

The settlements of the Kryvina peat bog region in the context of cultural changes of the 5th – 2nd millennium BC

Maxim Charniauski¹

Kryvina peat bog is a micro-region with archaeological settlements of 5th–2nd millennium BC, located on the border of Beshankovichy and Sianno districts, Viciebsk region, in the southern part of the Belarusian Lakeland (Figure 1). It occupies a center of a large bog massif that was reclaimed and covered by a network of canals in the early-1930s–1960s. Peat extraction was held here during the 1960s–1980s. The total area of the Kryvina

1 – Department of Archaeology of Prehistoric Society, Institute of History of National Academy of Sciences of Belarus, Minsk, Belarus

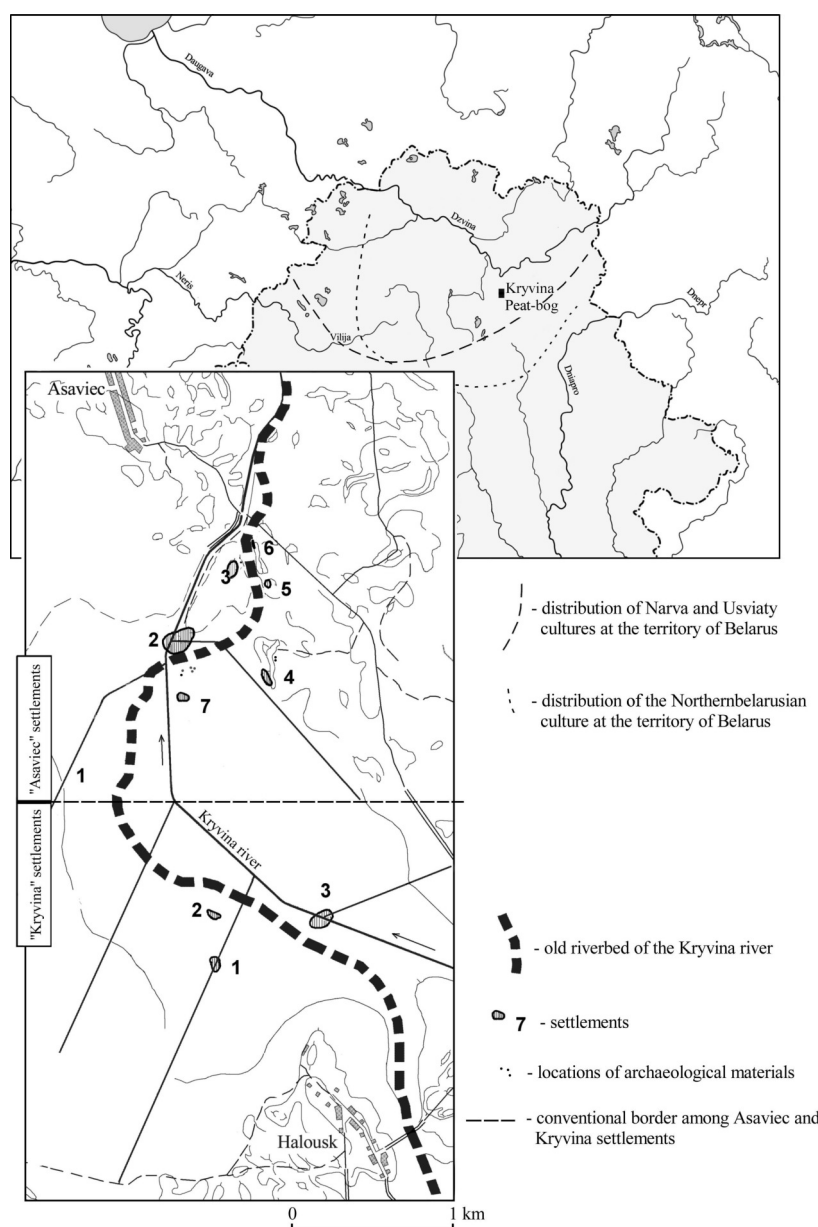


Figure 1: Localisation of the Kryvina peat bog and its settlements.

peat bog is about 8 km². It is drained by the Kryvina River, a left tributary of the Dzvina (Daugava) River, which flows into the Baltic Sea.

The first archaeological site in the territory of the Kryvina peat bog was recorded in 1934 by Kanstancin Palikarpovich and Zmicier Kavaleńia (Чарняўскі 2006, p. 16). It was the Kryvina 1 settlement. From 1966 to 2012, Michal Charniauski was the main researcher of the region. The author joined his research in 2000 and has been working there until present.

There are ten settlements at the Kryvina peat bog known today, namely Asaviec 1–7 in its northern part, and Kryvina 1–3 in the southern part (Figure 1). There are also six other locations of archaeological material known here. Nine settlements retain organic materials in the cultural layer (except the Asaviec 6), eight of which are covered by the peat (except the Asaviec 4). Asaviec 4 and Asaviec 6 settlements were badly damaged by outcrop mines in the 1970s. The location of the Asaviec 1 settlement was lost after a peat fire in 1939 (Чарняўскі 2006, p. 16).

Kryvina paleolake and its surroundings were a complicated ecosystem with different landscapes and soils, rich flora, and fauna (Симакова 2000). Lower levels of the surrounding landscape were formed by sedimentary lacustrine sands, while upper levels were formed by sandy-gravel and clay hills. A large part of the paleolake was swamped and became peaty. Alder, birch, and scrubby pine brushwoods were typical for these areas. It was a rich territory with various berries, including raspberry, cranberry, red bilberry, blackberry, etc. Birch and pine woods were also typical for sandy and sandy-gravel areas. Clay-loam and clay soils were covered by fir forests. Various fauna species occupied different landscapes, including elks in dark spruce groves, deers, and roe deers in pine forests, wild boars in broadleaved and mingled woodlands, beavers in the river and lake creeks, etc. (Разлуцкая 2010). There were different waterfowls on the surface of the river and the lake, as well as different fishes. Species of the fishes varied in accordance with the lake development. In the early Neolithic, the lake was sufficiently deep to provide comfortable conditions for catfish, whose bones dominate the ichthyological materials of the Asaviec 4 settlement (Narva culture). Late Neolithic and Bronze Age regressions activated processes of growing over of the lake. The shallow areas that were formed became ideal places for pike and perch, whose bones dominate in materials of Usviaty and Northernbelarusian cultures (Ляшкевіч 2010, pp. 292–93).

