THE EXCAVATION OF KRYVINA PEATBOG SETTLEMENTS IN NORTHERN BELARUS BETWEEN 2000 AND 2009

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Abstract

Between 2000 and 2010, the Asaviec 2 and Asaviec 7 settlements of Kryvina peatbog (Vitebsk region) were excavated. At Asaviec 2 the excavations concentrated on the northern part, where pure materials of Usvyatian culture were found, and also several fragments of a Globular Amphora culture vessel.

The excavations of the new Asaviec 7 settlement (up till 2007) gave us pure materials of Northern Belarusian culture, too. Among them are bone, antler and flint items, made mainly according to local Neolithic traditions. There are two 14C dates for this settlement: 3770±90 BP and 3870±40 BP.

Key words: Late Neolithic, Bronze Age, peatbog settlements, northern Belarus, Usviaty culture, Northern Belarusian culture.

Kryvina peatbog is situated on the border of the Sianno and Beshankovichy districts in the Vitebsk region. Ten Neolithic and Bronze Age settlements, Asaviec 1, 2, 3, 4, 5, 6, 7 and Kryvina 1, 2, 3, as well as several other sites, are known here (Fig. 1).

Between 2000 and 2009 the settlements of Asaviec 2 (by Michal Charniauski) and Asaviec 7 (by Maxim Charniauski) were investigated. The explorations by Maxim Charniauski in the southern part of Asaviec 2 with the prevailing materials of Northern Belarusian culture are not finished yet, and are therefore not included in the present work.

Asaviec 2

The Asaviec 2 site is situated in the northern part of the Kryvina peatbog 1.3 kilometres south-southeast of the village of Asaviec.

The site was discovered in 1966. Since then, it has been sporadically excavated (Cherniavskii 1967). Almost 350 square metres have now been excavated. Most of the archaeological material at the site belongs to the Northern Belarusian culture of the Late Neolithic to Bronze Age. Usvyatian culture ceramics from the Middle Neolithic were found at the bottom of the cultural layer. They differ from Northern Belarusian culture ceramics in most parameters, and are easily distinguished from the complex of finds. However, flint and bone artefacts from the bottom layer could have belonged to either culture.

Beginning in 2000, the excavations have focused on the northern part of Asaviec 2 (Charniauski 2003; Charniauski 2009). Here, a cultural layer of about one metre was discovered under the peat. Up to 0.5 metres deep, it contained artefacts of Northern Belarusian culture. Lower, down to the bedrock, the remains of an Usvyatian culture settlement were bedded in situ. Specific artefacts were found here that represent comprehensively local Usvyatian culture. They comprise ceramics, tools and hunting weapons made from flint, horn and bone, household tools, decorations, the remains of wooden structures, and osteological and phytologic material.

The ceramics are the most numerous (Figs. 2, 3, 4, 5). They consist of more than 2,000 fragments of pottery, mainly pots, and much fewer bowls (the 2002 to 2009 excavations).

The shapes of the larger pots have not yet been wholly reconstructed. They can be assumed by the fragments available, as well as by the small vessels, which usually copied the patterns of the larger ones. These were low vessels shaped like a helmet, with pointed bottoms and cylindrical tops that transferred smoothly into the near-bottom part. Taken in axial section, the bottoms were usually 90º or more. Their ends were sometimes rounded. The bowls were mostly round-bottomed, and more rarely with pointed rounded bottoms.

The pottery necks were wide open. The height equalled the width, or was slightly bigger. This is also confirmed by the preserved fragments and the rather large quantity of rim residues.

It is difficult to determine the neck diameters of the pots. Having been in a very moist environment for a long time, the ceramics have to a large degree lost their firing. That is the reason why the potsherds, including the rims, have lost their form under the pressure of the

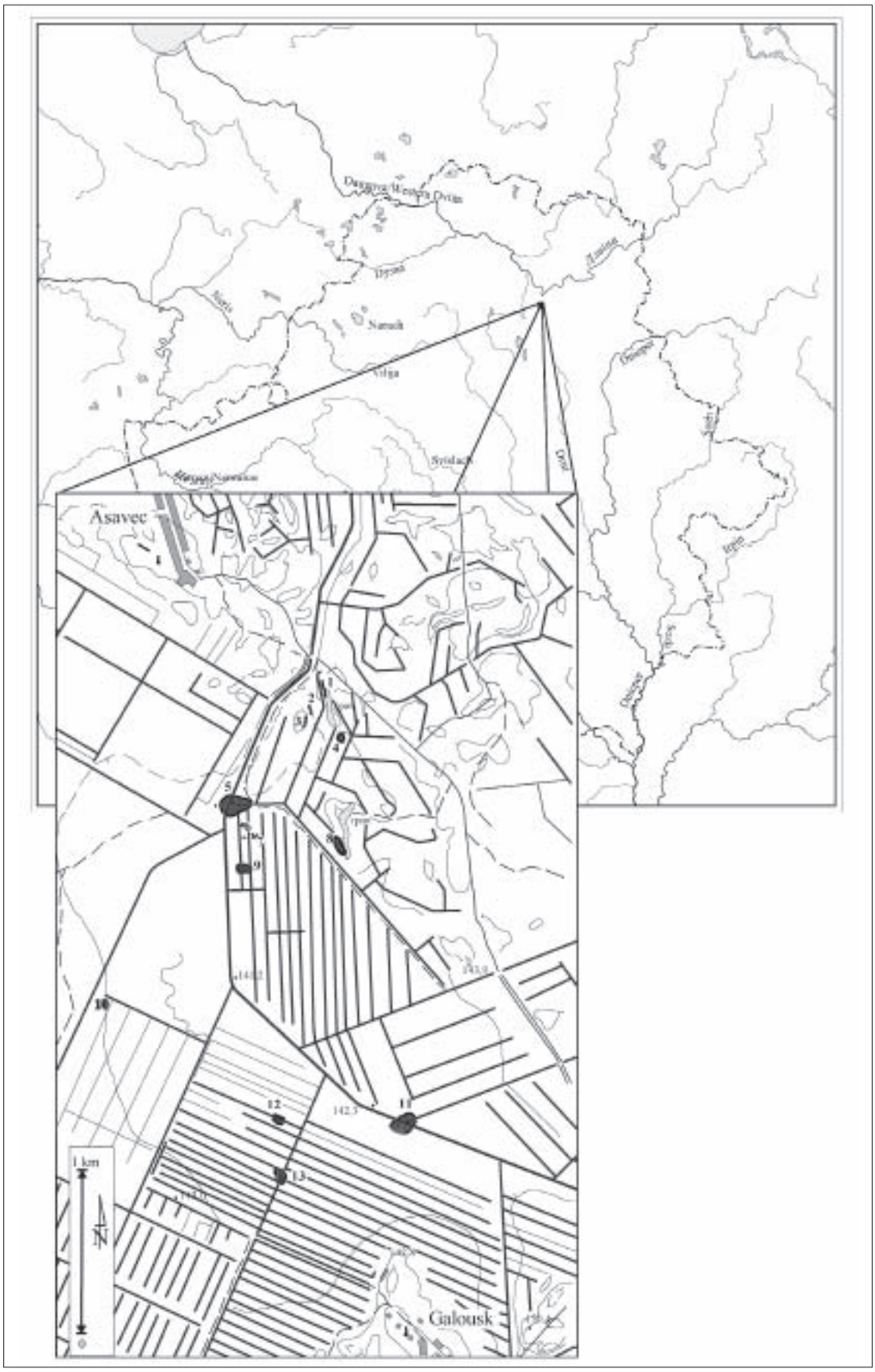

Fig. 1. The Kryvina peat-bog region: the location of the settlements. 1 Asaviec 6; 2 Asaviec 3a; 3 Asaviec 3; 4 Asaviec 5; 5 Asaviec 2; 6 Asaviec 2a; 7Asaviec 2b; 8 Asaviec 4; 9 Asaviec 7; 10 Asaviec 1; 11 Kryvina 3; 12 Kryvina 2; 13 Kryvina 1 (drawing by M. Charniauski).

