). Remains of the skeleton were situated as if inside a square formed by three clay firedogs (Fig. 12, 34) and the patch of ochre on the ledge. Similar firedogs have been often encountered in the layer of the Cernavodă I culture in the settlement so they securely mark culture-chronological attribution of the grave.

**Grave 345** (the Cernavodă I culture) was situated with surrounding cromlech not far from the north-eastern corner of the area IV (Fig. 1, 3). Southern, eastern and western sections of the cromlech were completely destroyed by numerous later intrusions of 6–7 graves and 2 pits. In preserved part of the cromlech stones of different size were laid mainly flatwise in one layer on the depth of 0.8–0.85 m. External diameter of the cromlech could reach 5–6 m and its width was 0.7–0.8 m (Fig. 5, 8).

The oval pit (1.6×1.3 m, 1.2 m deep) was situated in the centre of the area outlined by the cromlech and was extended along the south-east

– north-west line. A semi-circular ledge 70 cm wide and about 40 cm high was made in the eastern part of the pit.

The deceased (adult) was buried in a crouched position on the back with the head to the south-east (116°). The legs were turned with the knees to the left. The arms were extended along the body. The skull fell down on the chest with the face downward (Fig. 6, 1; 10, 6). The skull probably lay initially on a grassy pillow. Grave goods were absent.

**Grave 367** (the Cernavodă I culture) was uncovered in squares АП–АР/XVII–XVIII (area IV) on the depth of 0.7–0.8 m (Fig. 1, 3). The entrance oval pit with a ledge along its perimeter (2.25×1.8 m, 1.2 m deep) was extended along the east-west line. The rectangular burial chamber (1.45×0.95 m, 0.3 m deep) was extended in the same direction (Fig. 6, 3). The skeleton was absent. The grave probably represents a cenotaph or a cult complex.

Inventory: A small amphora with vertical handles on the shoulders was found on the bottom of the pit at the southern wall. It is made of shell-tempered clay (Fig. 6, 2; 12, 20). Dimension of the vessel: height – 6.2 cm, diameter of the rim – 4.3 cm, diameter of the body – 6.7 cm, diameter of the bottom – 4.3 cm.

**Grave 372** (the Cernavodă I culture) was uncovered in squares АН–АО/XI (area IV) on the depth of 0.7 m (Fig. 1, 3). The almost rectangular burial pit (1.9–1.8×1.1–0.9 m, 0.85 m deep) with narrowed long sides was extended from the north-east to the south-west. The south-western side of the pit was destroyed by a later structure.

Only the skull and broken long bones preserved from the skeleton. According to their disposition it can be suggested that the deceased (adult) lay in a crouched position on the left side with the head to the east (87°). The arms were bent in the elbows and with extremities of the forearms lay in front of the face (Fig. 6, 4). Grave goods were absent.

**Grave 414** (the Cernavodă I culture) with a stone pavement was uncovered in squares АИ–АІ/VII–X (area IV) on the depth of 0.65–0.7 m (Fig. 1, 3). The pavement was situated in 2.5 m north-west from the grave and represented a stripe 0.9–1.4 m wide in the central part extended along the north-east – south-west line. It was built of big and middle stones laid mainly in

one layer. Base of the stones lay on the depth of 0.4–0.5 m that can correspond to ancient surface. A stone grinder was found among stones of the pavement.

The oval burial pit with a niche at the south-eastern side (1.95×1.85–1.55 m, 1.2 m deep) was extended along the south-east – north-west line. An accumulation of human bones was found in the filling in the centre of the pit. Bones of legs *in situ* were situated in the western part on the bottom. According to their disposition it can be suggested that the deceased (adult) was buried in a crouched position with the head to the east (Fig. 6, 5). Grave goods were absent.

**Grave 424** (the Cernavodă I culture) was uncovered in squares АГ–АД/IV (area IV) on the depth of 0.85 m (Fig. 1, 3). The trapeziform pit with rounded corners (1.5×1.1–0.95 m, 1.0–1.1 m deep) was extended from the east to the west. Only the skull of the deceased preserved in initial position on the bottom in the eastern part of the pit. It can point out eastern orientation of the deceased (Fig. 6, 7).

Inventory: Small thin-walled amphora made of shell-tempered clay with two vertical handles on the shoulders lay 7 cm south of the skull (Fig. 6, 6). Dimensions of the vessel: height – 7.8 cm, diameter of the rim – 4.8 cm, diameter of the body – 8 cm, diameter of the bottom – 2.3 cm.

**Grave 433** (the Cernavodă I culture) was uncovered in squares АІ–АМ/V–VI (area IV) on the depth of 1.05 m (Fig. 1, 3). The burial structure was of oval shape 2.45×2.1 m and was extended from the south to the north. It consisted of two parts: a wide entrance pit or a ledge and a burial chamber. The ledge (1.98×0.96 m, 1.72 m deep) was situated south of the burial chamber. The irregular oval chamber (1.95×1.4 m, 1.85–1.92 m deep from the modern surface) was extended along the south-east – north-west line.

The deceased (adult) lay in a crouched position on the back with the head to the south-east (125°). The legs were turned with the knees to the left. The left humerus lay along the body. The right arm was slightly bent and with the forearm stretched to the pelvis. The skull was displaced from initial position (Fig. 7, 1; 11, 1). An oval patch of ochre 23 cm long was in the area of the chest. Small fragments of Eneolithic and later pottery as well as bones of a deer were

encountered in the filling of the pit. A dog tooth was found among bones of the skeleton.<sup>5</sup>

**Grave 436** (the Cernavodă I culture) was uncovered in squares AB/V (area IV) on the depth of 0.7 m (Fig. 1, 3). The pit of approximately oval shape (1.75×1.3–1.2 m, 1.25 m deep) was extended along the east-west line.

The deceased (adult) lay in a crouched position on the left side with the head to the east (97°). The right arm was half-bent and with the hand brought to the pelvis. The left arm was bent and with the forearm stretched to the face (Fig. 7, 2; 11, 2). A patch of ochre was at the right hand. Grave goods were absent.

**Grave 460** (probably the Cernavodă I culture) was uncovered in squares AB–AB/ VII–VIII (area IV) on the depth of 0.8 m (Fig. 1, 3). The approximately rectangular pit with sides widened to the bottom (upper level 1.5×1.0 m, lower level 1.65×1.2 m, 1.5 m deep) was extended from the east to the west (Fig. 7, 3). A patch of ochre was on the bottom in the centre of the pit. The skeleton was absent. The grave probably represents a cenotaph or a cult complex.

**Grave 461** (the Cernavodă I culture) was uncovered in squares AB–AB/XII–XIII (area IV) on the depth of 0.8 m (Fig. 1, 3). The rectangular pit with rounded corners (2.05×1.7 m, 1.6–1.65 m deep) was extended along the south-east – north-west line. The walls were wider in the eastern part of the pit forming a niche up to 30 cm wide.

The deceased (adult) lay in a crouched position on the back with the head to the east (97°). The body was tilted to the left side. The left arm was extended along the body whereas the right hand was bent with the hand in abdominal region. The skull was slightly elevated with the crown up. It lay probably on a plant pillow (Fig. 7, 4; 11, 3). The bones were covered with ochre which forms clear border around the skeleton. Grave goods were absent.

**Grave 463** (the Cernavodă I culture) was uncovered in squares AД–AE/VIII (area IV) on the depth of 0.75 m (Fig. 1, 3). The rectangular pit (1.55×1.15 m, 1.45–1.55 m deep) was extended along the south-east north-west line. Longitudinal walls were wider to the bottom.

The deceased (adult) lay in crouched position on the left side with the head to the south-east (141°). The left arm was half-bent and with the forearm stretched to the knees. The right arm was bent and with the forearm lay on the chest. The skull was shifted from initial position and turned with the face to the right (Fig. 7, 5; 11, 4). A patch of bright red ochre was at the southern side of the pit. Grave goods were absent.

**Grave 482** (the Cernavodă I culture) was uncovered in squares AK–AJI/XV–XVI (area IV) on the depth of 0.75 m (Fig. 1, 3). The oval burial pit (1.9×1.4 m, 1.45–1.5 m deep) was extended along the north-east – south-west line. Two narrow ledges 15 cm wide and 60 cm high were made in the eastern part of the pit.

The deceased (adult) lay in a crouched position on the back with the head to the east (90°). The right arm was extended along the body. The left arm was bent and lay with the forearm across the body (Fig. 7, 6; 11, 5). Brown patches probably from a plant mat were traced on isolated parts of the bottom. Grave goods were absent.

**Grave 487** (the Cernavodă I culture) was uncovered in squares AЖ–A3/XIII–XIV (area IV) on the depth of 0.8–0.9 m (Fig. 1, 3). The rectangular burial pit with rounded corners (1.65×1.30 m, 1.85–1.9 m deep) was extended from the east to the west.

The skeleton was considerably disturbed by shrews. The skull and part of ribs were removed from initial position. According to disposition of other bones it can be established that the deceased (adult) was placed in a crouched position on the left side with the head to the east (90°). The arms were bent and with the forearms stretched forth (Fig. 8, 1; 11, 6). Dark-brown remains of a plant mat covered the bottom under the skeleton.

Inventory: A flint microlithic tool lay at the left arm (Fig. 12, 7).

**Grave 581** (the Cernavodă I culture) was uncovered in the area VI on the depth of 0.85 m (Fig. 1, 3). The nearly oval pit (1.7×1.2 m, 1.15–1.25 m deep) was extended from the east to the west. The northern side of the pit was destroyed by the entrenchment of the Russian-Turkish War 1770. The bottom of the pit was uneven.

Only a few long bones preserved from the skeleton. According to their position it can be suggested that initially the deceased lay in a

<sup>5</sup> Archaeozoological analysis was carried out by E. Sekerskaya.



crouched position on the left side with the head to the north-east. The right arm was bent and lay with the forearm across the body (Fig. 8, 2). The skeleton lay on a low eminence 3–4 cm high covered with ochre. Grave goods were absent.

**Grave 585** (the Cernavodă I culture) is found in the B area VI on the depth of 0.8 m (Fig. 1, 3). The rectangular burial pit (1.6×1.2–1 m, 1.15 m deep) was extended along the east-west line. The southern side of the pit was destroyed by a grave of the Early Iron Age.

The deceased (adult) lay in a crouched position on the left side with the head to the east (115°). The right arm was bent and with the forearm stretched forth. The left hand didn't preserve. Grave good were absent.

Two pits (16 and 17) were situated between the graves 581 and 585 (Fig. 1, 3). Unlike most of the graves the pits have smaller dimensions, although they could represent cenotaphs. The graves and the pits were arranged in one line extended along the south-east – north-west axis. All structures were on similar distance from each other and probably represented a single mortuary-ritual complex.