According to palynology, human presence in the Kryvina peat bog region since 6500 BP is recorded (Симакова 2000, p. 52). K. Palikarpovich mentioned the location of flint artefacts without pottery at the southern main shore of the peat bog (not researched), which could be linked with the Mesolithic. There is information about the same location of flint materials found in the northern valley wall of the peat bog, which might belong to Kunda culture (Чернявский 2003, p. 94).

Kryvina Peat bog during the 5th–4nd millennium BC

Asaviec 4 site is the most ancient settlement excavated in the Kryvina peat bog. Its material almost entirely belongs to the Early Neolithic Narva culture (Чернявский 2003, p. 94). The settlement is located 2 km south-east to the village Asaviec on a gravel hill. During Neolithic time, there was an

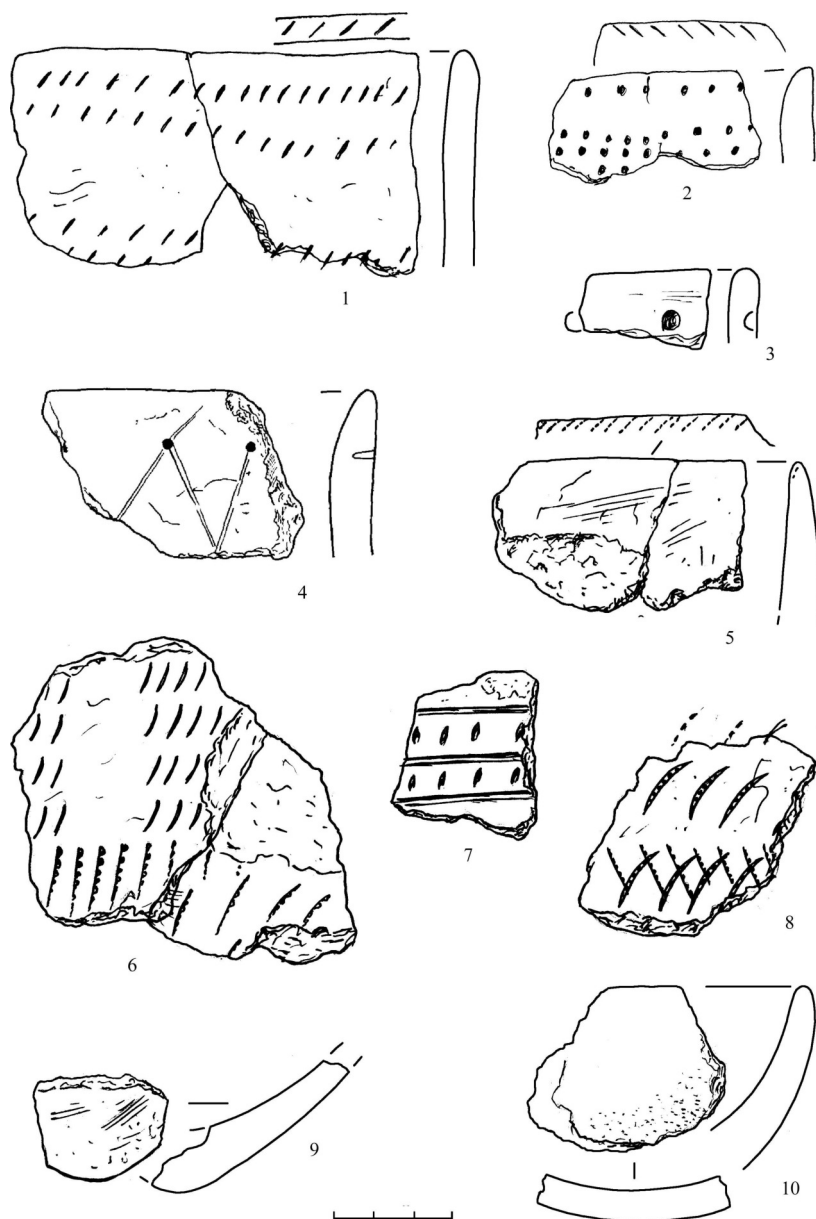


Figure 2: Asaviec 4 settlement. Pottery of the Narva culture. 1-9 - fragments; 10 fragment of bowl. From the materials of Michal Charniauski.

island where this site was founded. It was recorded in 1972 and investigated by Michal Charniauski between 1977 and 2004. Due to the presence of gravel and calcareous ground in the cultural layer, some organic materials were preserved. Furthermore, pottery, flint, and bone artefacts were found at the settlement (Чернявский 2012, p. 88).

Pottery of the Narva culture is represented by fragments of wide opened pots with convex sides, sharp-blunt bottoms, and straight, slightly bent inwards, or slightly curved rims. Their edges are thickened or rounded. There are also fragments of bowls, including oval forms. Fibrous organic remains, fine organics, and crushed shells were used as temper material. The vessels were formed from coils that were mainly joined to one another by 'U'-type connection. The off-set pinching was also used, albeit quite seldom. The outer and inner surfaces of vessels were covered by scratches left by a comb stamp. Ornamentation concentrates in the up-

per parts of the vessels and on the rims (Figure 2). The edges of the rims are not usually decorated. The inner part of the edge and inner surface of the pots are slightly more frequently decorated. About 20 per cent of the pots were decorated by a line of deep round pits or pin impressions under the rim.

Almost half of the ornamented rims are decorated with a variety of pinholes. There are also long and short notches, and comb prints. In some cases, there are combinations of grooves with cuttings, notches, and pits. A small group of rims do not have ornamentation at all.