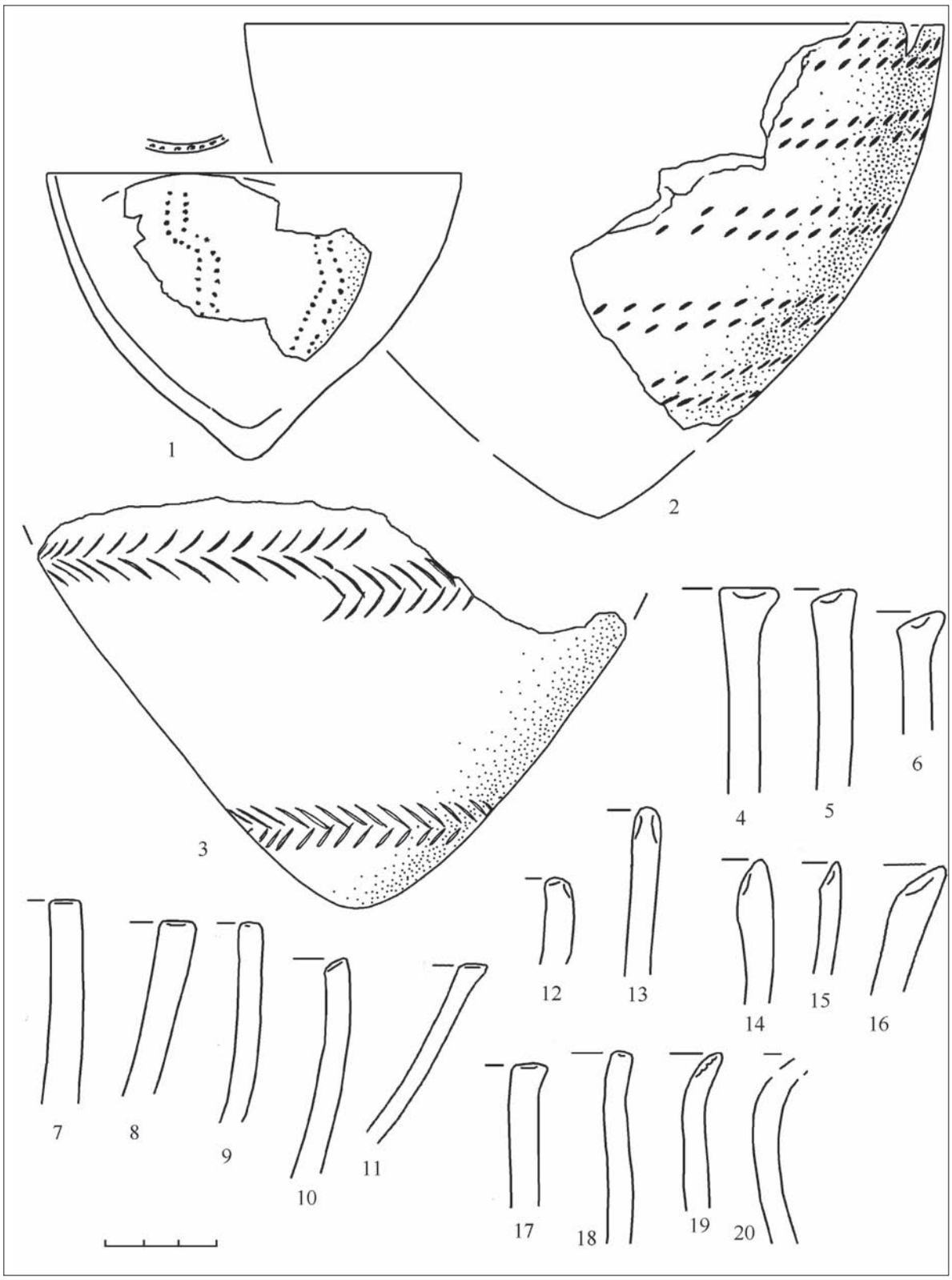

Fig. 2. Ceramics of Usvyatian culture: 1, 2 shapes of vessels; 3 the bottom; 4–20 rims (drawing by M. Charniauski).

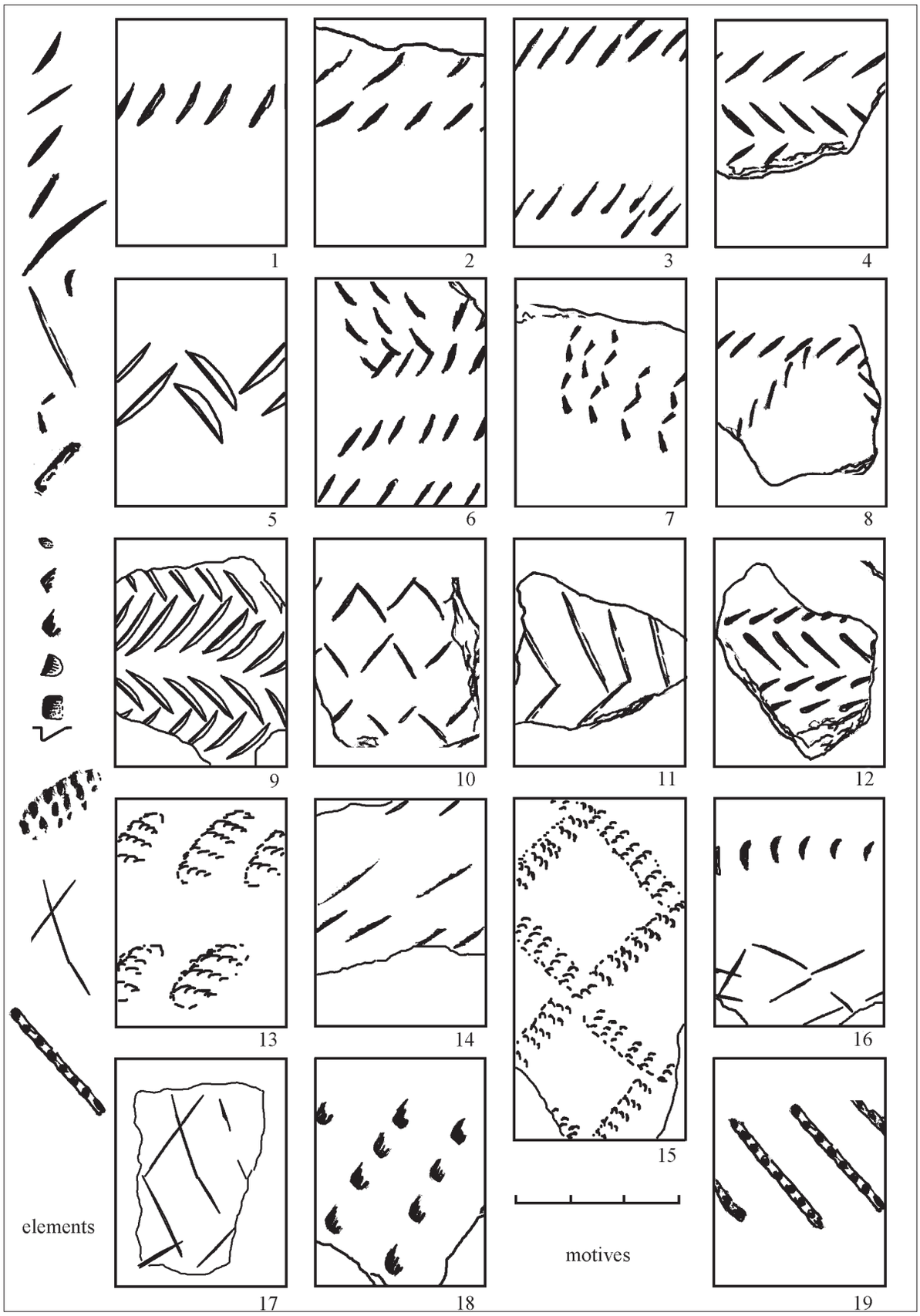

Fig. 3. Asaviec 2. Decorative elements and motifs of Usvyatian culture ceramics (drawing by M. Charniauski).

higher layers. Exceptions occur when a fragment is positioned vertically in the layer. This is why a few finds give us an idea as to the rim diameters, the small pots being from eight to 20 centimetres, the larger ones about 25 to 40 centimetres.

Pot rims are straight or brought together a little, and in rare instances they are slightly bent forward (Fig. 2.4-20). They are usually thickened with a flat, mainly inside tapered cut. Sometimes rims with a similar flat cut but without thickening are encountered. There are also items that are smoothly thinned from the middle part.

Finely crushed shells, often large quantities of them, small pieces of organic matter which was burnt down during firing, and grains of fireclay were added to the clay paste of the walls. As a result, the potsherds were light and porous, but fragile and falling into small pieces when wet. Along the surface, a tight microlaminar structure can be seen in a fresh break. The pieces of crushed shells are of a similar orientation. Inside the break, there is a warm-grey layer that tells us about the insufficient firing of the ceramics.

The pots were made of quite standard clay strips, five to seven centimetres wide and on average six to nine millimetres thick by the butt-end joint method (a swallow-tail joint). Some of the potsherds are exfoliated into two halves. Such a two-layer structure can also be seen on some breaks. This makes us think that a clay roller was made, and afterwards it was flattened (rolled out) into a thin belt. Then it was folded lengthwise. As a result, one edge of the belt was grooved, the other one thinned, which was exactly what was necessary in the swallow-tail joint technique. The belt joints were plastered with clay, and the wall surfaces were smoothed by tapping from both sides with the 'hammer and anvil' technique. The 'hammer' could be a board with thread or cord winding. In the latter case, its parallel stamps remained on the wall surface. The tapping resulted in both pottery surfaces being very smooth. The outer surface was additionally polished with bone polishers. These were ribs and wetted ceramics fragments, sometimes wound with birch bark (Fig. 6.23). Judging by several glossy dark-grey potsherds, the pottery was perhaps also rubbed with carbon powder.

All the ceramics from Asaviec 2 have become greyish after lying in peat for a long time. Usvyatian ceramics are usually grey-brown for the same reason. Some of the inner surfaces still keep a layer of carbon that is up to two millimetres thick here and there. Separate fragments indicate that initially most of the pottery was of a beautiful light-grey, yellowish colour.

The preparation of the clay with the appropriate admixtures, the modelling of the pottery, its decoration and drying, and the polishing of the surfaces was all a laborious process. So the ceramics were taken care of, and when they were damaged they were repaired. The inhabitants tied them with cords and birch bark. This is indicated by the repair perforations on the brims of the potsherds.

After drying and perhaps before polishing, the pottery was covered with decorations, mainly by stamping, and more rarely by carving.

The decorations included various notches, dimples, caterpillar prints, pits, combed motifs and cuts (Fig. 3).

Notches make up more than 90% compared to other elements. They are usually medium-sized (1 to 1.5cm long); however, there are many small and some long and seed-like ones. As a rule, they were made with paddles with round ends, wide and narrow, in the backing-off manner, i.e. the punch (ornamentor) was inclined relative to the decorated surface. The notches were slightly curved, sometimes pressed in the upper part (prodded notches), and usually quite wide. In some cases, they resemble a linear stamp imprint with rounded ends. Sometimes, the notches are curved and thin, as if they were made with a shell.

Most of the decorations were made with an inclined punch (ornamentor) in the backing-off 'cursive' manner. The notches are inclined to the right. Only a few of them are vertical or inclined to the left. This might be connected with most of the people involved in the decoration process being right-handed.

Caterpillar imprints and dimples make up to 4% each. These are quite different, including triangular, square, needle-like and amorphous short notches, and even hoof-like shapes. Pits, drawn lines and combed elements are rare. Pits are shallow and inexpressive, drawn lines are thin or quite thin. Combed stamps have fewer ripples; however, wide and rather long ones are also encountered.

Decorative motifs are usually sparse, and make up single, twin, or, more rarely, multi-row horizontal belts that are sometimes situated under the rim only. In some cases, patterns are skew or vertical, they even cross each other, creating closed zones. Some pottery has no decoration at all, except for the rim.

Flattened or tapered rims are always decorated. If the rim was thin, the decorated belt was shifted to its inner edge. Sometimes the same occurs with a thickened rim as well. The rim usually had the same decorative elements as the pot's body. We should also mention the absence of a deep round pit belt on Usvyatian pottery that was typical of the ceramics of other Neolithic cultures of Belarus.