The pit 16 was approximately in 2 m north-west of the grave 581. It was of oval shape (1.2×0.95 m, 0.3–0.35 m deep from the level of finding) extended along the south-north line. A patch of ochre was on the bottom of the pit. The fragment of a vessel made of shell-tempered clay was found in the upper part of the filling of the pit. The basis of the neck is decorated by one horizontal row of notches (Fig. 8. 9).

The pit 17 was approximately in 2 m south-east of the grave 585 (Fig. 1, 3). It was of rectangular shape with rounded corners (1.2×0.95 m, 0.35 m deep from the finding level) and extended along the south-east line. The accumulation of ochre was found on the bottom of the pit in north-eastern part. A small tubular bead made of bone (length 0.75 cm, diameter 0.35 cm) was found in the ochre patch (Fig. 12. 19).

Isolated finds of the Cernavodă I culture were uncovered in different parts of the cemetery. They are not related to concrete burials.

Accumulation of Eneolithic sherds was uncovered in squares Φ–X/9 (area I) 2 m south-east of the grave 168. Several fragments belong to a big vessel with a high neck made of shell-tempered clay. The basis of the neck is ornamented

by one horizontal row of imprints of triangular stamp and the rim is decorated by notches (Fig. 8, 7; 12, 32).

A fragment of a painted vessel of the Cucuteni B-Tripolye C1 culture was found in square II/7, in the filling of the later pit 142 (Fig. 8, 5; 12, 33). The vessel was decorated by geometric design made by dark-brown dye.

A big fragment of a vessel of the Cernavodă I culture made of shell-tempered clay was found in squares II–Ч/II (Fig. 8, 8). A flat vertical projection was applied to the rim.

A fragment of the neck of a Cernavodă I culture vessel made of shell-tempered clay was found in square Ч/I (Fig. 8, 6). It is decorated by short corded imprints under the rim on the inner and external surfaces. Various fragments of the Cernavodă I culture pottery were also uncovered in other parts of the cemetery (Fig. 12, 29–30).

Besides pottery one big shell bead was found on the territory of the cemetery (Fig. 8, 4; 12, 8). It is of oval-flattened shape with longitudinal and transversal holes. Dimensions of the bead: length 2.2 cm, diameter 1.4×0.9 cm. According to its surface the material resembles the *Spondylus* shell and the shape corresponds rather to the Early Eneolithic. It is quite possible that the bead is related to the Gumelnița culture. The cultural layer of this period is evidenced in the base of thick cultural depositions in the habitation area nearby.

## Characteristics of burial rite

For several years of excavations 38 graves were uncovered on the territory of the cemetery which with some reserve can be assigned to the late Eneolithic. This attribution is mainly based on some distinctive traits of burial rite which find clear parallels in well dated cemeteries of this period in the North-West Pontic region. At the same time, several graves, especially in bad preservation and without inventory, could belong to other prehistoric periods, for instance to the early Eneolithic or Early Bronze Age or even later as for example grave 145 with the skeletons in a strongly crouched position on the left side (Fig. 3, 1). Such cases should be stipulated separately. Cultural attribution of the graves can be established first of all according to specific items

of their inventory which correspond to material from the cultural layer of the Cernavodă I culture in the adjacent settlement area. Graves without any inventory but with similar traits of burial rite can be apparently assigned to the same culture.

Sequence of soil layers is quite similar all over the territory of the cemetery. The upper layer c. 10–15 cm thick is represented by dark humus. Dark-grey soil up to 40–50 cm thick underlying the humus layer turns gradually into lighter loam and then into virgin yellow clay on the depth of approximately 70–80 cm from modern surface. Most of graves with their bottoms were sunken in the virgin subsoil.

Palinological analysis of samples from the settlement allows reconstructing ancient landscape and climatic conditions in the 5<sup>th</sup> and 4<sup>th</sup> millennia BC in the region of the Danube Lakes<sup>6</sup>. The period of the Gumelnița A1 culture (approximately middle of the 5<sup>th</sup> millennium BC) is related to the climatic optimum of the Holocene which is characterized by warm and wet conditions. Vegetation cover is represented by typical sporo-pollen spectrum of the steppe type with quite high level of arboreal vegetation (pine, hornbeam, white birch, elm, willow, etc.). Precisely in this period the pollen of cultivated cereals appears for the first time. In general, composition of vegetation evidence to high degree of moisture in the middle of the 5<sup>th</sup> millennium BC.

The period of the Cernavodă I culture is distinguished by worsening of climatic conditions that is related to increased aridization and fall of temperature. The pollen of such water-resistant plants as sedges, hornbeam, willow, etc. disappeared from sporo-pollen spectrum. At the same time, pollen of arboreal vegetation reaches maximal level. It is probable that open solid parts of surface which were not flooded in springtime appeared in this period. Broad-leaved formations of the forest-steppe type spread across these territories. It can be concluded that climatic conditions in the 4<sup>th</sup> millennium BC can be considered as less comfortable in comparison to the Gumelnița A1 period. Meanwhile, such conditions could be favorable enough for development of stock-breeding economy in its mobile or semi-mobile forms.

*Type of the burial site.* No surface constructions have been found above uncovered graves even in the area of stone structures around burials. In many cases distance between graves was too short in order to build large individual burial mounds. Additionally, there are no traces of mounds which could cover immediately several graves. At the same time, it can be suggested that low earth mounds marked initially position of burials but they didn't preserve to the present. Consequently, the burial site at Orlovka can be considered as a flat cemetery.

*Spatial layout of graves.* Eneolithic graves occupy quite vast territory. The maximal distance between extreme graves along the south-east – north-west axis reaches about 220 m. Within this area the graves are situated rather unevenly. Some of them are organized in small isolated groups consisting of 2–4 graves (Areas I and VI). Also, there is one part with relatively dense arrangement of numerous graves with distance of 2–4 meters between them (Area IV). Rare individual graves are also evidenced. In general, disposition of graves does not demonstrate a clear layout. Nevertheless, certain ordered arrangement can be discerned in the central part of the excavated area (Area IV). Here, several graves could be arranged in two rows stretched from the south to the north (Fig. 1, 3). It is interesting to note that graves in this area are distinguished by quite uniform traits of mortuary rite in terms of construction of burial pits, position and orientation of the deceased. A kind of a single order can be also discerned in the Area I (Fig. 1, 3) where graves were organized in two lines stretched along the south-east – north-west axis. However, graves in this plot do not show similar uniformity of burial traits. A separate plot with concentration of cenotaphs is registered in the north-west corner of the Area IV (Fig. 1, 3). Occurrence of isolated groups and plots with clear layout of graves on the territory of the cemetery can testify to existence of a general plan in distribution of the graves and probably insignificant chronological difference between some of them.

*Surface constructions.* Stone surface structures were found at three graves in the cemetery. The structure at grave 193 represented a double semicircle with maximal diameters of 7 and 8 m open to the south-east (Fig. 3, 5). The grave was situated in the centre of the semicircles.

<sup>6</sup> Брусяко 2016, 121 ff.

The structure was built of middle and small flat stones lay flatways in several layers. Two other structures represented a short arc (grave 345) and a straight pavement (grave 414) with similar principle of construction. The structure at grave 345 was severely disturbed by numerous later intrusions. Isolated stones were found around the grave so initially the structure could have circular shape like a cromlech with the grave in the centre. The area around graves 193 and 414 reveals no traces of disturbances so it can be suggested that related structures maintained their original form. The structures were built probably on the ancient surface. No traces of earth mounds were evidenced above the structures and graves.

*Burial pits.* Pits were evidenced almost in all graves. Only grave 205 was completely destroyed and remains of the deceased (two skulls) and shell-tempered sherds were found in a burial pit of the Early Iron Age. Some of Eneolithic graves were disturbed by later intrusions however their shapes can be roughly determined. About one half of graves was represented by simple pits with strait walls whereas other ones could have additional constructive details in form of ledges (11 graves) or niches (7 graves). In some graves the ledges and the niches were situated only at one or two sides of pits but sometimes they could be arranged along the whole perimeter of pits. It is quite often that burial chambers proper had in plan quite amorphous outlines whereas other chambers are distinguished by rather regular geometric shapes. The chambers can be conditionally divided in three types. The first type is represented by rectangular chambers as a rule with rounded corners. The second type includes oval chambers, and only in one grave a trapeziform chamber is evidenced. The burial chambers are distinguished by not very large dimensions. Most of them (21 graves) have area of 1.5–2.49 square meters (Fig. 13). The depth of burial pits usually varied between 1 and 1.59 m from modern surface and only three graves were more than 1.8 m deep and two graves were less than 1 m deep (Fig. 14).

*Skeletal remains.* Remains of the deceased were uncovered in 32 graves. Eight structures did not contain any human bones. Six of them were designated as graves and two as pits. It is quite probable that some structures can represent cenotaphs especially those with inventory.

Additionally, the structures designated as pits 16 and 17 are distinguished by smaller dimensions so they can be probably assigned to cult complexes combined with nearby graves into a unified assemblage. Cultural and chronological attribution of cenotaphs can be safely established according to grave goods, mostly vessels, which find parallels in material of the Cernavodă I culture from the settlement. As a rule, graves are represented by single inhumations, and only in two graves (No 204 and 205) remains of two skeletons were uncovered. Overwhelming majority of graves is related to adult individuals. Skeletons of little children were found in double grave 204 and in individual grave 309. Remains from 8 graves only were determined anthropologically. Six skeletons belong to females and two ones to males.

*Position of the deceased.* Many graves were disturbed by latter intrusions so general position of the deceased has been determined only for 27 skeletons (Fig. 15). Five skeletons lay in a crouched position on the back. Additionally, in three graves position of the arms could be traced which occupied different positions: they were stretched along the body, slightly bent with the arms on the pelvis, etc. Four deceased were buried in a crouched position on the back tilted to the right or to the left. With this posture one arm was stretched to the femurs and other was slightly bent with the hand on the pelvis. Eighteen skeletons lay in a crouched position on the left side. In majority of graves the left arm of skeletons could be stretched to the legs whereas the right arm was bent with the hand on the left elbow or two arms were bent and forearms stretched forth. Deviations from this rule were evidenced only in three graves.

*Orientation of the deceased.* Orientation was traced for 28 skeletons (Fig. 16). It can be considered as rather steady. Most of the deceased in graves were oriented with their heads to the east and the south-east between 85° and 125°. Only seven skeletons were oriented with some deviations farther to the south.