Walls of the vessels are decorated with various pinholes and pits, thin and slightly curved comb prints, notches, and incised lines. Deviate pins made by sticks and different kinds of pits are rarer. Specific combinations of elements include prints of bidental stamp and slightly recessed pits, notches and vertical zones of small pins, crossed comb impressions, and pins made by broken stick, oblique pinholes and prints of slightly inclined stick, comb prints, and deep pinholes, pinholes and incised lines.

The described elements are usually organised within horizontal zones. Less common are vertical, oblique or criss-crossed motifs. More than half of the ceramic fragments from the Asaviec 4 settlement are not decorated.

Flint artefacts are not numerous (Figure 3: 1–8). There are three leaf-shaped arrowheads, made from fairly regular blades. They have shafts formed by dorsal abrupt retouch and clear wedge-shaped points. Their morphology is very close to the arrowheads of the Mesolithic Kunda culture. Spear heads are leaf-shaped and bifacial. Most of the scrapers are end-type items formed on regular blades. Some tools are formed on shorter blades, flakes, and chunks. Burins are represented by singular angular items on flakes. Other flint tools include rare perforators and scrolls, cutting tools on regular blades with flat retouch. Several flakes have a small edge retouch and could be used for cutting and scraping. There are asymmetric axes of adz-shape. There are few nucleuses, which are small and tired out. One trapeze with a fine edge retouch was found.

Bone and antler artefacts (Figure 3: 9–20) include two short needle-shaped biconical-like arrowheads, and one needle-shaped arrowhead that is flattened and has slightly extended shaft. Several artefacts with round crossings and cylindrical fragments could also be recognised as parts of arrowheads. There are two fragments of points with a flat rhombic section, one of which has jagged notches on one edge. Moreover, there are two fragments of harpoon heads and quite a lot of fragments of flat daggers. Tools made from split tusks of wild boars and burin made from bear tusk can be attributed to a separate group. Perforators were mainly made from split tubular bones. Axes and adzes made from antler and tubular bones are represented by broken fragments. The only exception for axes is an antler item with a slightly asymmetrical blade.

Adornments are presented by one unharmed and one broken pendant from teeth of the animals with a circular groove on the root (Figure 3: 13).

To date, Asaviec 4 is the only known early Neolithic site in the Kryvina peat bog. It is dated by 5th–2nd half of the 4th millennium BC (Чернявский

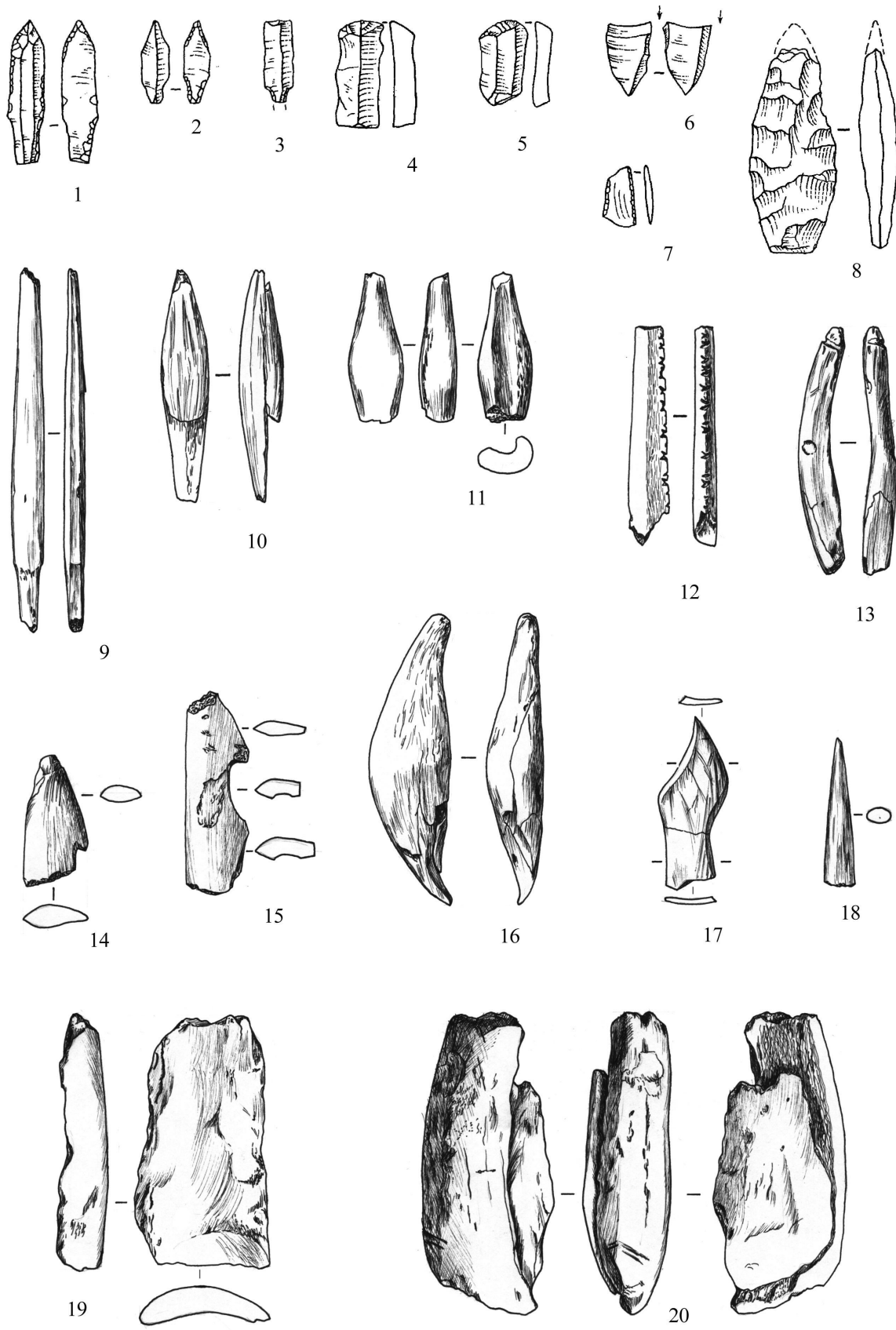


Figure 3: Asaviec 4 settlement. Flint and bone artefacts of the Narva culture. 1-3, 9-12 – arrowheads; 4, 5 – scrapers; 6, 16 – burings; 7 – trapezes; 8 – spear head; 13 – pendant; 14, 15 – harpoon head; 17 – cutting tool; 19 – adze; 20 axe. From the materials of Michal Charniauski.