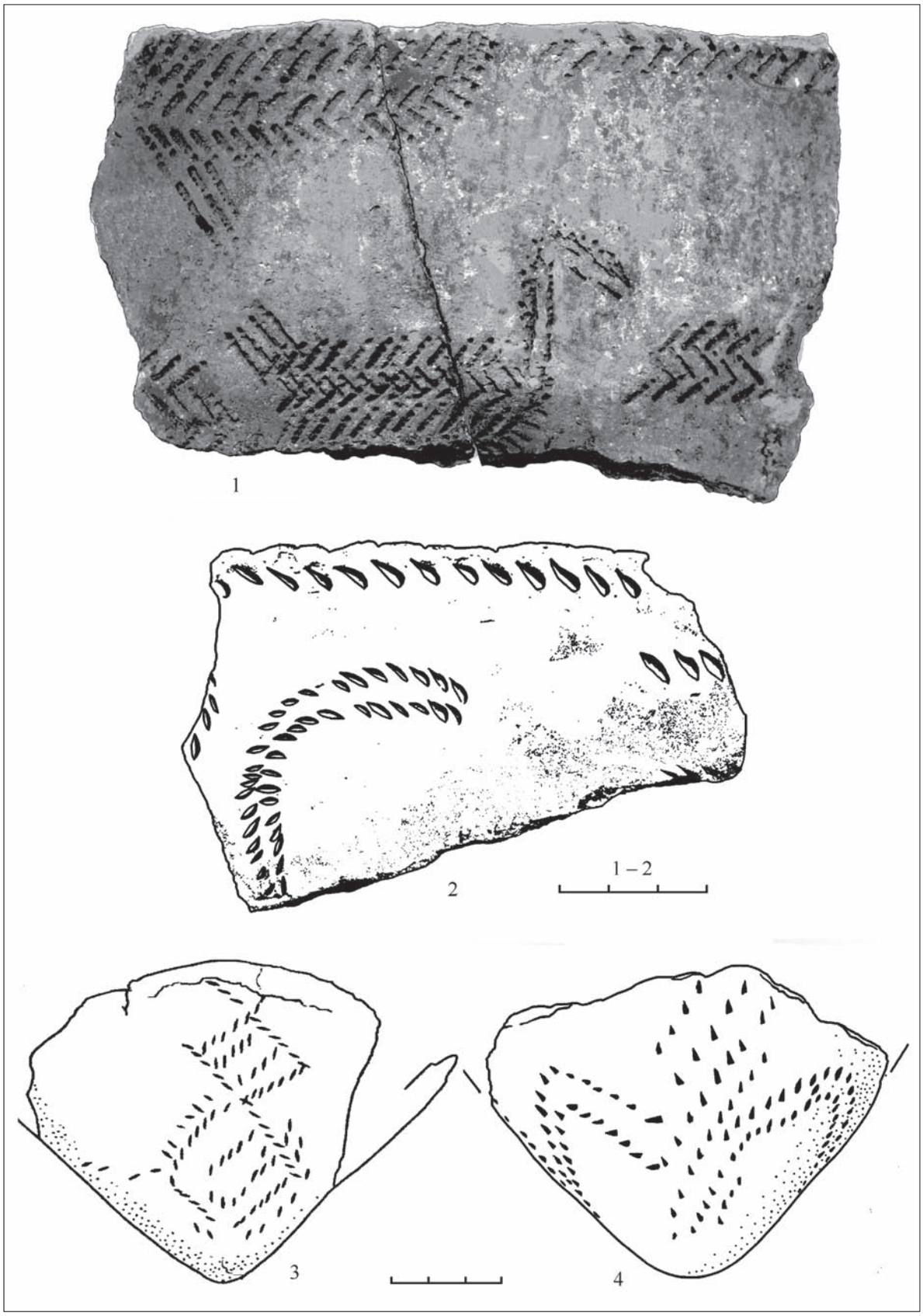

Fig. 4. Asaviec 2. Figurative motifs in the decoration of Usvyatian culture ceramics. 1, 2 ducks; 3 a rhombus composition; 4 a crown of water nut leaves (drawing by M. Charniauski).

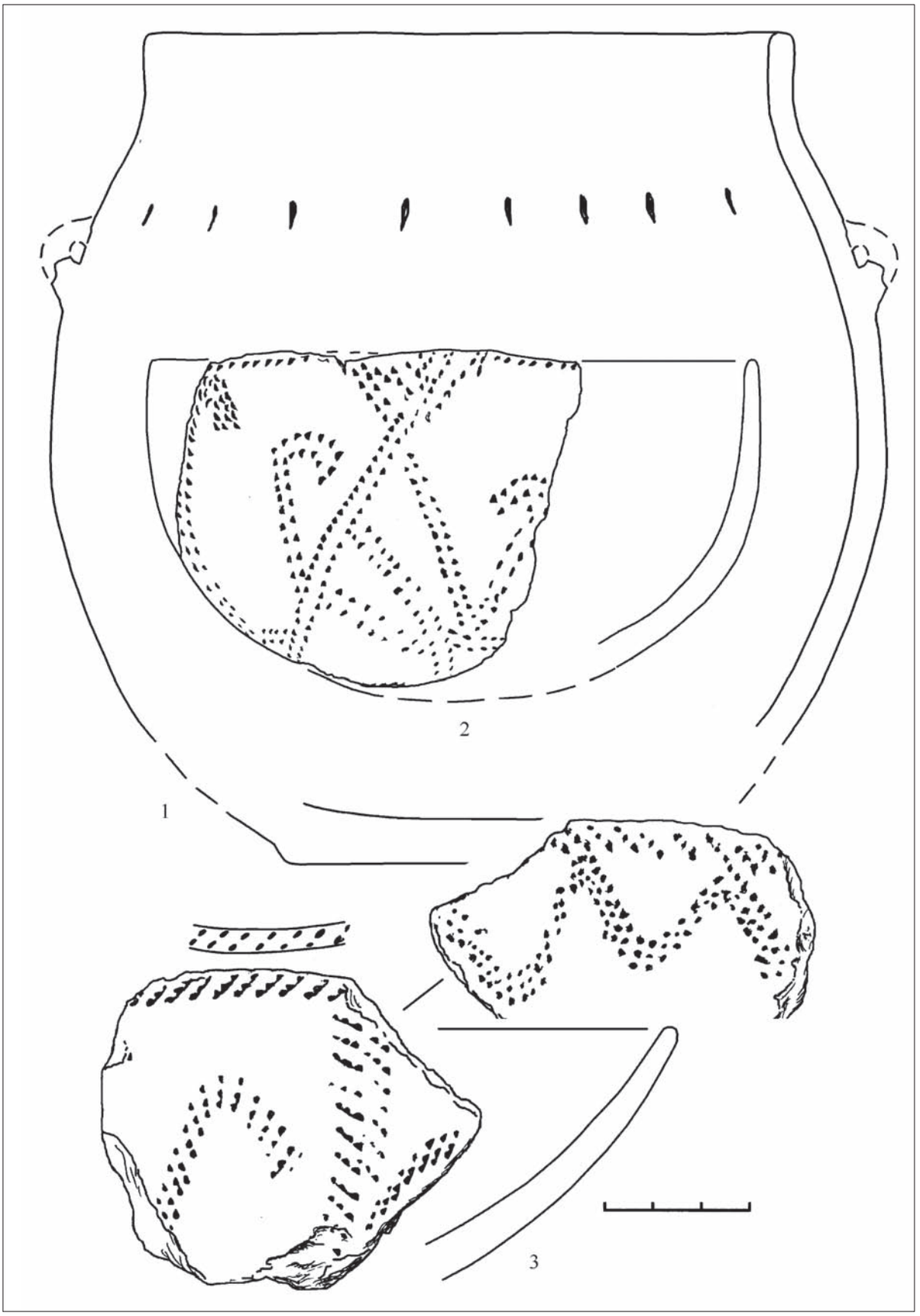

Fig. 5. Asaviec 2. Ceramics: 1 an amphora of Globular Amphora culture; 2, 3 fragments of Usvyatian culture vessels with duck images (drawing by M. Charniauski).