*Grave goods.* More than two third graves contained no inventory. It was found only in 12 graves. Ceramic vessels are the most frequent category of grave goods. They are found in 5 graves with skeletons and in 4 cenotaphs. Seven graves contained whole vessels and two ones had isolated sherds. As a rule, just one vessel

was placed in a grave, and only in grave 20 two vessels were uncovered. Normally, vessels were situated near the skulls of the deceased. Three morphological types of vessels have been used in burial rite. They are bowls (Fig. 12, 22.24.25), amphorae (Fig. 12, 20.21.26.18) and milk jugs (Fig. 12, 23.27). Almost all vessels were made of shell-tempered clay that is typical for the ceramic assemblage of the Cernavodă I culture in the settlement. Only one small amphora is made in technological manner of the Cucuteni-Tripolye culture (Fig. 12, 28).

Other categories of graves goods are represented by tools and ornaments. Six flint flakes were found under the head of the deceased in grave 168 (Fig. 12, 1-6) and one flint microlithic tool comes from grave 487 (Fig. 12, 7). Only one grave 204 contained a necklace consisted of bone, shell and stone beads (Fig. 12, 9-18). Additionally, a dog tooth was found in grave 433 among bones of the skeleton and several small river shells were uncovered in grave 204. Unique items of burial inventory were uncovered in grave 339. They included three clay conical fire-dogs situated around the deceased (Figs. 5, 7; 10, 5; 12, 32). Similar objects are evidenced in the settlement too.

*Other contextual traits of burial rite.* Additional attributes of burial rite of the Cernavodă I culture at Orlovka-Kartal embrace such elements as use of ochre, arrangement of bedding on the bottom of pits, use of plant pillows under the head, etc. Ochre is evidenced in 11 graves of the cemetery. It was used in different manner. In four graves it covered partially isolated bones and the skull or a skeleton completely. In 7 graves ochre was registered in form of patches on bottoms of pits or on ledges. In grave 461 the skeleton lay on layer of ochre with clear borders and was completely covered by red dye (Fig. 7, 4). Dark-brown remains of plant mats which covered bottoms of pits were uncovered in 8 graves. In graves 283 and 581 the deceased were placed on earthen eminences or beddings several centimeters high. Very interesting detail of burial rite was traced in grave 336 were the skull and the legs of the deceased were placed on long stones (Figs. 5, 6; 10, 4).

Specific attributes of burial rite, different items of grave goods and partly layout of graves evidence for existence of common and quite large cemetery of the Cernavodă I culture closely

related to neighboring settlement of the same culture at Orlovka-Kartal. This cultural and chronological attribution can be supported by obvious parallels both in the North-West Pontic region and in the Balkans.

## Discussion

The late Eneolithic cemetery at Orlovka-Kartal can be undoubtedly considered as the largest one in the area of the Cernavodă I culture studied so far.<sup>7</sup> It can be suggested that the territory of the cemetery is even larger, and new late Eneolithic graves will be found in future excavations. At least isolated graves of Bronze Age have been uncovered quite far to the east from the area of the cemetery and a presumably late Eneolithic barrow was excavated not far from the village of Orlovka.<sup>8</sup>

Small flat cemeteries of the Cernavodă I culture similar to that at Orlovka-Kartal are known in the core area of the culture, in Muntenia and Dobrudja. A cemetery consisting of four Cernavodă I graves was uncovered at Gherăseni in northern Muntenia<sup>9</sup>. The deceased were buried in oval pits in a crouched position on the left or on the right side and on the back. One grave contained two vessels of the culture in question. Several flat graves can be attributed to the Cernavodă I culture at Brăilești.<sup>10</sup> According to their traits these graves correspond well to burials from Orlovka-Kartal. Seventeen flat and kurgan graves of different chronological periods were studied in the area of the cemetery of the Hamanjia and Varna cultures at Durankulak in Dobrudja.<sup>11</sup> One of them, No 448, contained three vessels which undoubtedly belong to the Cernavodă I culture. Additionally, two or three graves more without burial inventory could be probably attributed to the same culture.<sup>12</sup>

<sup>7</sup> It has been regarded that the largest cemetery of the Cernavodă I culture was studied at Brăilești on the Lower Danube (Harțuche 2002). Nevertheless, majority of graves with skeletons supine extended position and ornaments from *Spondylus* shells can be attributed to the late Neolithic or the early Eneolithic (Manzura 1999, 115).

<sup>8</sup> Бруяко / Дзиговский 2011, 273 ff.

<sup>9</sup> Constantinescu 1994, 105 ff.

<sup>10</sup> Harțuche 2002.

<sup>11</sup> Vajsov 2002, 159 ff.

<sup>12</sup> Manzura 2005, 52.



Besides these graves some kurgan burials from Dobrudja and Muntenia can be also assigned to the Cernavodă I culture.<sup>13</sup> They are distinguished by similar traits of burial rite and inventory. It is interesting to note that graves of the Cernavodă I culture in the Balkans, except Cernavodă itself, are not found in the vicinity of settlements of this culture.

Flat cemeteries of the Cernavodă I culture are still not found in the North-West Pontic region so burial ground at Orlovka-Kartal can be considered as an exception.<sup>14</sup> Nevertheless, there are numerous barrow necropolises which are related to this culture.<sup>15</sup> For instance one such cemetery consisting of 14 barrows was studied in the vicinity of the village of Zhelty Yar at the Khadzhide Lake.<sup>16</sup> The deceased were interred in oval and rectangular pits in a moderately crouched position on the left side with eastern orientation. As a rule, the left arm was stretched to the legs and the right arm was bent and with the hand lay on the left elbow. Grave goods from the burials are represented by typical vessels of the Cernavodă I culture. According to their attributes graves from Zhelty Yar find apparent parallels in material of the cemetery at Orlovka-Kartal.

One more cemetery of the Cernavodă I culture was uncovered farther to the east at the village of Shirokoe.<sup>17</sup> It consisted of four barrows which contained one or two graves each. Skeletons lay in oval and rectangular pits in a crouched position on the back with eastern or north-eastern orientation. Grave goods included pots made of shell-tempered clay and painted vessels made in the Cucuteni-Tripolye ceramic traditions.<sup>18</sup> The painted vessels are absolutely identical to painted pottery uncovered in the layer of the Cernavodă I culture at Orlovka-Kartal.<sup>19</sup> Such pottery is actually absent in ceramic material of the

Cucuteni-Tripolye culture and it can be probably treated as local production of the Cernavodă I culture in the North-West Pontic region.

Isolated barrows or cemeteries with similar burial rite, shell-tempered Cernavodă I pottery and painted vessels are evidenced in different parts of the region including the left bank of the Dniester River, for instance the Sărăteni cemetery,<sup>20</sup> the Cimișlia cemetery,<sup>21</sup> the Kubey cemetery,<sup>22</sup> etc. In this context, stone cromlechs uncovered at Orlovka-Kartal are of special interest. Such stone constructions are frequent element of the earliest kurgan architecture in the steppe zone closely related to steppe graves with the pottery of the Cernavodă I culture. Even such a detail of burial arrangement as flat stones under the feet and the head of the deceased in grave 336 at Orlovka-Kartal find parallel in the steppe. Similar feature is evidenced for instance in grave 7, kurgan 1 at Sărăteni.<sup>23</sup>

It is necessary to note that two kinds of positions of the deceased, crouched on the left side and crouched on the back, are evidenced both at the Orlovka-Kartal and in steppe graves. Late Eneolithic steppe graves with crouched on the back skeletons have been singled out by some scholars into a separate group designated as the Katarzhino type.<sup>24</sup> However such graves do not possess any specific traits in material culture. Moreover, some of them contain material of the Cernavodă I culture, for instance in the Alkaliya cemetery.<sup>25</sup> That is why it is actually impossible to distinguish graves of the Katarzhino type from those with the Cernavodă I pottery. Co-occurrence of two types of burial position even in the same necropolis probably reflects coexistence of two population groups in the steppe zone in the first half of the 4<sup>th</sup> millennium BC. The first of them could be represented by local steppe inhabitants (crouched on the back) whereas the second one could have Balkan origin (crouched on the left side). This inference is also supported by anthropological composition of buried population which includes both the Proto-European

<sup>13</sup> Manzura 1999, 115-116.

<sup>14</sup> Perhaps some graves at Koshary at the Tiligul estuary according to their burial rite could belong to the Cernavodă I culture although their precise cultural attribution is disputable (Агульников / Редина 2007, 169 ff.). Several graves from this flat cemetery can be safely assigned to the Usatovo culture (Говедарица / Манзура 2010, 299 ff.).

<sup>15</sup> Манзура 2013, 130-132.

<sup>16</sup> Суботін / Петренко 1994, 93 ff.

<sup>17</sup> The cemetery is unpublished.

<sup>18</sup> Петренко 2013, рис. 35, 8.11.13.

<sup>19</sup> Манзура 2018, рис. 3, 1-8.11-17.

<sup>20</sup> Levițki / Manzura / Demcenco 1996.

<sup>21</sup> Popovici / Ciobanu / Agulnicov / Noroc 2016 19 ff.;

Popovici / Kaiser 2021, 270 ff.; Popovici / Ciobanu 2021.

<sup>22</sup> Суботин 2001.

<sup>23</sup> Levițki / Manzura / Demcenco 1996, 24, fig. 7, 1.

<sup>24</sup> Иванова / Петренко / Ветчинникова 2005, 110.

<sup>25</sup> Петренко 2013, рис. 35, 8.11.13.

and Mediterranean anthropological types.<sup>26</sup> Later, the same simultaneous existence of these different ritual traits survived in the Usatovo culture.<sup>27</sup> Similarly, the both anthropological types are represented in the population of this culture complemented by intermediate variants.<sup>28</sup>

These apparent parallels clearly demonstrate that the area of the culture could embrace the whole region or at list its significant part. The late Eneolithic cemetery at Orlovka-Kartal according to its burial practice completely corresponds (except kurgans) to other burial sites in the North-West Pontic steppes. Absence of burial mounds in the cemetery under consideration perhaps can be explained by its position on the edge of the settlement whereas emergence of kurgan burial tradition in the steppes was determined by specific economic and social factors.<sup>29</sup> Taking into consideration mixed character of the ceramic assemblage of the Chernavodă I culture embracing different traits it can be suggested that we are dealing with a kind of hybrid culture which inherited Balkan and steppe traditions. One more component in the genesis of the culture is represented by traditions of the Cucuteni-Tripolye culture that can be discerned both in ceramic imports and in the emergence of pottery production based on relevant technological principles.