2012, p. 96). The oldest ^{14}C date for it is 5860 ± 50 BP (K-6213) (4800–4620 cal BC). With the heavy regression during the transition from the Atlantic to the Sub-Boreal phase, the water level decreased approximately 3 m below the modern level (Зубович 2004, таб. 1). As a result, another shoreline was formed at a distance of about 500–600 m from the Asaviec 4 settlement. The inhabitants of this settlement had to leave it due to the regression that occurred at the end of the 4th millennium BC (Чернявский 2012, p. 96).

Later on, two new settlements Asaviec 2 and Asaviec 5 were founded in the northern part of the Kryvina peat bog and the Kryvina 1 and Kryvina 2 sites in the southern part of the region. Few fragments of pottery of the Narva culture were found on the natural soil of the Asaviec 2 settlement (Charniauski and Charniauski 2010, p. 108). However, the location of the Early Neolithic sites in the southern part of the peat bog remains unknown.

Kryvina Peat bog during the end of the 4th–3rd millennium BC

Soon after the appearance of these new settlements, a wave of cultural transformation occurred, caused by the penetration of the bearers of the Comb-Pit Ware culture in the Belarusian Lakeland from the North. As a result, Usviaty Middle Neolithic culture appeared in the region (end of the 4th to middle of the 3rd millennium BC) (Чернявский 2012, pp. 92–94). Its materials were found in the lower part of the cultural layers of the Asaviec 2, Asaviec 5, Kryvina 1, and Kryvina 2 settlements. All of them are peat bog sites and therefore retain a large number of organic artefacts.

The most frequent material of the Usviaty culture at the settlements is pottery (Figure 4), featuring mainly fragments of widely opened kettle- and helmet-shaped pots with slightly blunted sharp bottoms. Fragments of bowls, including oval, and tiny vessels are rarer finds. The rims of the pots have thickened and beveled inside edges. Straight, rounded or thickened rims are rarer. Vessels were made from coils, which were joined to one another by 'U' type connection. Joints were covered with an additional layer of clay. The surfaces of the vessels are very thoroughly worked out with the technique of beating. Some fragments bear traces of polishing. There are also fragments with traces of rolling on the surface of a braided stick. Paste was tempered predominantly by crashed shells, in some cases with tiny organic particles and fired clay. Ornamentation is mainly characterised by the medium and large size of elements and its sparseness. Notches, various pinholes, and side prints of braided stick (known as larva stamps) are the most characteristic elements. Scored thin lines are less common. Comb prints were very seldom used. Ornament usually forms sparse horizontal zones. Sometimes they are more dense and dual. Elements are often slanted to the right, whereby occasionally they form a zigzag, horizontal 'fishbone' pattern, and rhombic figures. Sometimes there are complicated patterns such as images of snakes, birds, symbols and signs of unknown meaning (Charniauski and Charniauski 2010, pp. 104, 108). Ornamentation frequently covers the walls, bottoms, and rims. Edges of the rims and the upper inner surface of the pots could also be decorated.