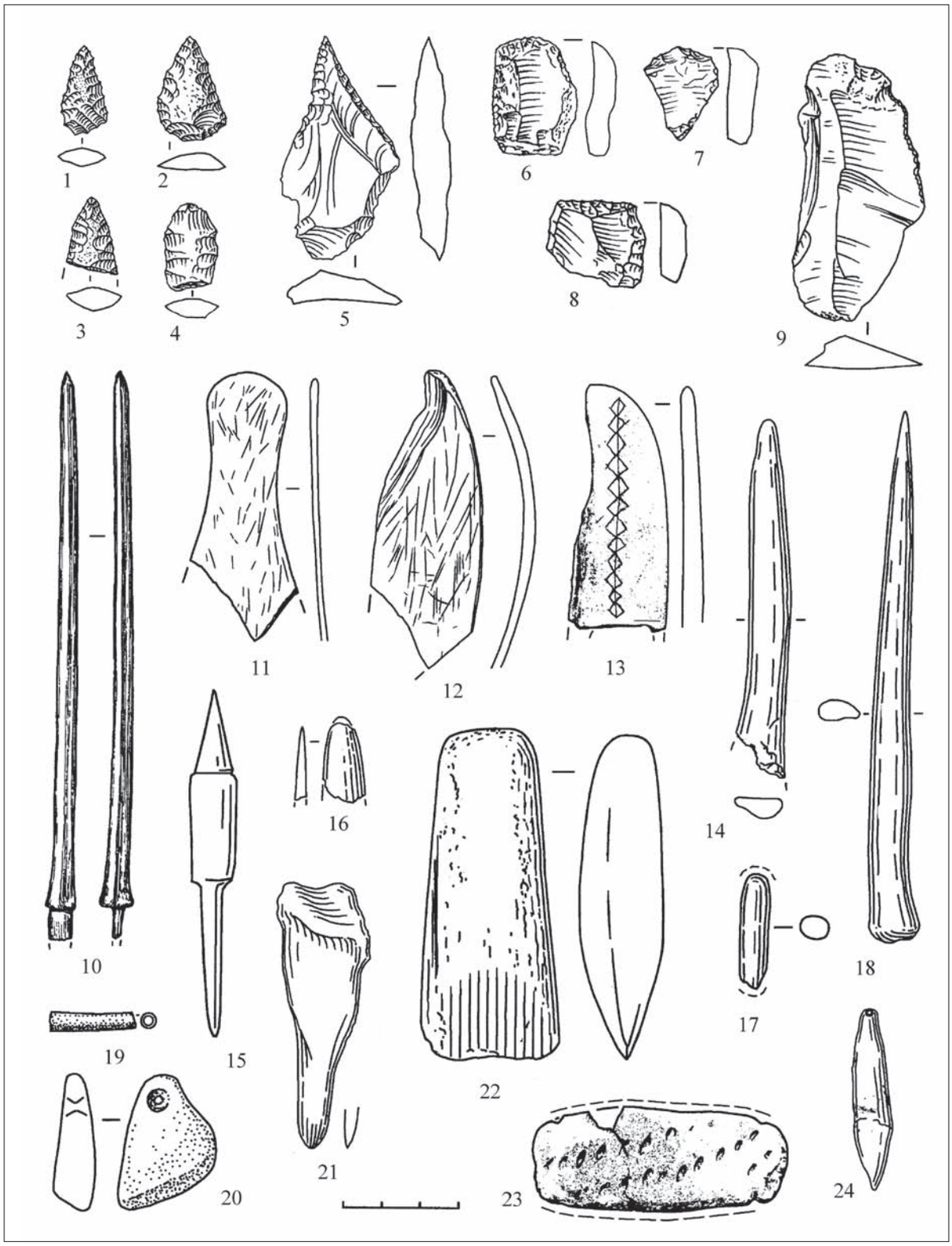

Fig. 6. Asaviec 2. Items of Usvyatian culture made of flint (1–9), antler and bone (10–19, 21, 22, 24), amber (20) and ceramics (23): 1–4, 10, 15 arrowheads; 5 a javelin head; 6–8 scrapers; 11 a fragment of a figure plate; 12 an item made of wild boar tusk; 13 an ornamental plate; 14, 18 punches; 16 the spike of a dagger; 17 a decorator; 19 a bead; 20, 24 pendants; 21 a chisel; 22 an axe; 23 a ceramic polisher (drawing by M. Charniauski).

Usvyatian ceramics of the Kryvina micro-region are distinguished by the presence of pictorial elements in the decoration. The majority of these finds were obtained during the last few years. They are quite realistic and also outlined stamped pictures of swimming birds (Figs. 4.1, 2; 5.2, 3), snakes (Fig. 2.1), and crowns of water chestnut leaves (Fig. 4.4). There are wavy lines, zigzags, herringbone patterns, and arcs as signs of the earth, water and celestial phenomena. Rhombuses were probably stylised images of eggs, the most important sacred element in the cosmogonic mythology of the local people (Fig. 4.3).

Split flint is generally rare. It can be explained by its absence in the area. Usvyatian ceramics are accompanied by drop-like and rhombic arrowheads (Fig. 6.1-4), a non-typical javelin head (Fig. 6.5), chip scrapers (Fig. 6.6-8), knives (Fig. 6.9), and perforators. The inhabitants of the settlement tried to work on some non-flint stones as well.

Flint was successfully replaced by antler and bone, which was generally typical of the whole Neolithic Age in northern Belarus.

Bone needle-like (Fig. 6.10) and close to biconical (Fig. 6.15) flat-shaft arrowheads have been unearthed. The latter provided the basis for the development of Kryvina-type arrowheads of the Late Neolithic Age. There are fragments of spearheads and daggers (Fig. 6.16), perforators made from small bones with heads (Fig. 6.14, 18), and pieces of tubular bones, and tools made from wild boar's tusks (Fig. 6.12). In order to produce cutting tools, fragments of antlers were used, on which skew blades were formed. However, the local people had begun producing axes using a better technique, by splitting the antler piece in two halves (Fig. 6.22).

There is a fragment of a flat bone figured plate (Fig. 6.11) and a damaged flat artefact with rhombic decoration that might have been used for netting (Fig. 6.13).

The excavations made over the last few years have uncovered examples of decoration. These were perforated animal teeth (Fig. 6.24), beads made of tubular bird bones (Fig. 6.19), and a skull fragment of a small animal with a perforation. It was in the Middle Neolithic that amber jewellery appeared in northern Belarus. In the lower layer at Asaviec 2, two pendants with a frontal perforation (Fig. 6.20) and a fragment of a bead were found.

During the excavations between 2000 and 2009, the remains of some wooden constructions of poles and sharpened stakes driven into the bases of the cultural layer or into the bedrock were found in the layer with Usvyatian artefacts. Fire hearths were located on sandy platforms here.

The cultural layer contains many very splintered animal bones, bird bones, fishbones and scales. There are also the burnt cores of water chestnuts, nutshells of hazelnuts, and the shells of lake shellfish.

The excavations at Asaviec 2 also uncovered fragments of human bones, mostly splintered. One bone was the femur of a young individual, estimated between 12 and 15 years old. It could be evidence of cannibalism in the area, as the bone has some marks that could be traces of cutting (identified by Astrid Lennblad, Gotland University, Sweden).

Single fragments of Narva culture were found at the bottom of the cultural layer together with the Usvyatian artefacts. This suggests that the settlement was founded by bearers of Narva culture. However, it took a short time for Narva culture to transform itself into Usvyatian culture. This was very likely facilitated by the influence of Baltic culture, with its typical combed-pit ceramics. This influence resulted in, for example, the presence of smooth-wall ceramics with traces of gravel, and images of ducks made with widely indented stamps. To the west of the Belarusian Lakeland, where the coexistence of local people with the bearers of Baltic culture occurred, there are large quantities of hybrid ceramics in local settlements in which Late Narva techniques were combined with Baltic shapes and decoration.

The excavations in 2009 uncovered fragments of pottery of Globular Amphora culture (Fig. 5.1) in the upper layer with Usvyatian artefacts. They originated from a two-ear flat-based amphora with a rim diameter of about 15 centimetres. The colour of the vessel was brownish-grey, darker on the inner surface where the carbon layer was preserved. The walls have a lot of coarse sand in their structure. The grains are generally rolled, and of a light-grey or pinkish colour, sometimes up to five millimetres in size. The wall surfaces have slight traces of polishing, horizontal on the rim and skew on the body. The traces on the inner surface are close to horizontal ones. There was a belt of small vertical notches on the part of the amphora where the neck turns into the shoulders.

In Belarus, such amphorae have only been found so far in the western part of the county (Charniauski 1997, pp.211-216). They are also known in Lithuania, mostly in the western and southern parts (Girininkas 2009, Fig. 150). During previous years, in the upper part of the Usvyatian layer, ceramics that could be connected with Corded Ware culture were encountered. This may suggest that the bearers of Globular Amphora and

Corded Ware cultures were involved in the decline of Usvyatian culture.

The porous ceramics of a Kryvina bottom layer type were marked out, and referred to another type of Narva culture as a result of the explorations of Skema 1 on Lake Narach and at Asaviec 2 (Charniauski 1965, p.72ff; Cherniavskii 1969, pp.71-79). The understanding of materials of recent years makes it possible to consider the porous ceramics and accompanying flint and bone artefacts as belonging to Usvyatian culture of the Middle Neolithic singled out by Mikliaiev (Mikliaiev 1971, p.20ff).

The carbon from the ceramic fragment with images of ducks showed an age of 4370±50 BP (Ua–34618) (Zaitseva *et al.* 2008, p.86). There is also an older date obtained from the bark from the bedrock surface of 4900±140 BP (IGSB–779). As can be seen, the dating of the Usvyatian culture artefacts from Asaviec 2 correspond to the chronological period of the culture at the settlement of Usvyaty 4 (5120–4030 BP (Mikliaiev 1995, p.19).

The Usvyatian culture artefacts of the Kryvina microregion have their own peculiarities. One of the most important features is the minimal quantity of the combed elements, and the total domination of notches. At the same time in the Narach Lakeland, on the southwest periphery of the culture, there are more thin-combed and linear stamps, pit elements. Zaikovski distinguished two versions from the porous ceramics culture of the Middle Neolithic in the Lakeland, Kryvina and Dzisna versions (Zaikovski 1985, p.11ff).

Today we know that the Usvyatian culture of the Middle Neolithic occupied the total area of the Belarusian Dzvina region (Charniauski 2008, p.73), except for the far southeast part with its Babinavichi-type settlements (Zaikovski, 1985). To the south, Usvyatian artefacts were discovered upstream of the River Biarezina, and to the southwest on the River Vilija and Lake Narach region. This culture also occupies the southern part of the Pskov region and the northwest of the Smalensk region.

Asaviec 7

This settlement is situated in the northern part of the Kryvina peatbog, 1.6 kilometres south-southeast of the village of Asaviec, and 0.3 kilometres south-southeast of the settlement of Asaviec 2, on the other side of the initially not yet flattened bed of the River Kryvinka (Fig. 1.9).

Unlike the neighbouring Asaviec 2, the settlement is located directly on peat, which tells us about its occupation during the time of the regression. The regression was quite long, as the peaty lakeshore (the depth of the mainland peat exceeds 1m) had to dry well before settlement became possible.

A total of 70 square metres was excavated, and 25 square metres more was cleaned at the ash depth at Asaviec 2.

The bedrock of the settlement drops in a southwesterly direction, exposed to daylight by a peat fire in 1999. As a result, the thickness of the cultural layer is from 0.2 metres in the northern squares to 1.15 metres in the most preserved area (without pits). Material in the form of flint artefacts is found 20 metres north of the place where the bedrock outcrop is. Therefore, we should assume that the cultural layer here was totally destroyed by fire.

The cultural layer consists of two peat horizons of different sand content levels. It contains two to four fillings of lake sand (5 to 15cm thick). The lowest part rests upon a pine bark bedding that in turn lies directly on bedrock, dense dark-brown peat abundantly rich in plant residues. Above all, the filling here is a thin interlayer with a lot of small pieces of coal and organic matter.

Finds have been encountered beginning with the day surface of the settlement. Larger quantities of them in the cultural layer coincide with the depth of the two first sand fillings, 15 to 50 centimetres on average, depending on the square.

Eight years of exploration have given us numerous materials: ceramics, bone, antler, clay, flint, stone, bark, wooden, amber and copper artefacts.