Cultural attribution of the cemetery can be additionally confirmed by pottery from the graves. All three morphological types of vessels uncovered in the graves have direct parallels both in sites of the Chernavodă I culture in the core area and in Orlovka-Kartal itself. Actually identical bowls, amphorae and milk jugs represent integral part of ceramic collections from different settlement in Muntenia and Dobrudja.<sup>30</sup> Similarly, the same morphological types and variants of vessels are registered in the settlement at Orlovka-Kartal.<sup>31</sup> These clear parallels should remove any doubts concerning cultural attribution of the cemetery. Such attribution is also supported by results of radiocarbon analysis.

Earlier several radiocarbon dates were obtained for the layer of the Chernavodă I culture in

the settlements. Almost all of them are situated within the second quarter of the 4<sup>th</sup> millennium BC.<sup>32</sup> Seven graves in the cemetery were recently dated too.<sup>33</sup> The dates are distributed quite evenly in the borders of the first half of the same millennium. Existence of too early C<sup>14</sup> dates perhaps can be explained by fresh water effect because human bones were used as samples for radiocarbon dating. In any event, the dates additionally demonstrate quite early age of the cemetery in general comparable with cultural layer in the settlement. It means that the settlement and the cemetery constitute a united cultural complex.

## Conclusion

For a long time the territory between the Lower Danube/Prut and Dniester in the late Eneolithic has been considered as the area of a “steppe Eneolithic culture”. In end of the 80<sup>th</sup> and the beginning of the 90<sup>th</sup> of the last century late Eneolithic burial complexes in the region were attributed either to the Lower Mikhylovka culture<sup>34</sup> or to the special Khadzhide cultural type.<sup>35</sup> Discovery of the settlement and the cemetery of the Chernavodă I culture gave a possibility to reconsider cultural attribution of many archaeological sites in the North-West Pontic region. It was established that different steppe graves in the late Eneolithic according to their burial rite apparently correspond to burial traditions evidenced at Orlovka-Kartal and other burial sites of the Chernavodă I culture. Absolute dating of early steppe kurgan graves and material from Orlovka-Kartal demonstrates actually complete coincidence of values.<sup>36</sup> Moreover, various shell-tempered vessels from steppe graves with earlier unclear cultural attribution found eloquent parallels in ceramic assemblage of the settlement at Orlovka-Kartal. This similarity in burial rite and material remains indeed supports the idea that the North-West Pontic region can

<sup>32</sup> Ibid.

<sup>33</sup> Dates are not published. We are grateful very much to W. Haak for personal communication about results of radiocarbon analysis.

<sup>34</sup> Rassamakin 1994, 29 ff.; 1999, 59 ff.

<sup>35</sup> Петренко 1989, 18-20.

<sup>36</sup> Петренко / Ковалюх 2003; Иванова / Петренко / Ветчинникова 2005; Петренко / Кайзер 2011; Popovici / Kaiser 2021.

<sup>26</sup> Потехина 1991, 72-73.

<sup>27</sup> Петренко 2013; Manzura 2020, 73 ff.

<sup>28</sup> Потехина 1989, 125 ff; 1990, 56 ff.

<sup>29</sup> Манзура 2017, 107 ff.

<sup>30</sup> Manzura 2003, Fig. 5.

<sup>31</sup> Govedarica / Manzura 2015, 448 ff.

be included in the area of the Cernavodă I culture. Such suggestion permits to understand better the emergence of the Usatovo culture in the Lower Dniester region which inherited to large extent traditions of the Cernavodă I culture both in burial rite and in ceramic complex.

## Rezime

### Nekropola kulture Cernavoda I Orlovka-Kartal

U tekstu su predstavljeni nalazi iz 40 grobova nekropole Orlovka-Kartal koji pripadaju kasnoeneolitskoj kulturi Cernavoda I. Ta nekropola je deo obimnog arheološkog kompleksa Kartal koji se nalazi u blizini sela Orlovka na Donjem Dunavu (okrug Reni, oblast Odesa). Pokojnici su bili inhumirani u ovalnim i pravougaonim jamama, a polagani su u zgrčenom položaju na lijevoj strani, ili na leđima. Grobni prolozi su rijetki, obično po jedna keramička posuda. Takav ritual sahranjivanja ima jasne paralele u nekropolama kulture Cernavoda I na rumunskom donjem Dunavu, kao i u stepskim grobovima s područja sjeverozapadnog Crnog mora.

Već duže vremena je ustaljeno mišljenje da je teritorija između Donjeg Dunava i Dnjestra tokom kasnog Eneolita pripadala „stepskoj eneolitskoj kulturi“. Pri tome su odgovarajuće nekropole iz tog regiona pripisivane kulturi Donja Mihajlovka, ili kulturi tipu Hadžider. Otkriće naselja i grobova kulture Cernavoda I u rumunskom dijelu donjeg Dunava dalo je mogućnost da se preispita kulturna pripadnost mnogih arheoloških nalazišta na prostoru severozapadnog Crnog mora. Pokazalo se da kulturno različito opredijeljeni stepski grobovi prema obredu sahranjivanja u potpunosti odgovaraju funerarnoj tradiciji kulture Cernavoda I. Značaj nekropole Orlovka-Kartal je u tome što ona, s obzirom na centralni položaj tog nalazišta, u punoj mjeri povezuje balkanski i stepski dio ove kulturne zajednice. Na to ukazuje podudarnost u apsolutnom datiranju, u obredu sahranjivanja i u karakteru grobnih priloga. Iz tog razloga se region sjeverozapadnog Crnog mora u cjelini može pripisati kulturi Cernavoda I. Takvo opredjeljenje omogućava da se bolje razumije pojava naredne, Usatovske kulture u regionu Donjeg Dnjestera. Naime, ta kultura je u obredu sahranjivanja i u materijalnoj produkciji, u velikoj mjeri naslijedila tradiciju kulture Cernavoda I.

## Bibliography

- Bruyako, I. / Manzura, I. / Subbotin, L.* 2005, Prehistoric Settlement “Kartal” (Orlovka): Preliminary Information on the Excavations in 2001–2002, in: Nikolova, L. / Fritz, J. / Higgins, J. (eds.) Prehistoric Archaeology & Theoretical Anthropology and Education, Reports of Prehistoric Research Projects 6–7, 13–33.
- Constantinescu, E.-M.* 1994, Rezultatele ale cercetărilor arheologice de la Gherăseni-Grindul Cremenea în campania 1992, *Mousaios* 4, 105–115.
- Govedarica, B. / Manzura, I.* 2015, The Cooper Age Settlement of Kartal in Orlovka (Southwest Ukraine), in: Hansen, S. / Raczky, P. / Anders, A. / Reingruber, A. (eds.) Neolithic and Copper Age between the Carpathian Basin and the Aegean Sea. Chronologies and Technologies from the 6<sup>th</sup> to the 4<sup>th</sup> Millennium BCE, International Workshop Budapest 2012, *Archäologie in Eurasien* 31, Bonn 2015, 437–456.
- Harțușche, N.* 2002, Complexul arheologic Brăilești, *Bibliotheca thracologica* XXXV, București 2002.
- Levițki, O. / Manzura, I. / Demcenco, T.* 1996, Necropola tumulară de la Sărăteni, *Bibliotheca Thracologica* XVII, București 1996.
- Manzura, I.* 1999, Cernavoda I culture, in: Nikolova, L., The Balkans in Later Prehistory, Chapter 7, BAR International Series 791, 93–174.
- Manzura, I.* 2003, Innovations in the Ceramic Style and the Bronze Age Genesis in the Northeast Balkans, in: Nikolova, L. (ed.) Early Symbolic Systems for Communication in Southeast Europe, Vol. 1, BAR International Series 1139, 313–335.
- Manzura, I.* 2005, The Proto-Bronze Age Cemetery at Durankulak: A Look from the East, in: Nikolova, L. / Fritz, J. / Higgins, J. (eds.) Prehistoric Archaeology & Theoretical Anthropology and Education, Reports of Prehistoric Research Projects 6–7, 51–55.
- Manzura, I.* 2020, History Carved by the Dagger: the Society of the Usatovo Culture in the 4<sup>th</sup> Millennium BC, in: Hansen, S. (ed.) Repräsentationen der Macht, Beiträge des Festkolloquiums zu Ehren des 65. Geburtstags von Blagoje Govedarica, Wiesbaden 2020, 73–97.
- Popovici, S. / Ciobanu, I. / Agulnicov, S. / Noroc, I.* 2016, Tumulul 8 de la Cimișlia. Considerații preliminare, *Arheologia preventivă în Republica Moldova* III, 19–28.
- Popovici, S. / Kaiser, E.* 2021, A burial mound in the town of Cimișlia in the southern part of the Republic of Moldova: relative and absolute chronology of the burials, *Археологія і давня історія України* 2 (39), 270–279.