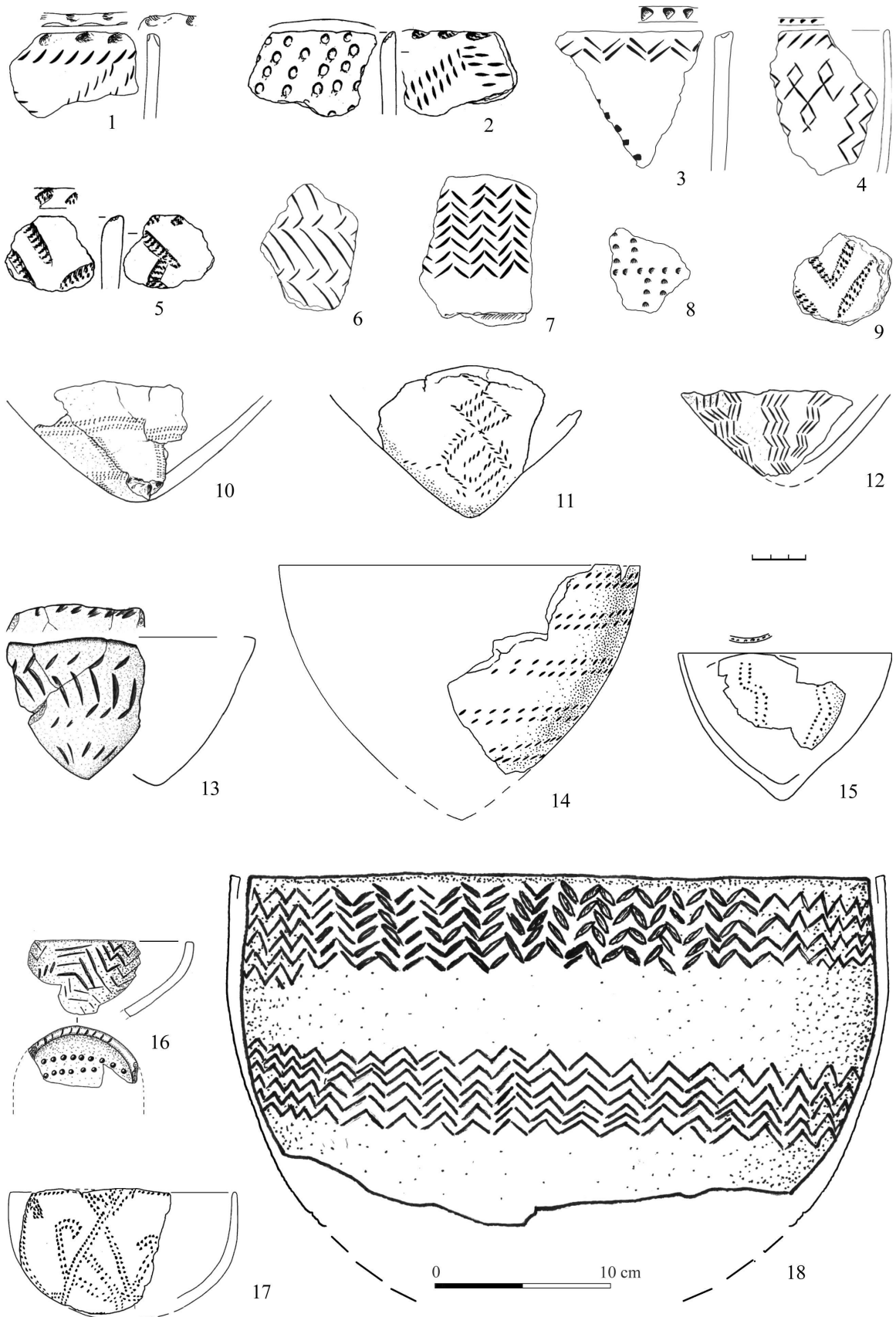


Figure 4: Asaviec 2 settlement. Pottery of the Usyaty culture. 1-12, 14, 15, 17 - according Michal Charniauski.

Scrapers and cutting tools dominate in flint collections of the Usviaty culture from the settlements of the Kryvina peat bog. There are leaf-shaped, drop-shaped, and rhombic arrowheads, and a small number of javelin heads. Stone tools are represented by hummer stones, rubbing stones, and rare foreshaft, rounded section axes.

Bone and antler artefacts include perforators, arrowheads with flat shafts, spear heads made from massive tubular bones, knives, cutting tools made from split wild boar tusks, chisels, axes, and adzes, stamps for ornamentation of ceramics, etc. (Чарняўскі 2007, pp. 58–59). A small number of tools, household articles, and arrowheads contain grooved ornamentation on the surface.

Wooden artefacts are quite rare, mainly being fragments of houseware. One wooden arrowhead — whose morphology is similar to bones items — was found (Чарняўскі 2013, p. 320).

Adornments are presented by pendants made from perforated animal teeth and beads from tubular bird bones. Bearers of the Usviaty culture started to make amber beads and pendants with frontal perforations from imported raw material.

Starting from the beginning of the 3rd millennium BC, new cultural influences began to penetrate into the region. The earliest of them was a Globular Amphora culture. Fragments of amphora of this culture were found at the Asaviec 2 settlement (Charniauski and Charniauski 2010, p. 108). Influences of the Corded Ware Ceramic tradition can be more clearly traced and dated by 2930–2460 cal BC. They were probably penetrating into the central and eastern parts of the Belarusian Lakeland from the North through the Dzvina (Daugava) River and its tributaries.

Archaeological materials of the Circle of Corded Ware Ceramic cultures are mainly represented by pottery fragments (Figure 5: 9). These vessels were made from paste tempered by sand and small crushed rock. The inner and outer surfaces are covered with irregular linear traces left by a tuft of grass mainly in a horizontal direction. Corded prints, smooth stamp impressions and cutting elements are typical for ornamentation. The most common motive is a horizontal 'fishbone' pattern. Triangle arrowheads with bent-inward and flat bases found in late Usviatian layers also belong to the Corded Ware traditions (Figure 6: 1–4).

At the end of the first half of the 3rd millennium BC, new influences forced a transformation of the Usviaty culture into the Northernbelarusian culture (Zhyzhyca-Kryvina stage) (Charniauski 2016; Чернявский 2014). At the beginning of this new culture existence, its bearers continued to live in the Asaviec 2, Asaviec 5, Kryvina 1, and Kryvina 2 settlements.

Ceramics of the Northernbelarusian culture (Zhyzhyca-Kryvina stage) is presented by pots, beakers, bowls, and tiny vessels (Figure 5: 1–4, 10–13). At the beginning of the culture, the vessels were with bluntly sharp and rounded bottoms. Shortly afterwards, all vessels became purely flat-bottomed. Flanges and trays as elements of flat bottoms can be also traced. The rims are slightly bent or straight, being more rarely slightly turned in. Their edges are normally rounded or flat. Pottery was made by different paste recipes. At the beginning of the Zhyzhyca-Kryvina stage, pottery was made from the same paste recipe tempered by crushed shells, fine organics, and fired clay as pottery of the Usviaty culture. Cut of grass and avian feathers (bird lime?) were used as temper material