The ceramics of Asaviec 7 belong almost completely to Northern Belarusian archaeological culture. About a dozen fragments belong to Usvyatian and Middle Dnieper cultures, some date from the late Bronze Age.

More than 13,000 identifiable ceramics fragments, and almost the same number of unidentifiable small pieces (less than 2 sq. cm), have been uncovered.

The firing quality of the pottery is rather poor. The inside wall breaks have the darkest interlayer, which vanishes closer to the rim. The long stay in water has made some of the fragments lose their firing, and surface ornamentation and processing traces are easily smoothed by the touch of a finger. All these things lead us to believe that the pottery was fired in a fire hearth at modest temperatures.

As an admixture, crushed shells, grass, and sometimes gravel and sand, were added to the clay. Single fragments suggest the possible use of chamotte. It was common to add bird down and down feathers to the

clay paste. To make one vessel, they used two and even three different additions.

The pots were made of wide strips by means of skew sticking; sometimes fragments with traces of butt-end and hybrid skew-butt-end joining methods are found that are signs of the Usvyatian tradition.

The surfaces of the fragments are hatched, mainly horizontally. The hatching depth and expressiveness differs, the most vivid is usually located inside the pot. On the outside surface, it is smoother, and is slightly visible on certain parts of the pottery. If there is no decoration, the hatching relief increases; sometimes, apparently, it was used as the decoration for the components.

The rims are slightly forward-bent, straight, and tapered mostly with rounded or flattened cuts, some of them with a build-up. Some of the rims were decorated along the cut; several have the decoration on the inside surface.

Mostly flat-base pottery was used in the settlement; rounded or slightly pointed bottoms are rare (Fig. 7.2-4, 12-13).

The decoration on the pottery is very dense, usually covering the whole vessel, including the bottom and rim cut, and sometimes inside the latter. An exception to this is the slightly ornamented pots in which the clear influence of corded ware ceramics can be seen.

The main decorative elements at the settlement are the imprints of combed and smooth stamps (square, oval-shaped, lens-like, and in a C-shape, as well as all the possible variations obtained by changing the incline of the decorating tool), straight and curved notches of various lengths, 'caterpillar' and corded imprints, the imprint of a rounded stick edge, and pits of round, oval and amorphous shapes. Tracing with narrow and wide tools was also applied.

The most common decorative motifs are: a band of sparse pits (double pits) on a wide and deep flattened encircling groove (Fig. 7.1, 23), a horizontal herringbone pattern made with the help of a combed or smooth stamp, various notches and strikethroughs (Fig. 7.1-2, 18, 21, 28), bands of vertical imprints of combed or smooth stamps, notches (Fig. 7.2, 17, 19, 25), bands of inclined notches, usually to the right, imprints of combed or smooth stamps (Fig. 7.20, 27-31), a band of crossed notches inclined to different sides, imprints of combed or smooth stamps (Fig. 7.17), bands of single or twin zigzags made with combed or linear stamps (Fig. 7.3-4, 21), oblique rows of vertical, inclined, or, more rarely, horizontal imprints of mainly smooth S going diagonally from the rim (Fig. 7.2), narrow horizontal encircling bands, streaked or made of mutually overlapping imprints of smooth or combed stamps, imprints of a cord (Fig. 7.2, 19), horizontal bands of adjoining hatched triangles with changeable vertices (Fig. 7.5), bands of pits (Fig. 7.6), and single, twin and triple 'arcs' from imprints of smooth stamps or pits (Fig. 7.22).

It should be mentioned that many identical decorative motifs were made with the help of smooth as well as combed stamps, and that the latter were used less by the dwellers of the settlement. However, some tools have been observed to have such inexpressive indentations that their imprints are difficult to distinguish from a smooth stamp, especially when they have not been applied to the surface at a right angle.

The most common combinations of decorative motifs are:

- 1-2 herringbone belts underlined by an encircling groove with separate or twin pits. They were used to line the rim (Fig. 7.1)
- herringbone bands connected by bands of inclined or vertical imprints (Fig. 7.1-2, 26)
- herringbone bands transferring to bands of crossed to-and-fro-inclined stamps
- inclined stamps or herringbone patterns divided by one or two bands of horizontal zigzag (Fig. 7.1)
- bands of inclined stamps or herringbone patterns divided by one or several bands of pits (Fig. 7.28)
- bands of pits, short vertical imprints of linear stamps or encircling cord stamps that restrict from above and below the row of adjoining hatched triangles

The reconstruction of vessels from the settlement allows us to single out the basic forms: poorly profiled vessels with a convex body and a slightly distinguished neck; vessels with an S-shape profile made according to the traditions of Corded Ware cultures; biconical pots with a tapered top (Fig. 7.1-6); and bowl-shaped goblets (Fig. 7.12-14, 16). Tiny copies of pots, including decorated ones, appear among the artefacts (Fig. 7.10-11, 15).

There are traits of Usvyatian, Upper Dnieper and Corded Ware ceramics (Middle Dnieper and Baltic) cultures in the ceramic complex of Northern Belarusian culture from the Asaviec 7 settlement (Charniauski 2006, p.44ff).

At the Asaviec 7 settlement, bone and antler artefacts of four categories have been unearthed: hunting and fishing tools, household and working tools, artistic and cult objects, and musical instruments. A total of 279 artefacts of these types were discovered during

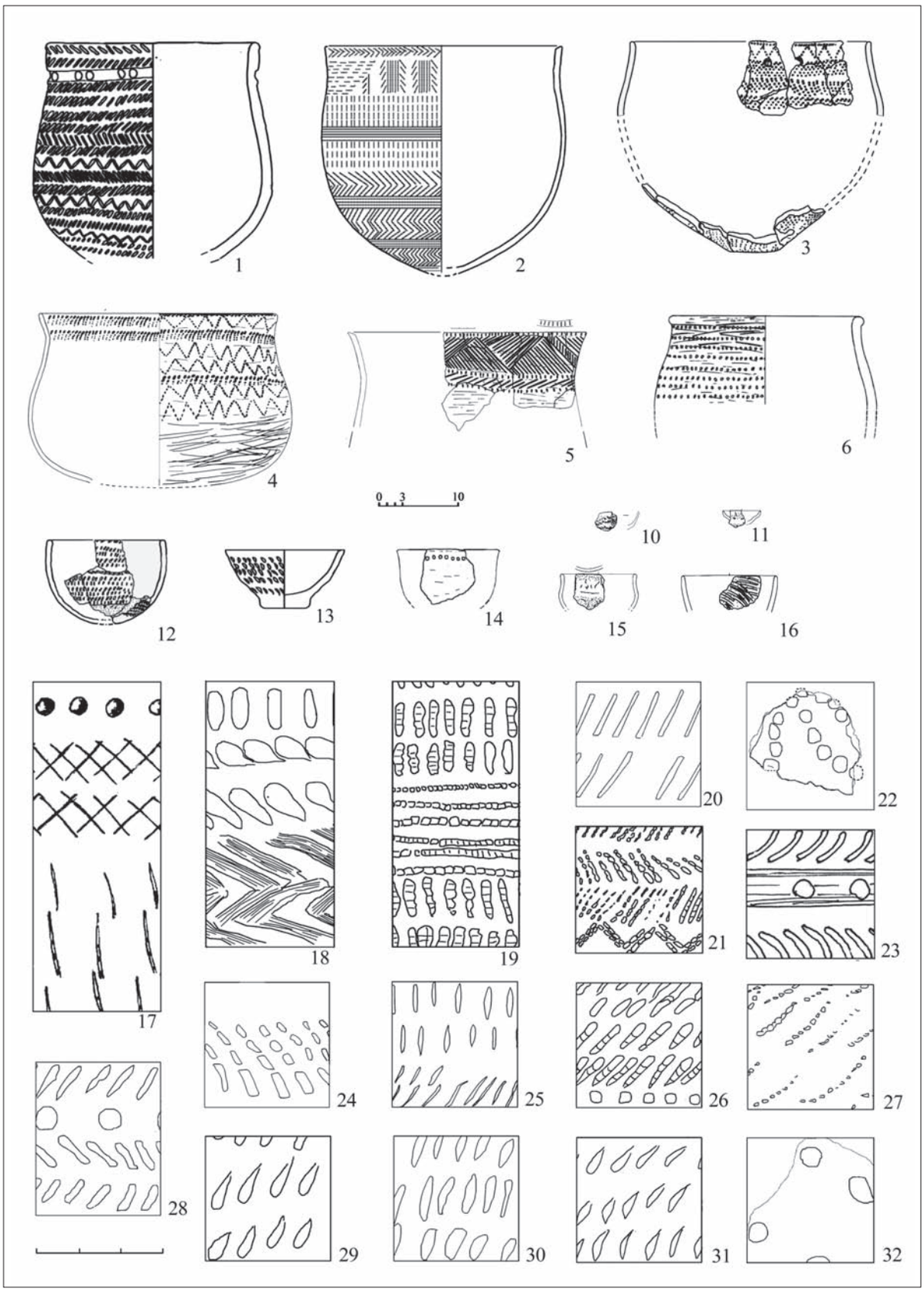

Fig. 7. Asaviec 7. Ceramics of Northern Belarusian culture: 1–16 vessels; 17–32 decorative elements and motifs (drawing by M. Charniauski).

eight years of exploration there: 20 arrowheads, four harpoon heads, five daggers, five fishhooks and six remains of their production, three axes, three chisels, 20 perforators, 18 items of split wild boar tusks (so-called 'fish knives'), two items from split beaver incisors (fragments of items made from a beaver jaw?), one spearhead, two spikes, two flakes, four pressure tools, four punches (ornamentors), one palette-knife, 31 pendants (including 19 of animal teeth), one half-moon-shaped pendant, one 'grivna', three key-like pendants, two zoomorphic pendants, five bear or beaver phalanges, one from patella, 22 beads, two pins, one flute, 77 indefinable fragments of artefacts, 14 intermediates, and 27 fragments of production residues.

Bone arrowheads are mainly represented by artefacts of the 'Kryvina' type. These are spindle-shaped (Fig. 8.5, 6), bottle-shaped arrowheads (Fig. 8.1, 2, 4) and their flattened variants (Fig. 8.3). There are also stretched willow-leaved shapes (Fig. 8.7). Some of the fragments imply the use of needle-shaped items (Fig. 8.13). The bone arrowheads of 'Kryvina' type are mostly typical of the settlements of the Kryvina peatbog. They make up about 30% of all the artefacts of this class in the region.