- Popovici, S. / Ciobanu, I. 2021, Cercetări arheologice la Cimișlia (1969, 2015, 2019), Chișinău 2021.
- Rassamakin, Y. Y. 1994, The main directions of the development of early pastoral societies of Northern Pontic zone: 4500–2450 BC (Pre-yamnaya cultures and Yamnaya culture), *Baltic-Pontic Studies* 2, 29–70.
- Rassamakin, Yu. 1999, The Eneolithic of the Black Sea Steppe: Dynamics of Cultural and Economic Development 4500–2300 BC, in: Levine, M. / Rassamakin, Yu. / Kislenko, A. / Tatarintseva, N., Late prehistoric exploitation of the Eurasian steppe, Cambridge 1999, 59–182.
- Vajsov, I. 2002, Das Grab 982 und die Protobronzezeit in Bulgarien, in: Todorova, H. (ed.), *Durankulak, Band II, Die prähistorischen Gräberfelder*, Sofia 2002, 159–176.
- Агульников, С. М. / Редина, Е. Ф. 2007, Могильник «Змеиная балка» у села Кошары, Одесской области, *Tyragetia (S.N.)* 1 (XVII), 169–180.
- Бруяко, И. В. 2016, Природный ландшафт поселения Картал в эпоху энеолита, in: Церна, С. / Говедарица, Б. (ред.) *Культурные взаимодействия. Динамика и смыслы*, Сборник статей в честь 60-летия И. В. Манзуры, Кишинев 2016, 121–131.
- Бруяко, И. В. / Манзура, И. В. / Субботин, Л. В. / Топал, Д. А. 2005, Слои раннего железного века городища Картал (участок Картал-«посад»), *Археологічні дослідження в Україні 2003–2004 рр.*, Київ 2005, 5–9.
- Бруяко, И. В. / Субботин, А. В. / Субботин, Л. В. 2005, Открытие могильника эпохи среднего гальштата на территории городища Картал в 2004 г, *Археологічні дослідження в Україні 2003–2004 рр.*, Київ 2005, 70–73.
- Бруяко, И. В. / Манзура, И. В. / Субботин, Л. В. 2006, Раскопки городища Картал в 2005 г., открытие могильника эпохи палеометалла, *Археологічні дослідження в Україні 2004–2005 рр.*, Київ-Запоріжжя 2006, 78–80.
- Бруяко, И. В. / Засыпкина, Г. В. / Манзура, И. В. / Субботин Л. В. 2009, Слои римского времени городища Картал (участок Картал-«посад»), *Stratum plus* 4, 339–364.
- Бруяко, И. В. / Дзиговский, А. Н. 2011, Раскопки кургана в окрестностях городища Картал, *Stratum plus* 2, 273–278.
- Говедарица, Б. / Манзура, И. В. 2010, Новые материалы раннего бронзового века на Тилигульском лимане, *Stratum plus* 2, 299–308.
- Иванова, С. / Петренко, В. / Ветчинникова, Н. 2005, Курганы древних скотоводов междуречья Южного Буга и Днестра, Одесса 2005.
- Манзура, И. В. 2013, Культуры степного энеолита, in: Бруяко, И. В. / Самойлова, Т. Л. (ред.) *Древние культуры Северо-Западного Причерноморья*, Одесса 2013, 115–153.
- Манзура, И. В. 2017, Восточная Европа на заре курганный традиции, in: Вишняцкий, Л. Б. (отв. ред.) *Ex Ungue Leonem*, Сборник статей к 90-летию Льва Самуиловича Клейна, Санкт-Петербург 2017, 107–129.
- Манзура, И. В. 2018, Расписная керамика позднего энеолита на поселении Орловка-Картал на Нижнем Дунае, in: Синика, В. С. / Рабинович, Р. А. (ред.) *Древности, исследования, проблемы*, Сборник статей в честь 70-летия Н. П. Тельнова, Кишинев-Тирасполь 2018, 35–48.
- Петренко, В. Г. 1989, Памятники энеолита и поворот эпохи к бронзовому веку в Северо-Западном Причерноморье, in: *История и археология Нижнего Подунавья*, Рени 1989, 18–20.
- Петренко, В. Г. 2013, Усатовская культура, in: Бруяко, И. В. / Самойлова, Т. Л. (ред.) *Древние культуры Северо-Западного Причерноморья*, Одесса 2013, 163–210.
- Петренко, В. Г. / Ковалюх, Н. Н. 2003, Новые данные по радиоуглеродной хронологии энеолита Северо-Западного Причерноморья, in: Корвін-Піотровський, О. Г. / Круц, О. В. / Рижов, С. М. (ред.) *Трипільські поселення-гіганти*, Матеріали міжнародної конференції, Київ 2003, 102–110.
- Петренко, В. Г. / Кайзер, Э. 2011, Комплексный памятник Маяки: новые изотопные даты и некоторые вопросы хронологии наличных культур, *Материалы по археологии Северного Причерноморья* 12, 31–61.
- Потехина, И. Д. 1989, Антропологические материалы из могильника Маяки, in: Патокова, Э. Ф. / Петренко, В. Г. / Бурдо, Н. Б. / Полищук, Л. Ю., *Памятники трипольской культуры в Северо-Западном Причерноморье*, Киев 1989, 125–130.
- Потехина, И. Д. 1990, Населення усатівської культури за даними антропології, *Археологія* 2, 56–67.
- Потехина, И. Д. 1991, Новые материалы к антропологии раннего медного века Украины и Молдавии, in: Яровой Е. В. (ред.), *Древнейшие общности земледельцев и скотоводов Северного Причерноморья (V тыс. до н. э. – V в. н. э.)*, Кишинев 1991, 72–73.
- Субботин, Л. В. 2001, Энеолитическое святилище курганного могильника Кубей, *Старожитності Степового Причорномор'я і Криму IX, Запоріжжя* 2001, 160–167.
- Суботін, Л. В. / Петренко, В. Г. 1994, Курганный могильник усатівського типу Жовтий Яр, *Археологія* 1, 93–104.



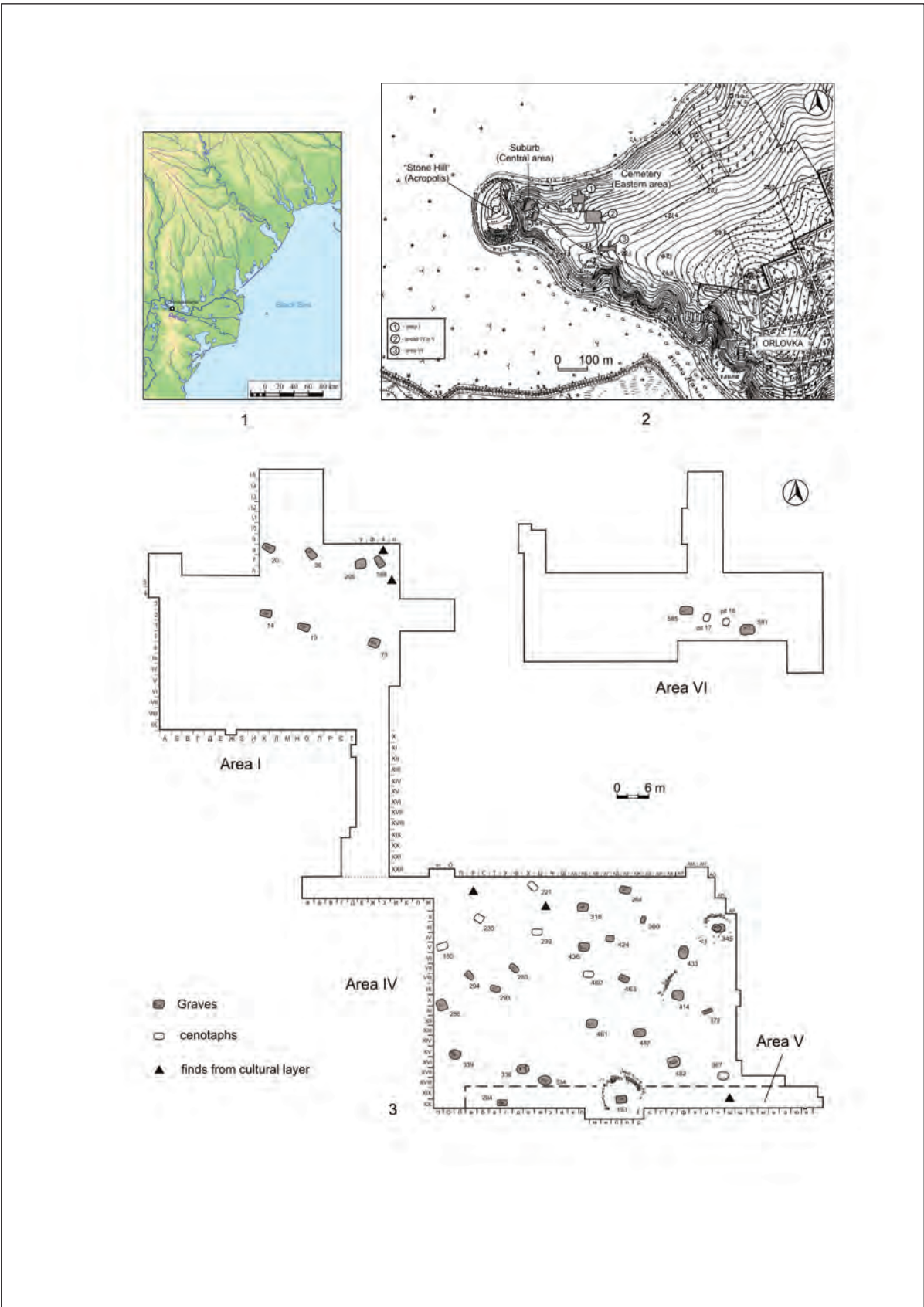


Fig. 1. Location of the site of Orlovka-Kartal in the North-West Pontic region (1); plan of archaeological complex (2); general plan of the cemetery of the Cernavodă I culture (3).

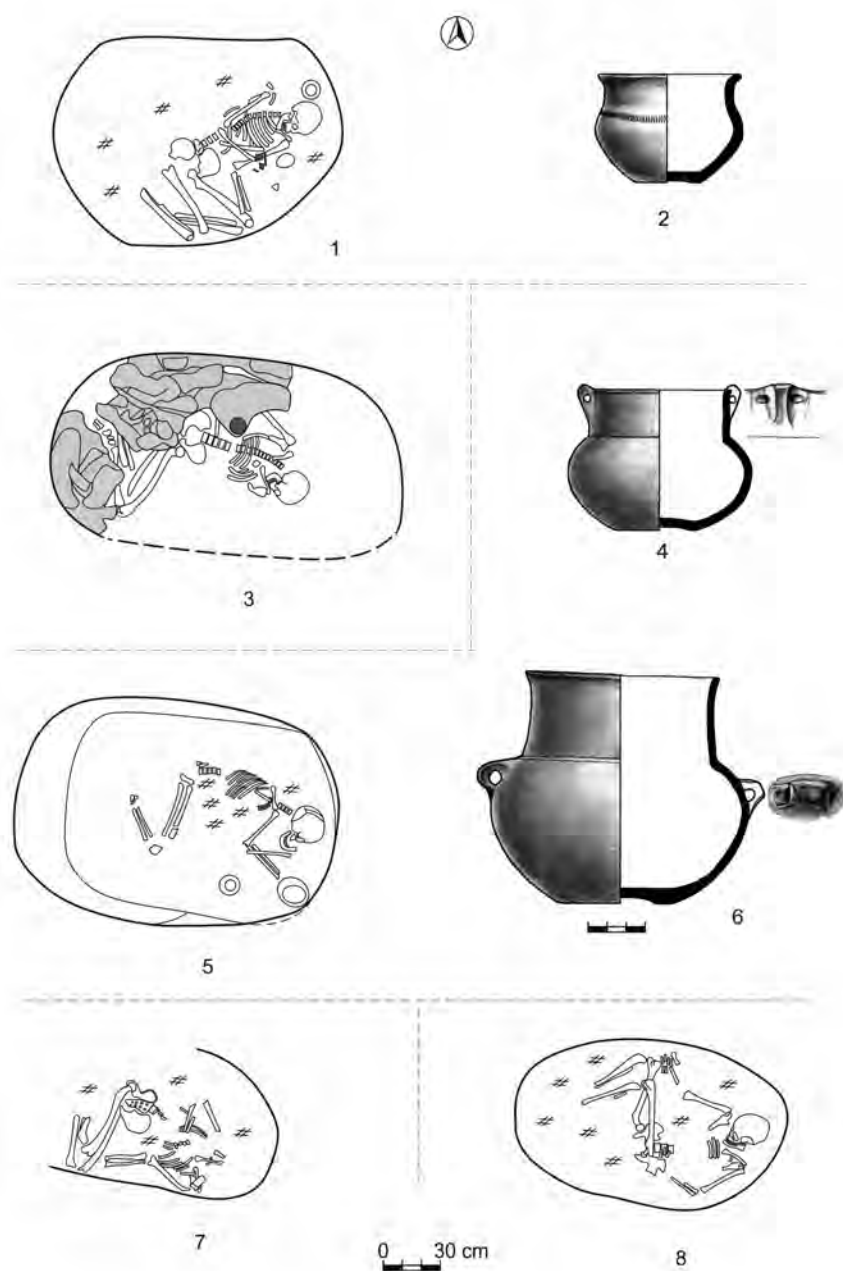


Fig. 2. Plans of graves and inventory: 1-2 – grave 10; 3 – grave 14; 4-6 – grave 20;  
7 – grave 36; 8 – grave 73.