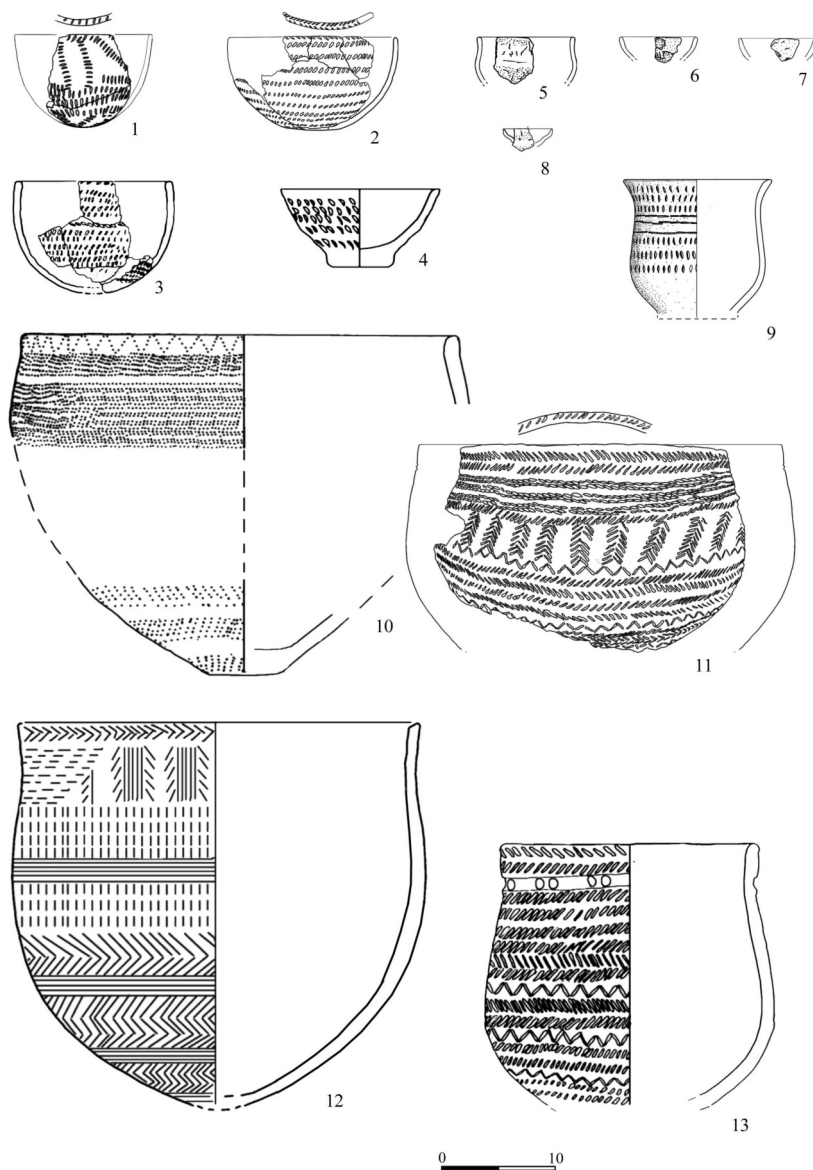


Figure 5: Pottery of the Northernbelarusian culture (1–8, 10–13) and of the circle of Corded Ware (9) cultures. 1–2, 5–9 Asaviec 2 settlement; 3,4,10–13 Asaviec 7 settlement.

later on. New admixture — sand — appeared at the middle of this cultural stage evolution, while crashed shells gradually disappeared. Pottery tempered by minerals (sand and small gravel) dominated at the end of the Zhyzhyca-Kryvina stage.

The vessels were formed from coils, which were joined to one another by “N” type connection. Only at the beginning of the culture hybrid ‘U’ type / ‘N’ type techniques were used. Both surfaces of the vessels are covered with irregular linear traces left by a tuft of grass mainly in a horizontal direction. Furthermore, a particular ceramic group can be distinguished with a surface treated with two techniques, namely smoothing the surface with the “hammer and anvil technique”, followed by subtle and partial crosshatching also with a tuft of grass.

Pots of the Northernbelarusian culture (Zhyzhyca-Kryvina stage) are often large, with a diameter about 30–40 cm. Tiny vessels — which copy the morphology of the large items — could be up to 5 cm in diameter. The

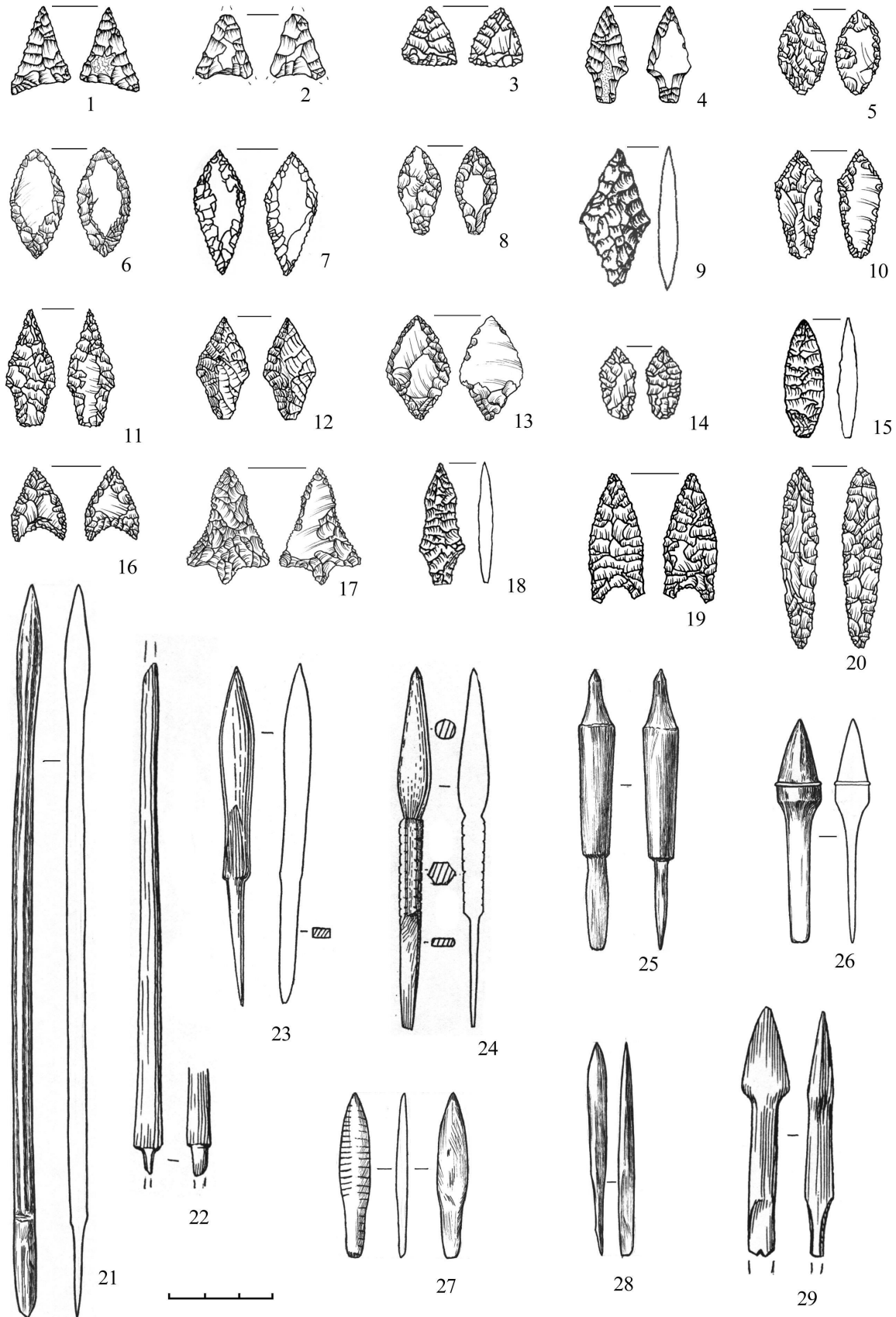


Figure 6: Flint and bone arrowheads of the circle of Corded Ware (1-4) and Northernbelarusian cultures (5-29). Asaviec 2 (1-4,16-29) and Asaviec 7 (5-15) settlement. 21-29 - according Michal Charniauski.