Bone daggers are represented by items made from ulnar and radial bones of large horned animals with a preserved epiphysis (Fig. 8.8). All the harpoon heads uncovered are one-sided two-pronged ones, with a spatulous design of the haft (Fig. 8.9-10). The fishhooks are similar in their shapes to typical ones of the Kryvina region. They are U-shaped, and have a nail-like widening for a fishing line (Fig. 8.11-12).

The axes uncovered are made mainly of split antler (Fig. 8.22). Chisels are represented by an item made from a split tubular bone with the preserved epiphysis as a crash platform and tools with a broken top part. The shapes of the perforators from Asaviec 7 are the most widespread ones: made of small limb bones with a preserved epiphysis mainly of slate (Fig. 8.17), and also split tubular bones (Fig. 8.20). Pressure tools (Fig. 8.18) and ornamentors (Fig. 8.19) are encountered among the artefacts too.

Quite a large group consists of cutting-scraping artefacts made of split wild boar tusks, so-called 'fish knives' (Fig. 8.15-16).

There are also fragments of beaver incisors with sharpened cutting surfaces. These are possibly evidence of the use of scraping-cutting tools from the lower halves of beaver jaws that are found among the artefacts of the neighbouring Asaviec 2 settlement (Razluckaia 1999, p.99).

An abundant collection of bone and antler artefacts of artistic and cult items and musical instruments has been uncovered at the settlement: diverse beads (Fig. 9.5-7), pendants made from animals' teeth (Fig. 9.10-13), phalanges (Fig. 9.15) and patellae (Fig. 9.14) with perforations. The unique key-shaped pendants (Fig. 9.1-3) should be mentioned separately, as they do not have direct analogues beyond the borders of the Kryvina peatbog (Charniauski, Charniauski, 2005). The zoomorphic artefacts are also interesting: a bone pendant (Fig. 9.17), a possible mixing spoon in the shape of a bird made from a wild boar tusk, and a half moon shaped pendant ('lunnica') (Fig. 9.16).

This category can also be enlarged by an artefact made from a whole wild boar tusk split down its length, some well-processed bone fragments (Fig. 9.18), and possible pin (hairpin) fragments (Fig. 9.8, 9, 24).

The find of a whole flute with three holes (Fig. 9.23) is unique.

Flint artefacts at the settlement are represented by chips (which dominate), flakes, blades and articles, such as arrowheads, javelin heads, axes, strickles, scrapers, raspers, knives, punches, perforators, daggers, retouching chips and flakes. There are many combined articles, mainly with a scraping basis. Scrapers (123 items) and arrowheads (98 items) dominate in number among the tools. Raspers and combined artefacts on a scraping basis total 44 items. The remaining classes of artefacts found do not even reach 5% (except for cutting ones, 37 items, at 8.7%). Sozh, Valdai and Neman flint can be visually distinguished at the settlement. Some of the articles were made of local flint mineral with an uneven surface of chips.

One morphologically diverse class of artefacts found at the settlement is the arrowheads, represented by five basic forms: leaflike, rhomboid, rhomboid-like (intermediate), triangular and figured.

Leaflike arrowheads are divided into four groups: leaflike symmetrical (shaft and shaftless) (Fig. 10.1-3); leaflike with the widest body part shifted to the spike (shaftless) (Fig. 10.5); violet willow leaflike (shaft and shaftless) (Fig. 10.6, 12); and drop-shaped (the widest part is at the bottom of the article, shaftless) (Fig. 10.4).

Rhomboid arrowheads are comprised of three groups: rhomboid symmetrical (shaft and shaftless) (Fig. 10.7-10); rhomboid stretched (shaft); and rhomboid asymmetrical, with the widest body part shifted to the spike (shaft and shaftless) (Fig. 10.11).

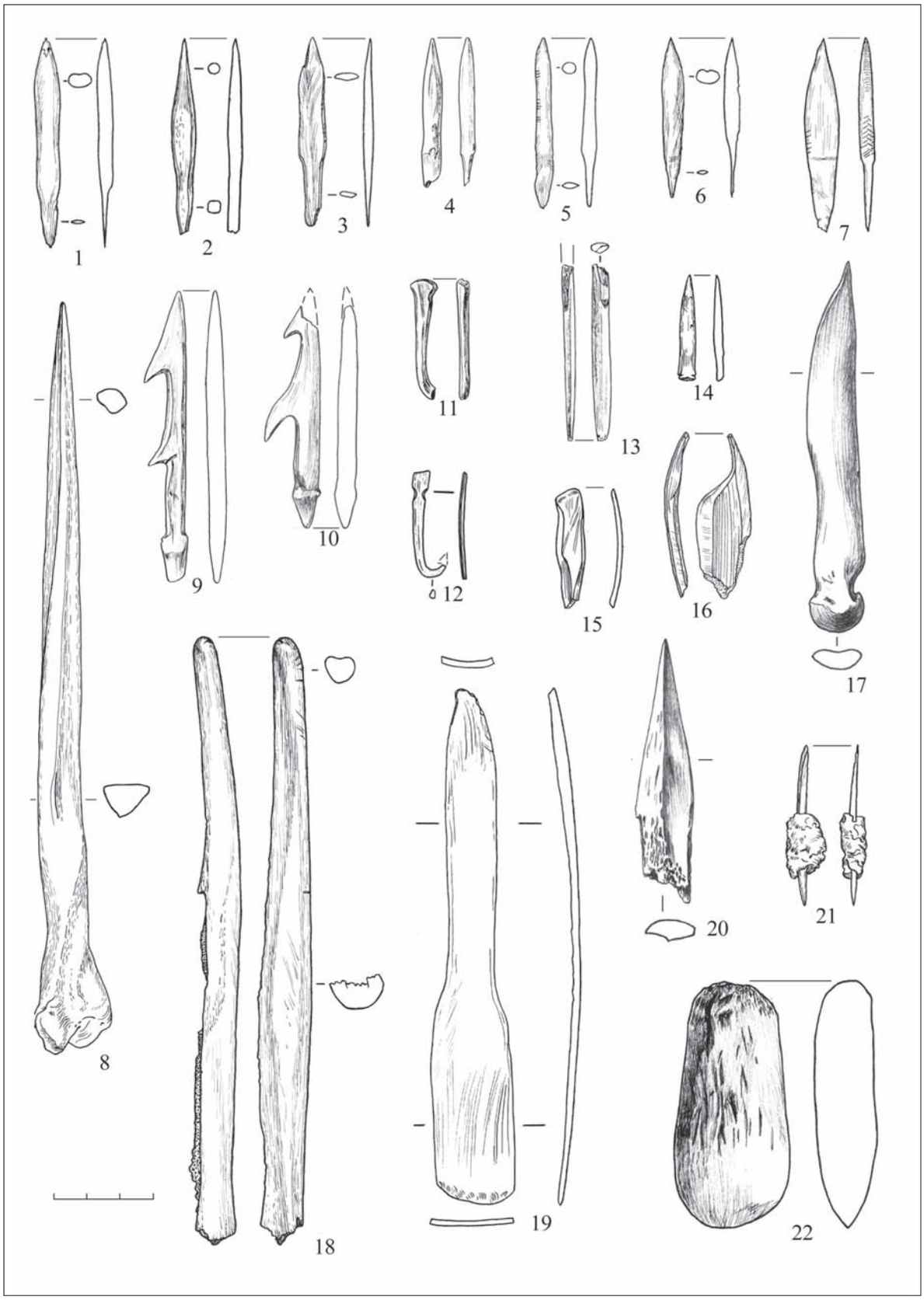

Fig. 8. Asaviec 7. Bone (1–20), antler (22) and copper (21) artefacts: 1–7, 13 arrowheads; 8 a dagger; 9, 10 harpoon heads; 11, 12 fishhooks; 14 a triangular point; 15, 16 'fish knives' made of wild boar tusks; 17, 20, 21 punches; 18 a pressure tool; 19 a palette knife; 22 an axe (drawing by M. Charniauski).