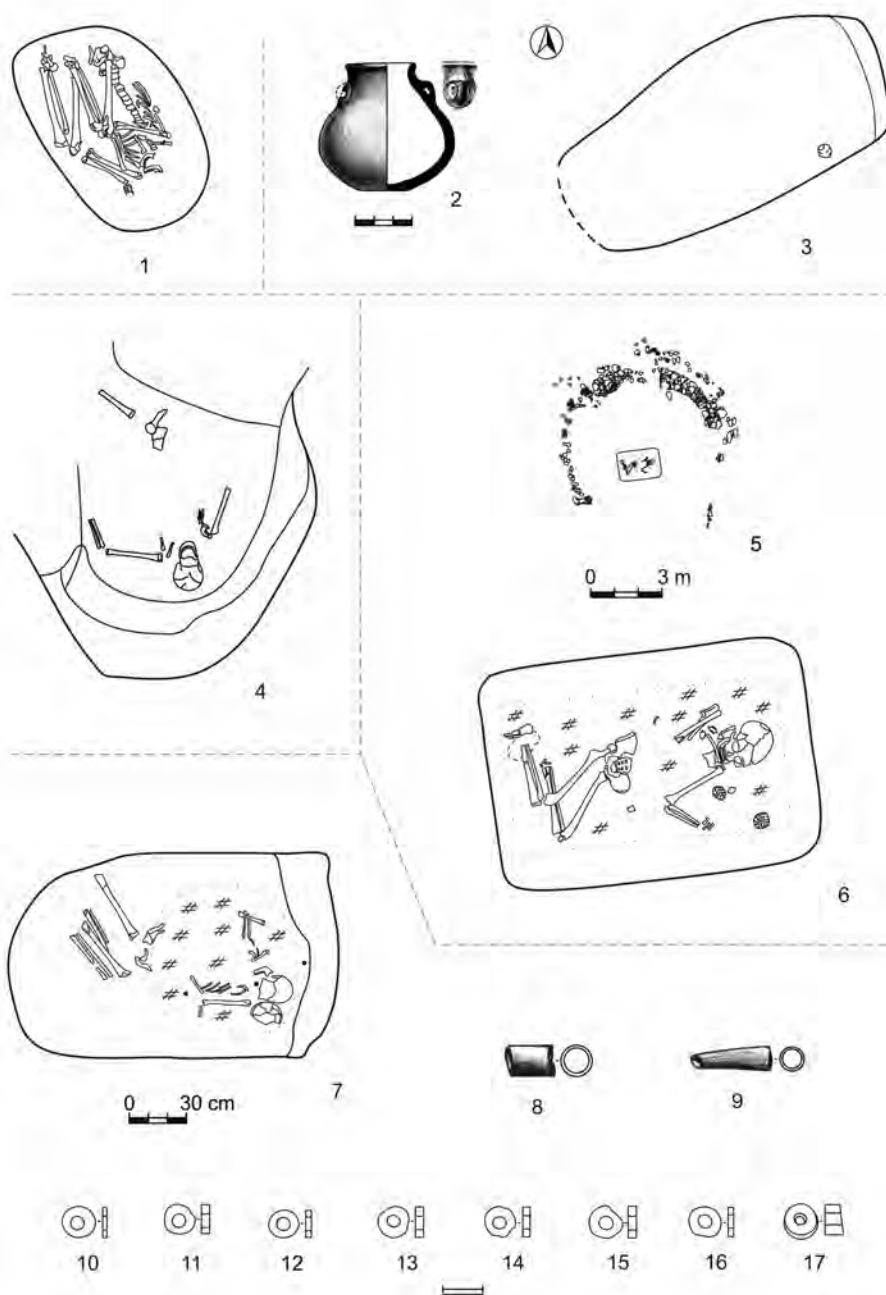


Fig. 3. Plans of graves and inventory: 1 – grave 145; 2-3 – grave 160; 4 – grave 168; 5-6 – grave 193; 7-17 – grave 204.

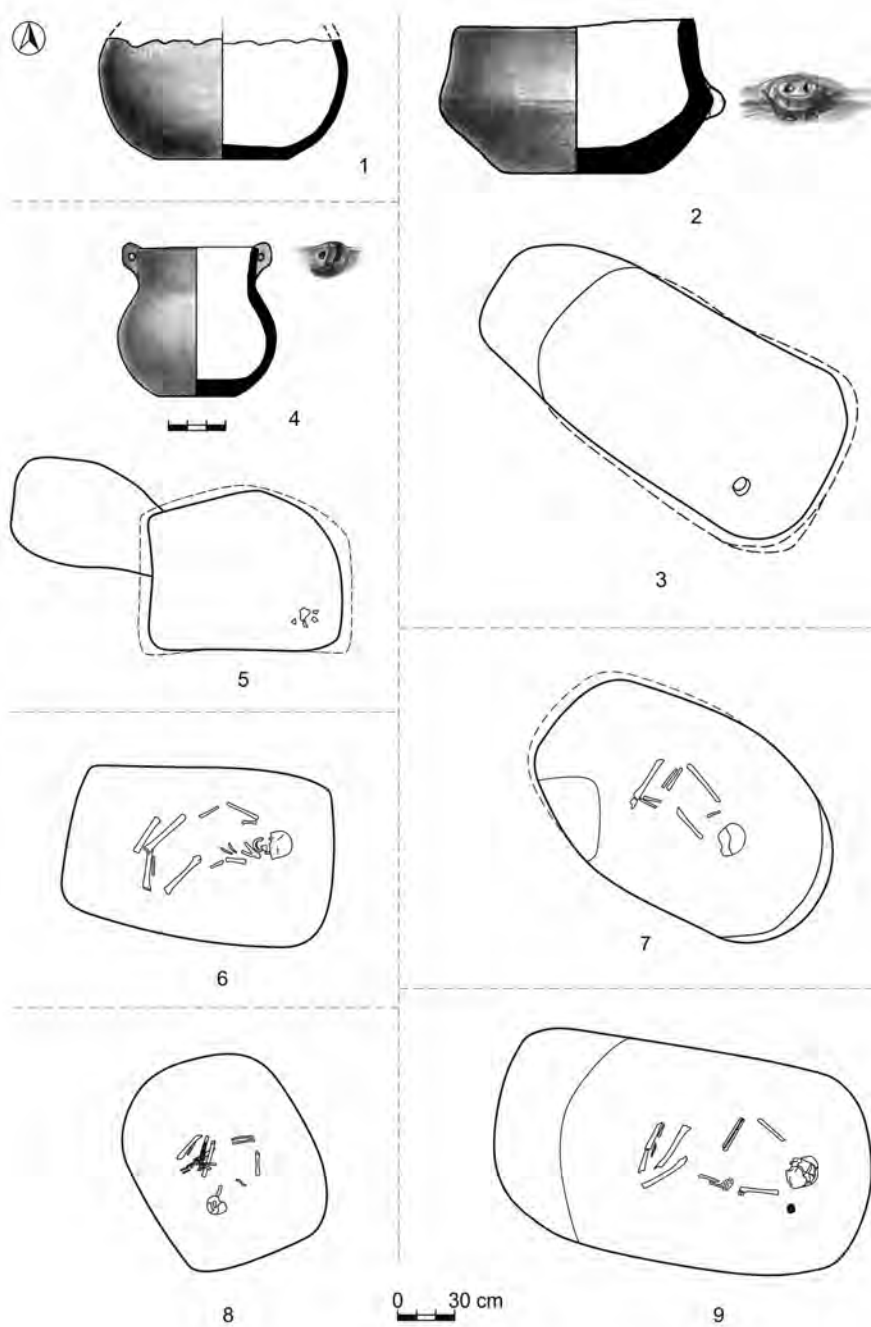


Fig. 4. Plans of graves and inventory: 1 – grave 205; 2-3 – grave 221; 4-5 – grave 239; 6 – grave 264; 7 – grave 283; 8 – grave 286; 9 – grave 293.