most common ceramic forms are widely opened helmet-shaped, biconical truncated with a transition in the upper third of the pots, and with a slight S-shaped profile (Charniauski and Kryvaltsevich 2011, pp. 118–119). The forms of beakers and bowls are quite simple, although some beakers have a slightly S-shaped profile.

Decoration of the Northernbelarusian culture's pottery is denser than in the Usviaty culture. Typically, ornamentation covers the whole vessel, including the bottom and rims' edge. The inner surface of the pot's rim is also quite often decorated. The inner surfaces of flat bottoms of some of the vessels are also decorated.

Different prints of a smooth stamp, more rarely a comb stamp, straight and curved notches of various length, cord prints, round, oval and amorphous pits (with smooth or irregular bottoms) are the main elements of the ornamentation. Traced lines by a thin or wide stamp or by wooden stick are also represented.

The most typical motifs of the ornament are 'fishbone' horizontal, horizontal rows of vertical or inclined prints, wide and relatively deep circular grooves under the rim with single or double pits, oblique rows of straight, inclined or horizontal prints, and single or double horizontal zigzags. Corded prints and streaked ornaments — including dashed triangles — are quite seldom among the total number of pottery fragments (less than 1 per cent).

The absolute majority of flint, bone, and antler tools types of the Northernbelarusian culture (Zhyzhyca-Kryvina stage) are similar to the previous Usviatian tradition. Changes are only seen in adornments and ritual articles, and a small number of new types of flint and bone arrowheads. New types of bone tools were preformed primarily for flint working, wood-working, and household work (Чарняўскі 2007, p. 60).

The variety of flint raw materials significantly increased due to the established connections of the Northernbelarusian culture with the territories of the Corded Ware culture traditions. There are flints from the Vilija, Sozh, and Nioman regions besides low-quality local raw materials. The collections of flint tools are quite diversified, with the majority of artefacts made on flakes. A variety of scrapers and combined tools with one or more scraping edges dominate in the collection. The trapezoidal with end or with double-sided and end fronts, and narrow elongated scrapers with a high-scraping front along the perimeter are the most distinct types of scrapers. The second most numerous class of flint items is arrowheads (Figure 6: 1–20). For the Northernbelarusian layers of the Asaviec 2 and Asaviec 7 settlements, their number is very high. On average, there are 1.3 arrowheads per m² (Чарняўскі 2010, p. 197). Leaf-shaped and rhombic types with or without shafts are most numerous among the arrowheads. They are identical to the artefacts of the previous Usviaty culture. New cultural influences are represented by an elongated rhombic with a shaft, a triangle with bent-inward or flat bases, a symmetrical rhombic with a narrowed point and shaft, willow-leaved with short shaft arrowheads. There is a group of flint arrowheads that copies the morphology of one of the most numerous local types of bone points (Figure 6: 18). Other flint artefacts are represented by javelin and spear heads, axes, cutting tools, perforators, drill heads, chisels, retouched blades, and flakes. There are many combined tools of multiple uses.

The lack of flint raw materials of good quality led to their maximum usage. For example, finds of unharmed polished flint axes are quite rare, and they were all imported. At the same time, a certain number of small tools such as arrowheads, scrapers, blades, and flakes with retouch have polished areas on their surfaces. There is a certain quantity of middle or rear parts of broken polished axes, too. Both observations could be interpreted as indications of the re-use of broken axes. The lack of flint could also explain the quantity of combined tools.

Stone tools of the Northernbelarusian culture are presented by singular socketed and drilled axes and their fragments, rubbing stones, net sinkers, polishing plates, and tiny chisels.

The collection of bone and antler tools is represented by more than twenty types (Чарняўскі 2007, pp. 59–60), including arrowheads (Figure 6: 21–29), spear heads, daggers, harpoon heads, U-shaped fishhooks, and large hooks, pegs (small needle-shaped articles), axes made from unharmed and split fragments of horn's tines, adzes, chisels, shovels, punches, squeezers, retouchers, palette-knives, pottery stamps, "fish" knives, spoons, hafts, small triangular articles with a flattened section, thrust tools made from horn remains, articles made from elk horns with a remaining appendix, and a part of horn blade.

Layers of the Northernbelarusian culture contain artefacts made from wood and bark, namely net's buoys, fragments of different houseware, and fish traps.

The Northernbelarusian culture (Zhyzhyca-Kryvina stage) is the first culture of the Belarusian Lakeland where metal artefacts appeared (Чарняўскі 2006). In the Asaviec 2 and Asaviec 7 settlements, three copper and bronze perforators and two indeterminate fragments were found.

Adornments and ritual items are quite numerous (Figure 7; Чарняўскі 2015). Bone items are presented by pendants made from mammal and fish teeth, simple, flat-shaped, and key-shaped, from untreated bones, anthropomorphic, and zoomorphic one, beads, and uncertain fragments. Wooden items are presented by a baton with anthropomorphic figurine made on its extremity (Чарняўскі 2015, p. 246). Clay items are presented by a small series of tiny spheres (approximately 1 cm in diameter, some of which have nail prints), one small damaged ornithomorphic sculpture and a split along an ornamented cylinder (Чарняўскі 2015, pp. 246–8). Amber pendants and beads — among the most impressive of the adornments and religion items (Charniauski 2001) — were imported from the Baltic region to Kryvina peat bog settlements in finished form. They differ from previous adornments of the Usviaty culture through their higher level of elaboration, regular geometrical forms, and cross holes. The earliest musical instruments are presented by flutes made from tubular bones of birds (Figure 7: 17).