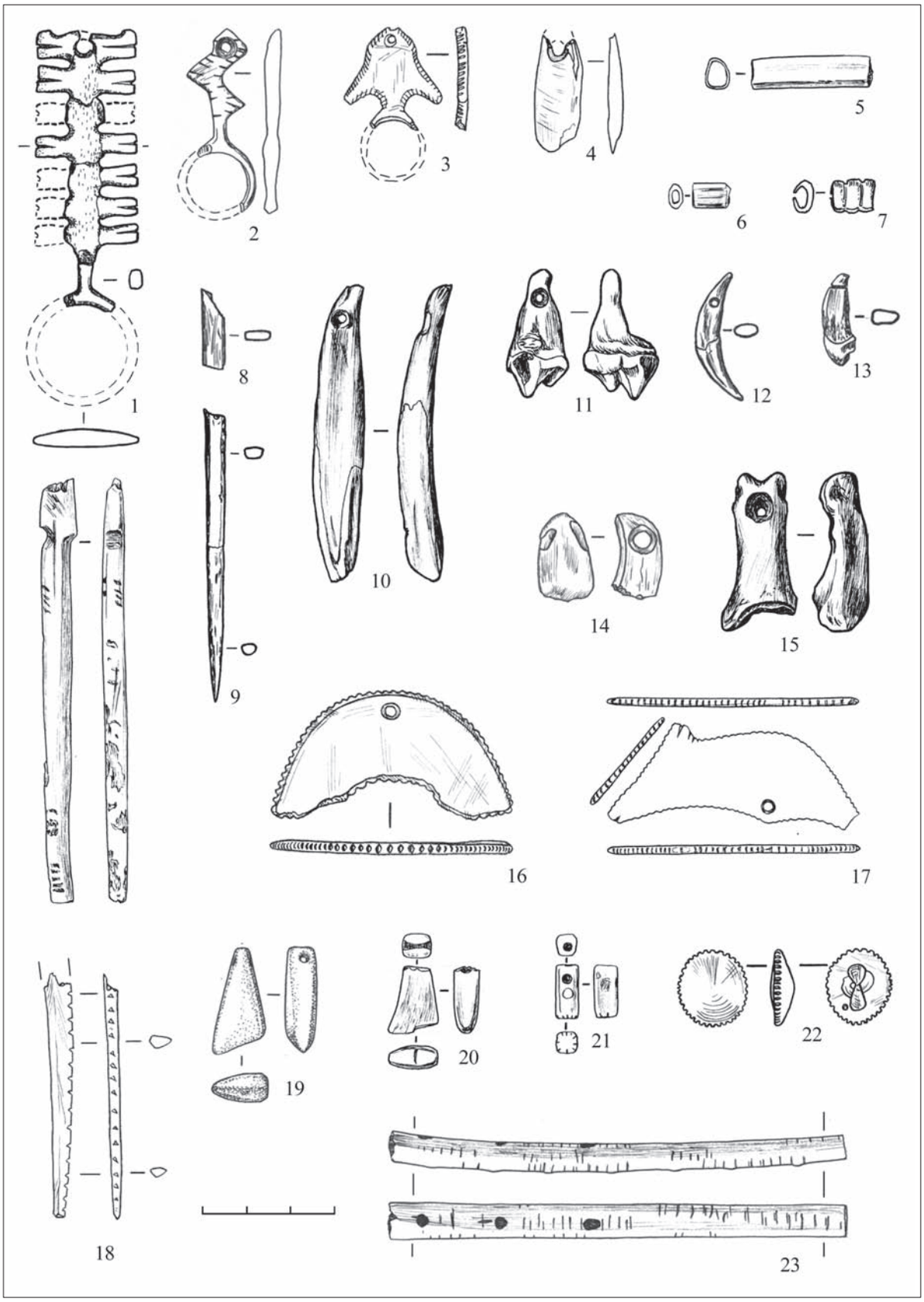

Fig. 9. Asaviec 7. Jewellery (1–22) and musical instruments (23) made of bone (2–18, 23), antler (1) and amber (19–22): 1–3 key-shaped pendants; 4 an oval shaped pendant; 5–7 beads; 8, 9, 24 pins; 10–13 tooth pendants; 14 a patellae pendant; 15 a phalange pendant; 16 a half-moon shaped pendant ('lunnica'); 17 a zoomorphic pendant; 18 a fragment of an unidentifiable item; 19–22 amber pendants; 23 a flute (drawing by M. Charniauski).

Rhomboid-like artefacts have one group of symmetrical wide arrowheads, divided into shaft and shaftless (Fig. 10.16-17).

Triangular (Fig. 10.18) and figured arrowheads make up one group each (Fig. 10.13-15).

The largest number of archetypes out of the five are leaflike and rhomboid (41 and 26 items respectively). At a group level, leaflike symmetrical shaftless and rhomboid symmetrical shaftless articles prevail.

This class of artefacts is characterised by the absolute domination of traditional local Neolithic shapes. They are almost identical to articles of Usvyatian culture that prevailed in northern Belarus in the Krivina region. Loans from other territories include the stretched rhomboid-like shaft, the triangle with an incurved base, the symmetrical rhomboid with a tapered shaft and spike, and willow-leaflike arrowheads with a short shaft. Their appearance must be connected to the Corded Ware ceramics traditions that filtered into the region from the Dnieper and Baltic regions. Figured arrowheads most likely have local origins, judging by the compact distribution of precise analogues and the small quantities of artefacts themselves. It is interesting that some flint arrowheads copy the shapes of one of the most numerous groups of bone arrowheads.

Unbroken spearheads were not found. One artefact may be identified as the work-piece of such an item, a range of small objects can also be attributed to this class. Javelin heads are larger copies of leaflike symmetrical-shaft arrowheads. They are represented by one intact and four damaged specimens.

Intact flint axes were not found at the settlement. One complete artefact is a reprocessed item of a larger one, and is a middle-sized axe with a close to lens-shaped cross-section and a blunt butt (Fig. 10.29). The body is expressively tapered in the middle. Most of the body up to the butt is polished. The blade was polished separately and more thoroughly.

Besides the above-mentioned artefact, there are five more fragments in this class. The initial quantity of polished flint axes at the settlement was much bigger. This is indicated by various small tools, as well as chips and flakes with a surface with some polished areas. All of these tell us about the secondary use of damaged axes, which was caused by a shortage of flint in the region. The number of such artefacts at the settlement amounts to ten pieces.

Chisels are represented by two types. Chisels of the first type are small and narrow, with the blade reground from both sides (Fig. 10.31); ones of the second type are made on a high massive flake, prism-like in its section, the sides of which are worked on with a sharp retouching, and the blade with a flatter one (Fig. 10.30). The retouching on the sides is with strong fractures: perhaps they were used as scrubbers. Both artefacts are found in a single copy.

Flint tools used for cutting and perforation (punches, rollers and perforators: ten artefacts) can be divided into three groups:

Group 1. Tools with a short expressed working section decorated with an opposite, rarely two-sided on one of the side walls, retouching. There are two types: sharp top and 'stack' top (Fig. 10.32). Some of the tools have an additional functional purpose, cutting or scraping.

Group 2. Tools with symmetrical pointed working sections that are worked on from both surfaces with a careful sharpening retouching. The latter does not show any visual traces of blunting or polishing because of wear.

Group 3. Tools with wide rounded working sections worked on the perimeter with a fine retouching (Fig. 10.33). The latter is strongly worn-out, its strong grounding on the side walls can be visually distinguished. Some of the items have an additional functional purpose, mainly cutting.

Scraping flint articles comprise the largest category of artefacts, of which the calculation is complicated by the existence of quite a large group of combined articles. The following groups can be identified among them:

Group 1. Square-like tools. There are three types: butt-end, butt-end one-sided, and butt-end two-sided items (Fig. 10.22).

Group 2. Tiny items with a low scraping surface located on the butt-end and both sides.

Group 3. Stretched square-like items with one butt-end scraping surface. In one case, it is high and sharp, in the other case fairly low with a fine retouching.

Group 4. Trapezoid-shaped items with a narrow base, some of which are close to triangular-shaped items. There are three types: butt-end, butt-end one-sided, and butt-end two-sided items (Fig. 10.20-22).

Group 5. Stretched items produced mainly on high flakes. There are butt-end scrapers and one side-wall scraper, the other side has from one to three scraping grooves (Fig. 10.19).

Group 6. 'Cape' type items (Fig. 10.23). In two cases, the base also has a scraping surface, which brings these items closer to being trapezoid-shaped with a butt-end two-sided scraping surface.

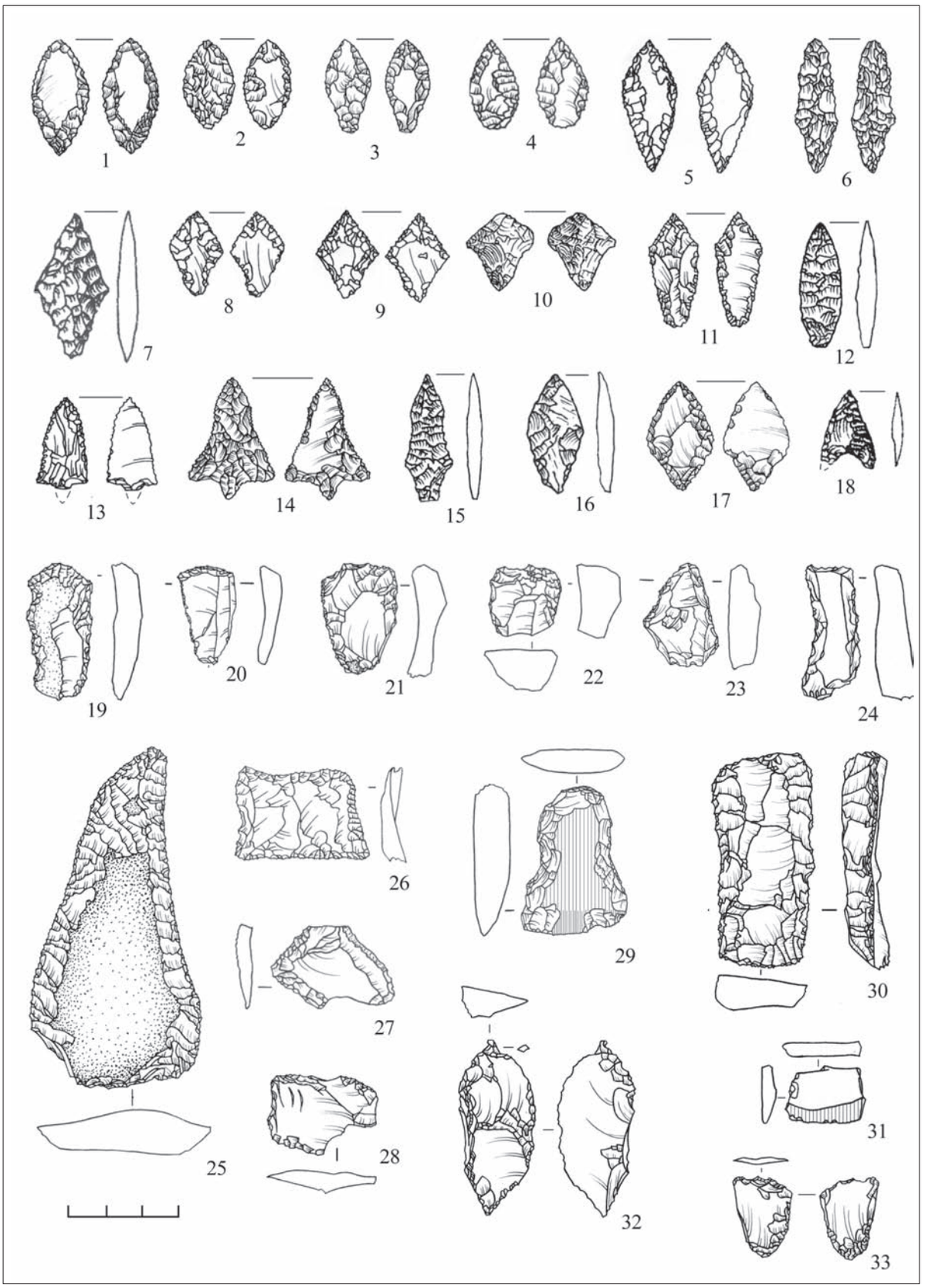

Fig. 10. Asaviec 7. Flint items: 1–18 arrowheads; 19–23 scrapers; 24 a rasping tool; 25–28 cutting tools; 29 an axe; 30, 31 chisels; 32, 33 perforators (drawing by M. Charniauski).