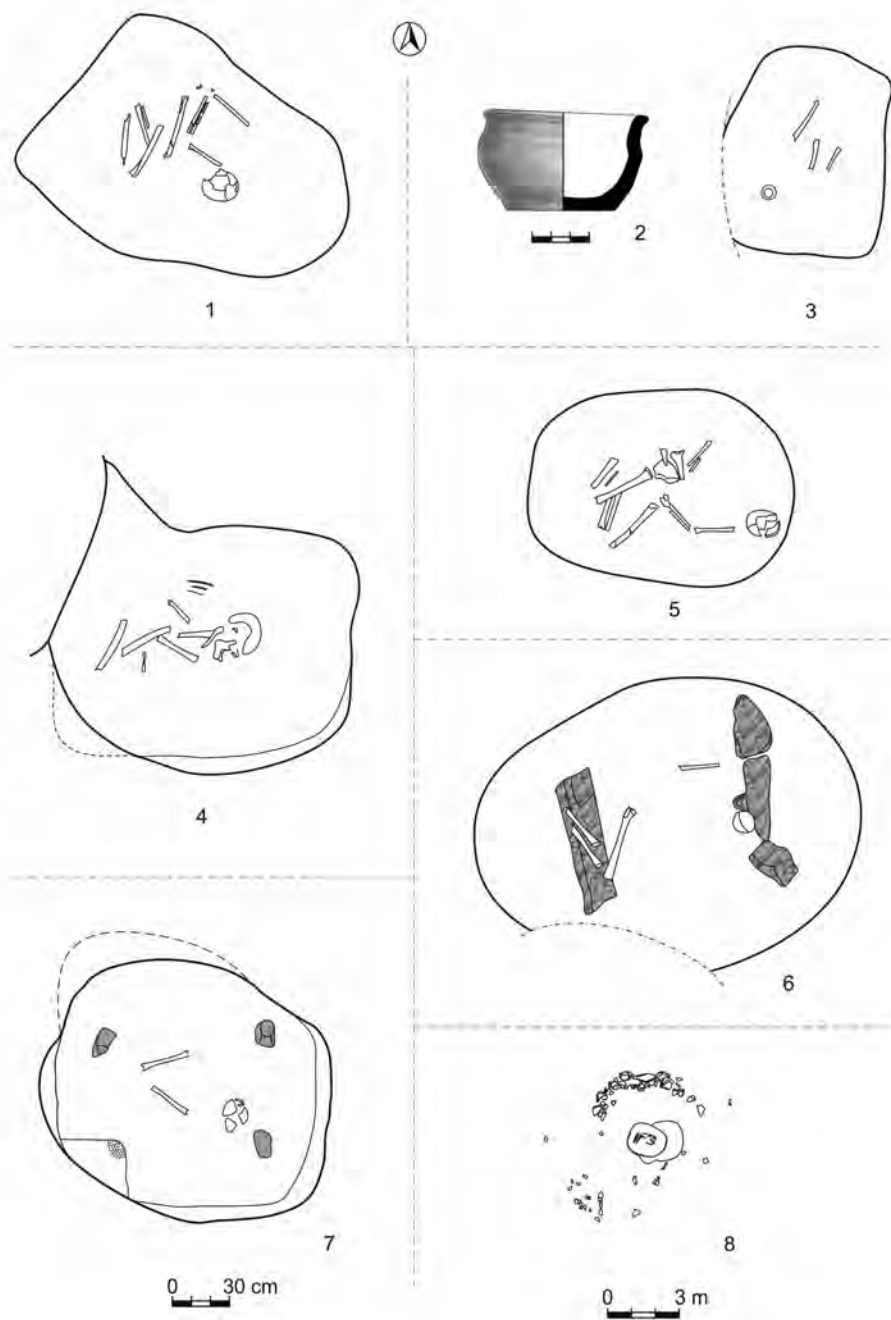


Fig. 5. Plans of graves and inventory: 1 – grave 294; 2-3 – grave 309; 4 – grave 318; 5 – grave 334; 6 – grave 336; 7 – grave 339; 8 – grave 345.

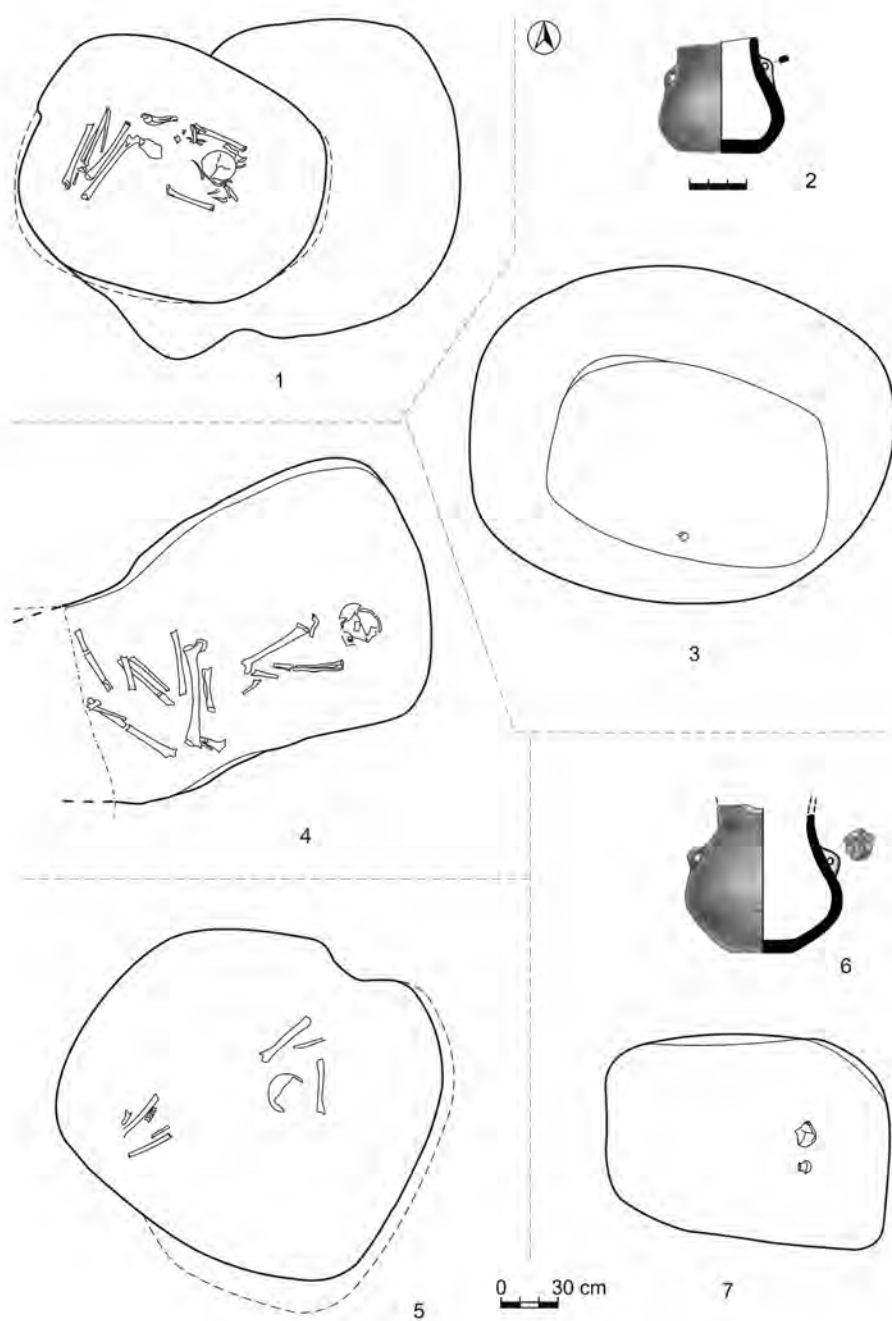


Fig. 6. Plans of graves and inventory: 1 – grave 345; 2,3 – grave 367; 4 – grave 372;  
5 – grave 414; 6,7 – grave 424.

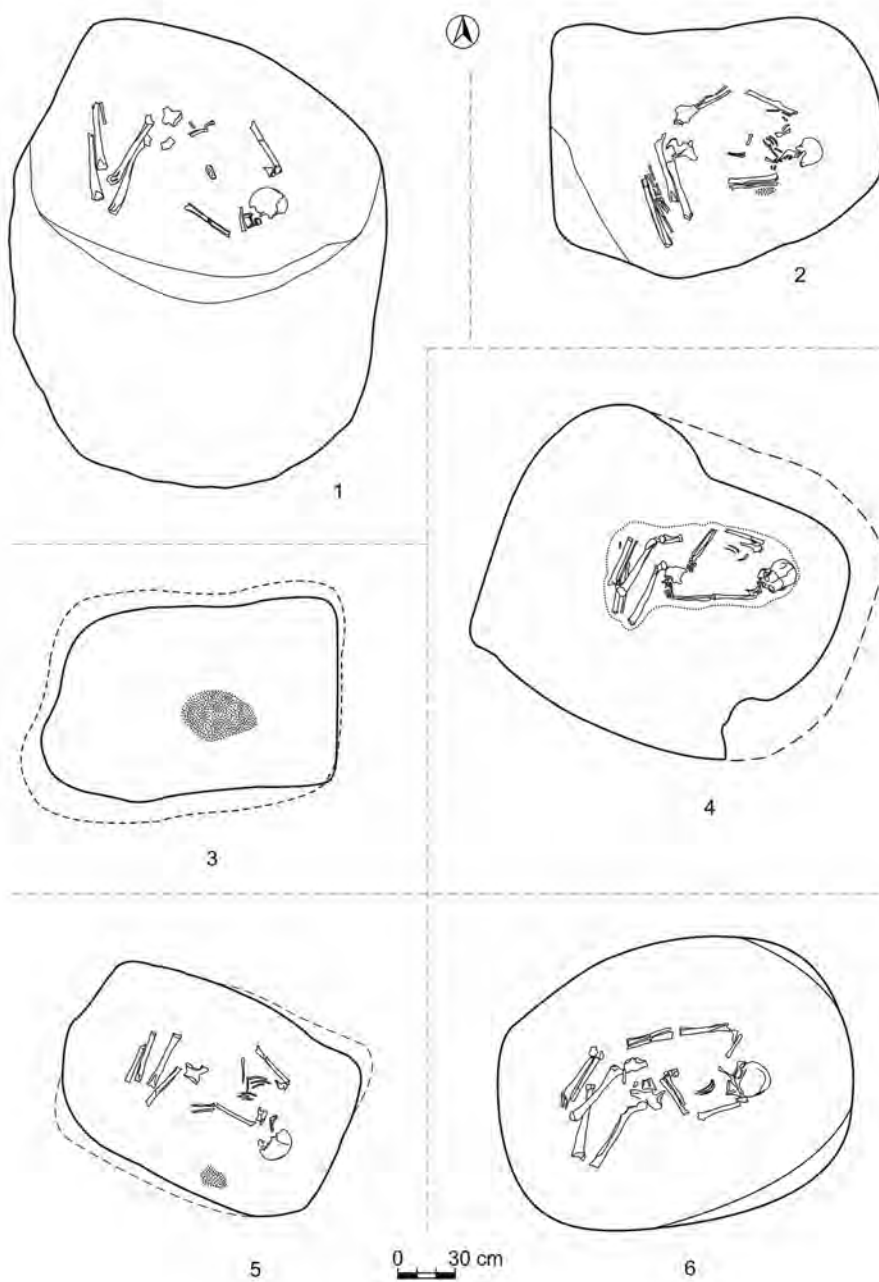


Fig. 7. Plans of graves: 1 – grave 433; 2 – grave 436; 3 – grave 460; 4 – grave 461;  
5 – grave 463; 6 – grave 482.