During the Zhyzhyca-Kryvina stage of the Northernbelarusian culture, certain changes in settlement distribution took place. The favourable living environment and advanced methods of gathering — including high reserves of water nuts — led to an increase in the size of the existing Asaviec 2, Kryvina 1, and Kryvina 2 settlements as well as establishing new ones, namely Asaviec 1, Asaviec 7, and Kryvina 3. All new settlements

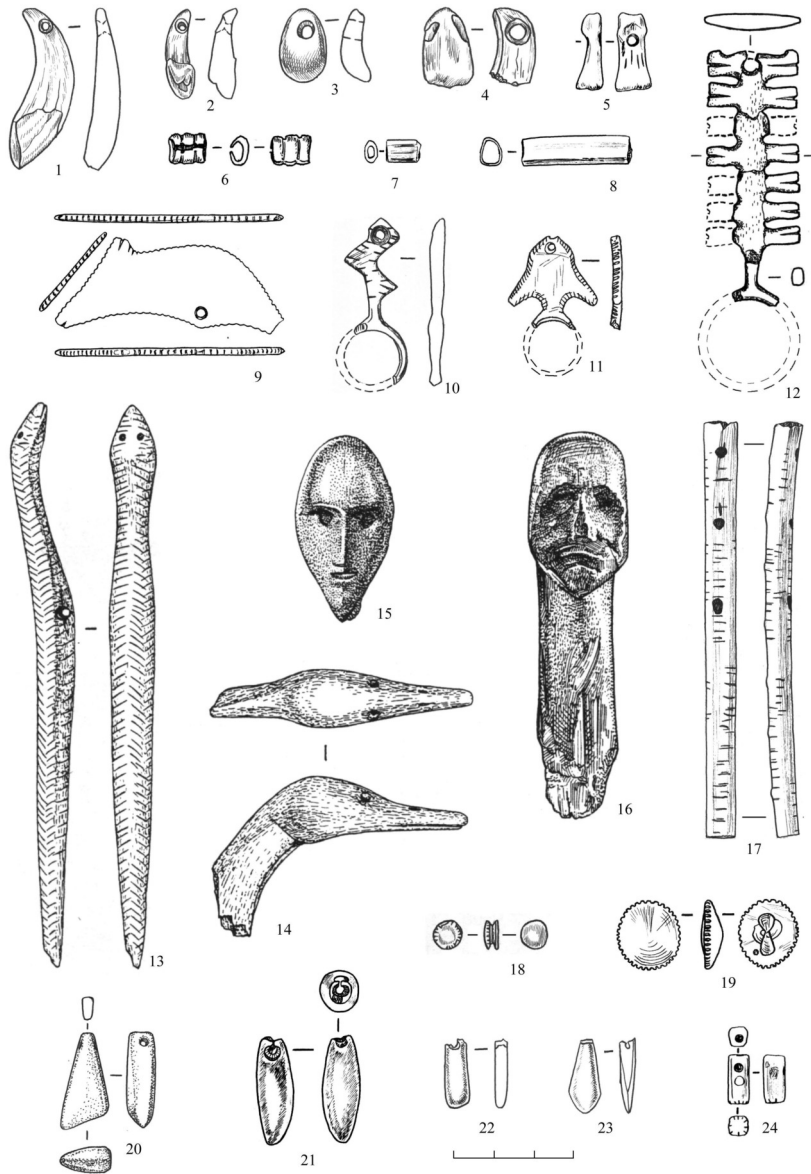


Figure 7: Adornments and religious items, musical instruments of Northernbelarusian culture. 1-3, 7, 8, 13-16, 18, 22, 23 – Asaviec 2 settlement; 4-6, 9-12, 17, 19-21, 24 – Asaviec 7 settlement; 1-11, 13-15, 17 – bone; 12 – antler; 16 – wood; 18-24 – amber. 13-16 - according Michal Charniauski.

were established on new dried turf shores of the paleolake after its regression phase at the end of the 3rd millennium BC. All previous existing settlements were also slowly moved afterwards.

The long period of transgression began in the middle of the 2nd millennium BC. The gradual increase of the lake surface initially forced the inhabitants of Asaviec 7, Asaviec 1, and Kryvina 3 settlements and later of Asaviec 2, Kryvina 1, and Kryvina 2 settlements to leave their places. A new settlement Asaviec 3 was established in the northern part of the peat bog. Materials of this time are known at the Asaviec 5 settlement and on the hill near the Early Neolithic Asaviec 4 settlement (Asaviec 4a location). During this time, mineral temper dominated in the pottery paste of the Northernbelarusian culture. Beaded ornaments seldom appeared among ornamentation motifs.

Ancient inhabitants of the peat settlements left the southern part and moved to the main shore of the nowadays peat bog, although sites of this time remain unknown there.

Materials dated by the second half of the 2nd millennium BC were found at the Asaviec 3 and Asaviec 6 sites, albeit only a small part was excavated.

Conclusion

The Kryvina peat bog is a unique archaeological region, whose territory was inhabited for almost 4,000 years. Archaeological materials of the settlements allowed us to trace the development and transformation of the Early Neolithic Narva culture, the Middle Neolithic Usviaty culture, and the Late Neolithic–Early Bronze Age Northernbelarusian culture. The peculiarities of the cultural layers of the settlements allowed tracing in detail changes in household, hunting, fishing, and gathering through the evolution of these cultures. Changes in the quantity and localisation of settlements according to the variability of climate conditions show the level of adaptation of the prehistoric local population to the environment. Cultural and chronological reconstructions based on materials of the Kryvina peat bog reflect the overall processes that occurred in the Belarusian Lakeland during the Neolithic–Bronze Age time.

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