Group 7. Fine items of a square-like or trapezoid-like shape, with a perimeter scraping surface.

Group 8. Items with a scraping surface along the semicircular side wall. There are two types: 1) a sharp retouching goes all along the side wall; 2) only half of the side wall is retouched. In one case, there is one more small scraping area on the opposite side wall.

A number of various group scrapers should be mentioned separately. They are united by one feature, which is a short (stack-like) protuberance in one of the corners of the butt-end scraper (mainly the right corner). Only in one case is it located a little closer to the middle part. The protuberance is decorated with small scraping grooves. In all the cases, the scraping groove-like surface, as well as the stack-like protuberance, has strong traces of wear.

The next group (9) of small-sized items, in which the scraping side-walls are tapered into a conditional spike, might be for the same purpose.

Group 10. Items on slightly curved high flakes of triangular section of which the side-walls are thought to be scraping surfaces.

Group 11. Massive scrapers on chips with high lateral scrapers.

The largest group in terms of quantity is the trapezoid artefacts (group 4), next come the items in groups 5 and 8.

Rasping items, 18 pieces in total, are represented by the following groups:

Group 1. Triangular-like items with one or two rasping grooves on the larger side. In one case, one of the smaller sides also has a rasping groove.

Group 2. Artefacts on flakes and flake chips. There are the following types: one-sided, with one or several rasping notches, and two-sided items with one or several rasping notches on both sides (Fig. 10.22).

Group 3. Items on chips of various shapes with one or two rasping notches.

The above-mentioned rasping tools can also be grouped by a rasping surface work on and in the direction of the movement during the work: sharp raspers for rasping towards oneself and flatter ones for working away from oneself in a more shaving action.

Cutting artefacts can be divided into six groups:

Group 1. Pointed chipped items with two blades that converge into a spike. The retouch is flat and sharpened. In three specimens, one of the side walls has an additional retouch from the face.

Group 2. Chipped items with one side or its most projected area retouched. The other side joining it at a rather sharp angle is either blunted by a sharp retouch or has a naturally blunt surface (Fig. 10.27-28).

Group 3. A square-like, rather skew in plan item is perimeter-worked on, with sometimes a sharpening and sometimes a blunting retouch (Fig. 10.26).

Group 4. A crescent-shaped curved knife on a massive chip worked on from both sides, with a rather sharp retouch tapering into a spike (Fig. 10.25).

Group 5. Massive flake chips with a sharpening retouch on one of the side walls.

Group 6. Flakes, flake breaks and flake chips with a sharpening retouch.

Cutters are represented by two artefacts at the settlement. One of them has two cutting chips located on the opposite sides, the other has cutting chips tapering into one spike.

Such a small quantity of cutters at the settlement with large amounts of bone and antler artefacts makes us think that the bearers of Northern Belarusian culture used other tools as well to work on bones, primarily with a scraping and cutting purpose.

Retoucher: a hammer-stone on a polished axe fragment with three working sections. Two of them are located near the blade break. They were used solely for retouching, the third is located at the very top of the butt, and was designed for retouching and for chip or flake cracking off. It was found in one specimen.

On an analysis of the Asaviec 7 flint collection, the following features can be distinguished: the domination of shapes traditional of Forest Neolithic; a large percentage of artefacts with a secondary processing compared to materials from the Dnieper, Sozh and Neman regions of the same age (29% at Asaviec 7); the large quantities of chipped articles; a huge variety of shapes of tools of the same purpose; various combinations of articles; the reuse of damaged items; the quantitative predominance of scraping-rasping tools in the collection; the large quantity of arrowheads; the minimal quantity of cutters; the almost total absence of cores (the wear up to minimal sizes).

Among the stone artefacts uncovered at Asaviec 7, the polishing plates and graters should be mentioned in particular.

A unique find is a copper awl (Fig. 8.21), unearthed from the layer before the bedrock.

We should also mention the articles made of birch bark and wood. The majority of them consist of birch-bark floats for nets, one of which was decorated with pit

notches. It is interesting that pine-bark floats, which are frequent in settlements in neighbouring regions, were not uncovered.

Wooden artefacts are mainly represented by fragments of boards and oars, handles and unidentified fragments. Some of them are decorated with drawn straight lines.

The excavation area is rich in the remains of a wooden construction (more than 100 vertical and inclined poles, with an average diameter of five to eight centimetres, some reaching 25 to 30cm, and many wooden horizontal fragments). At the moment, two construction edges have been unearthed, judging by which its orientation from south-southwest to north-northeast can be determined. The only expressive wall (the southern front wall?) consists of inclined poles, ten to 17 centimetres in diameter, closely driven into the ditch and reinforced by sand and small chips.

The wooden construction corresponds remarkably in plan with the main sandy filling and the main concentration of finds.

The second most common material at the settlement after ceramics is animal, bird and fish bones. Their total quantity is almost 10,000 pieces. The animals detected are (in descending order): moose, wild boar, marten, beaver, cattle, brown bear, sheep, red deer, swine, horse, wolf, fox, squirrel, hare, wisent, dog, sable, stone-marten, marten, goat, fallow deer, rodent, otter, lynx, roe deer, Eurasian badger and pond turtle (identified by A. Razluckaia). Domestic animals make up 16%. There are many bones of birds, including aquatic birds. Fishbones and scales are represented by more than 1,200 pieces. They belong to (in descending order): pike, carp, crucian carp, perch, tench, bream, roach, sheatfish, ide (identified by E. Liashkevich).

There have been more than 7,000 small calcined bones found at the settlement, the absolute majority of which belonged to humans. The quantity of human overburned bone fragments does not exceed 200 pieces. Moreover, a partially intact skeleton with an aberrant anatomy of bone location was discovered.

Most calcined bones uncovered are small (up to 0.5 sq.cm), white fragments with close cross-fissures typical of a long high-temperature burning procedure. The majority were discovered in the layer up to 30 centimetres deep; thereafter, the quantity of them decreases dramatically. However, separate fragments have been encountered even in the pre-bedrock layer.

Some of the calcined bones belonged to animals. Sheep, pig, hare, beaver, moose and marten bones, as well as bird bones and a fish vertebra, have been identified. The total quantity is more than 30 specimens.

An anthropological study of some of the cremated bones showed them to be the remains of a woman of unidentified age and a young man (identified by L.I. Ciagaka). Several calcined fragments of a small-sized skull suggest the presence of traces of the cremation of a child.

Human bones and fragments of them not touched by fire are encountered along the whole excavation depth, and do not have any correlation.

The calcined human bones, as well as the ones untouched by fire, do not have any accompanying inventory: there are no traces of burial or other pits in the cultural layer. It seems as though they were just scattered 'underfoot' within the borders of the construction's sandy fillings. It should be mentioned that the discovered fragmented skeleton with the aberrant anatomy was found beyond this filling; however, it was not accompanied by an inventory burial pit either.

The palaeobotanical collection should also be singled out. A total of 572 units of water nut were found at the settlement. There were no undamaged fruits. The majority are represented by cores; shells or fragments of them are insignificant. Water nuts are found at zero to 50 centimetres deep in the cultural layer; lower down, the quantity is insignificant. In the plan, water chestnuts were mainly located inside the borders of the platform of the partially excavated dwelling, with the lowest quantity found in the north-south part. It is interesting that, unlike hazelnuts, the shells of water nuts did not accumulate in large quantities in the cultural layer. The stone graters unearthed at the settlement might be associated with the production of flour from water nuts.

Numerous fragments of acorns and hazelnut shells, which sometimes amount to huge concentrations, were discovered besides the water nuts.

At the moment, there are two 14C dates for the settlement of Asaviec 7: 3770±90 BP (Le-8206, bark from the pit lining with the clay paste ready for making a pot); 3870±40 BP (Le-8205, bark from the initial filling of the dwelling floor). The gauging of the dates given shows an average of 3,000 BC.

A time for the extinction of the settlement cannot be precisely stated yet, because all of its upper layers were destroyed during a fire. However, it is likely to be similar to that of Asaviec 2, the middle of the second millennium BC, when there was another transgression which resulted in the settlements being covered by water.

Judging by the ceramics, bone and flint complexes of the settlement, as well as by the position of the settlement on the peat palaeolake shore, it is possible to attribute it definitely to Northern Belarusian culture.

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Santrauka

Asaviec II ir Asaviec VII gyvenvietėse aptiktos radinių kolekcijos yra neįkainojamos vertės, lyginant su kitais Baltarusijos teritorijoje archeologiniuose paminkluose aptinkamais radiniais. Šių paminklų tyrinėjimų metu aptikta medžiaga atskleidžia vietinių bendruomenių raidą nuo IV iki II tūkst. pr. Kr. Pastarųjų gyvenviečių populiacijos ištakose glūdi ankstyvosios Narvos bendruomenių kultūra. Vidurinio neolito kultūros raida yra susijusi su Usviatų kultūra, kuri egzistavo vėlyvajame neolite ir ankstyvosios bronzos pradžioje Šiaurės Baltarusijoje. Šios kultūros patyrė nemažą kaimyninių kultūrų įtaką. Svarbų impulsą vietinėms Narvos kultūros bendruomenėms viduriniame neolite turėjo šukinės duobelinės keramikos kultūra, įgalinusi Narvos kultūrą transformuotis į Usviatų kultūrą. Vėliau šios bendruomenės vėlyvajame neolite patyrė rutulinių amforų ir Virvelinės keramikos kultūrų poveikį, kurios Šiaurės Baltarusijos regioną pasiekė joms migruojant iš Dniepro aukštupio. Dėl šių kultūrų įtakos susiformavo Šiaurės Baltarusijos kultūra. Gamtiniai pokyčiai lėmė, kad II tūkst. pr. Kr. viduryje, pakilus Krivinos ežero baseine vandens lygiui, šios bendruomenės, gyvenusios Asaviec II ir Asaviec VII gyvenvietėse, iš regiono pasitraukė ir durpyninių gyvenviečių egzistavimas šiame ežero regione baigėsi.

Vertė Algirdas Girininkas