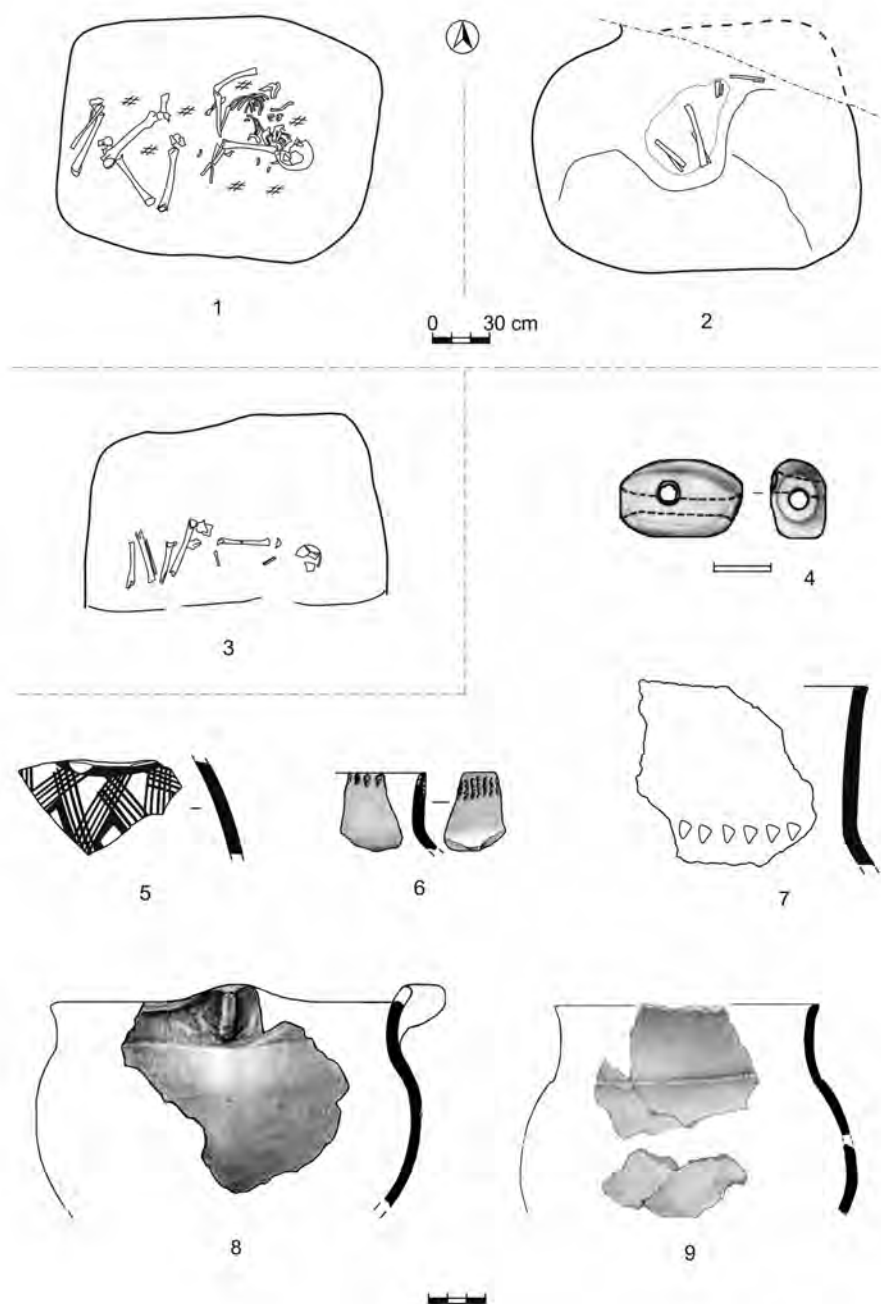


Fig. 8. Plans of graves and finds from the area of the cemetery: 1 – grave 487; 2 – grave 581; 3 – grave 585; 4-8 – finds from the area of the cemetery; 9 – vessel from pit 16.

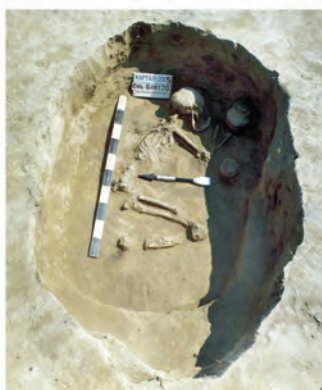




1



2



3



4



5



6

Fig. 9. Photographs of graves: 1 – grave 10; 2 – grave 14; 3 – grave 20; 4 – grave 73; 5 – grave 193; 6 – grave 204.



1



2



3



4



5



6

Fig. 10. Photographs of graves: 1 – grave 293; 2 – grave 294; 3 – grave 334; 4 – grave 336; 5 – grave 339; 6 – grave 345.



1



2



3



4



5



6

Fig. 11. Photographs of graves: 1 – grave 433; 2 – grave 436; 3 – grave 461; 4 – grave 463; 5 – grave 482; 6 – grave 487.





Fig. 12. Grave goods (1-7.9-18.20-29.32) and finds from the area of the cemetery (8.19.30.31): 1-6 – flint flakes from grave 168; 7 – flint tool from grave 487; 8 – shell bead from the area of the cemetery; 9-18 – shell, bone and stone beads from grave 204; 19 – bone bead from pit 17; 20 – amphora from grave 367; 21 – amphora from grave 424; 22 – bowl from grave 10; 23 – milk jug from grave 239; 24 – bowl from grave 221; 25 – bowl from grave 309; 26-27 – amphora and milk jug from grave 20; 28 – amphora from grave 160; 29 – vessel from grave 205; 30-31 – ceramic sherds from the area of the cemetery; 32 – clay firedog from grave 339.



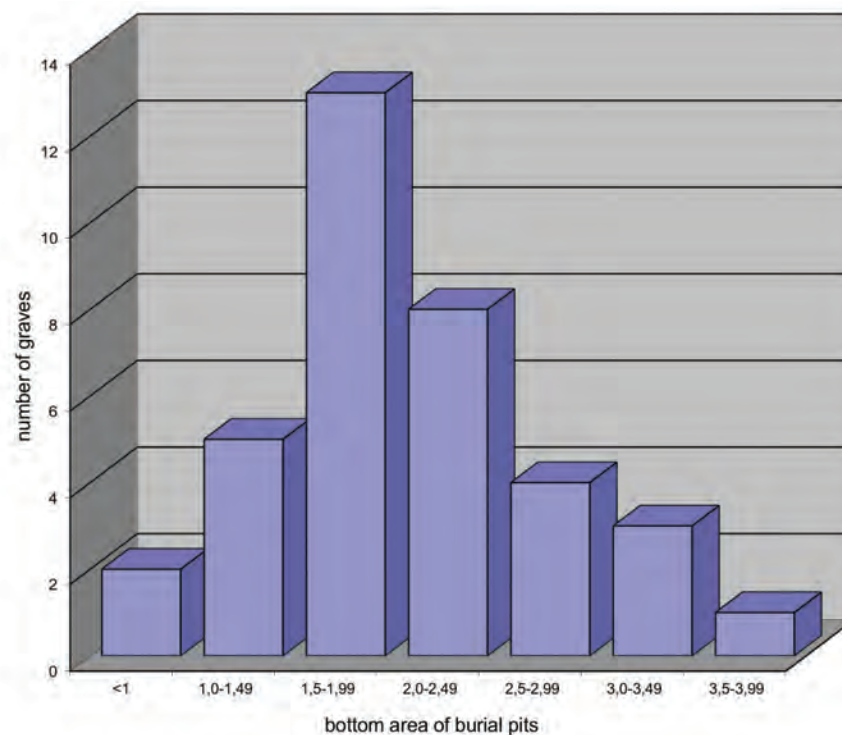


Fig. 13. *Square of burial pits of the Cernavodă I culture.*

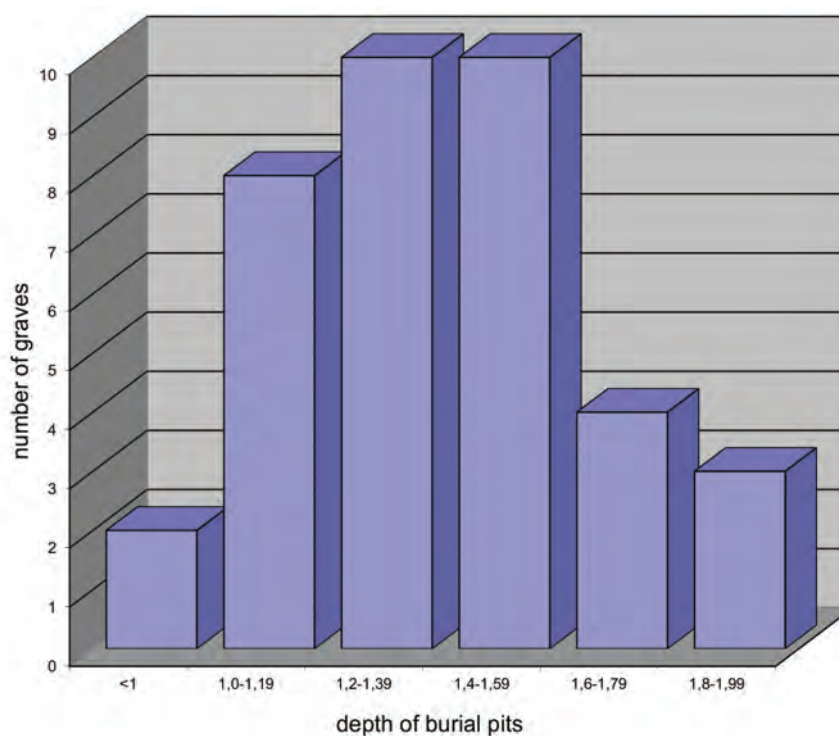


Fig. 14. *Depth of burial pits of the Cernavodă I culture.*










| position              | crouched on the back |   |   | crouched on the back with the body tilted to one side                             |              |   | crouched on the left side   |              |  |   |   |   |
|-----------------------|----------------------|---|---|---|--------------|---|---|--------------|--|---|---|---|
| variant of position   | undetermined         |  |  |  | undetermined |  |  | undetermined |  |  |  |  |
| number of individuals | 2                    | 1   | 1   | 1   | 1            | 2   | 1   | 8            | 4  | 3   | 1   | 2   |

Fig. 15. Positions of skeletons in graves of the Cernavodă I culture.

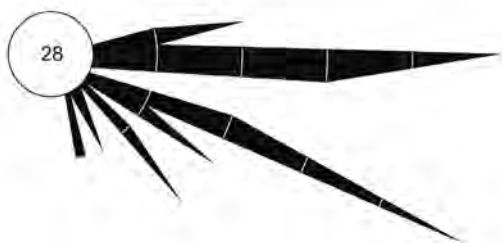


Fig. 16. Orientation of skeletons in graves of the Cernavodă I culture.