

# TUBULAR AMBER BEADS FROM THE NEOLITHIC SETTLEMENT AT ZVIDZE IN THE LAKE LUBĀNS WETLANDS

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### Abstract

This paper discusses the most important ancient amber tubular beads from the Zvidze settlement in the Lake Lubāns wetlands, and their analogies in the forest zone of Eastern Europe. Special attention is paid to specific forms of amber bead: cylindrical, beads with a thickening in the middle part, rounded, arched diamond-shaped and other archaic beads, long and short barrel-type, spool-type, beads with oval pinched cross-cuts, and spherical beads.

Analogies of amplified amber beads (with a thickening in the middle) have been found in the very wide area of the forest zone of Eastern Europe (Konchanskoe, Repistche, Tuzozero, and so on). A review of the Zvidze tubular amber beads allows us to consider that some bead types (barrel-shaped, spherical, diamond-shaped) are more widespread in the ancient world.

Key words: Zvidze settlement, Neolithic, amber, tubular beads, distribution, analogies.

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### Introduction

Research into ancient beads is a special branch of the science of archaeology, which is also called bead archaeology. The history of the production of beads has to be looked at from a range of a thousand years in length, when beads were produced from the widest range of materials. It is difficult in a monograph to cover just one specific type of the enormous multi-faceted character of beads which bead archaeology specialists encounter when trying to classify them, not only in time but also in space. With the expansion of archaeological research, more and more specialists have to learn the history of bead making also in a regional context, emphasising the specifics of bead manufacturing in various separate regions across Europe and on other continents.

One of the blank pages in the history of bead research is amber, notably its recognition in the global context of beads made from *succinate*. Amber beads really can compete from a historical point of view with ancient bead types made from agate and other materials, but they are not popularised or emphasised in the general context of bead research. Therefore, it is also our task in this paper to point out the origin of amber beads from a prehistoric point of view, basing it on research of archaeological objects from one specific region.

In east Baltic archaeology, the wetlands of Lake Lubāns are widely known as such a region, archaeological research into which already in the latter half of the last century made it possible to identify the begin-

nings of amber bead processing linked to the acquisition of Neolithic amber processing skills (Fig. 1). The Neolithic age is precisely the one that facilitated the rapid acquisition of local materials also in the eastern Baltic, where amber, regardless of the distance from its washout areas on the shores of the Littorina Sea, and the beads made from it gained a fixed value status.

The amber beads from the archaeological excavations of the Lake Lubāns wetlands found in ancient amber processing workshops belong to the archaic-type beads. The materials obtained from archaeological excavations of the Middle Neolithic amber processing workshop in the settlement of Zvidze point to which types these beads belong to (Loze 2001, p.126ff; 2008, p.51ff).

### Beads in the amber processing workshops at Zvidze

In the old amber processing workshop in the Middle Neolithic settlement at Zvidze, the work was mainly focussed on manufacturing tubular beads (Fig. 2; Plate I: 1-12). Previously recorded data about this workshop already points to this, where the bead preparation kits and pieces of them represent 57.9% of the total number of bead preparation kits made in the workshop (Loze 1999, pp.131-132, Fig. 2; 2003, p.85). As this data reflects not only the preparation kits that could be used for further manufacture, but also the broken ones which were proven to be useless, then this publication

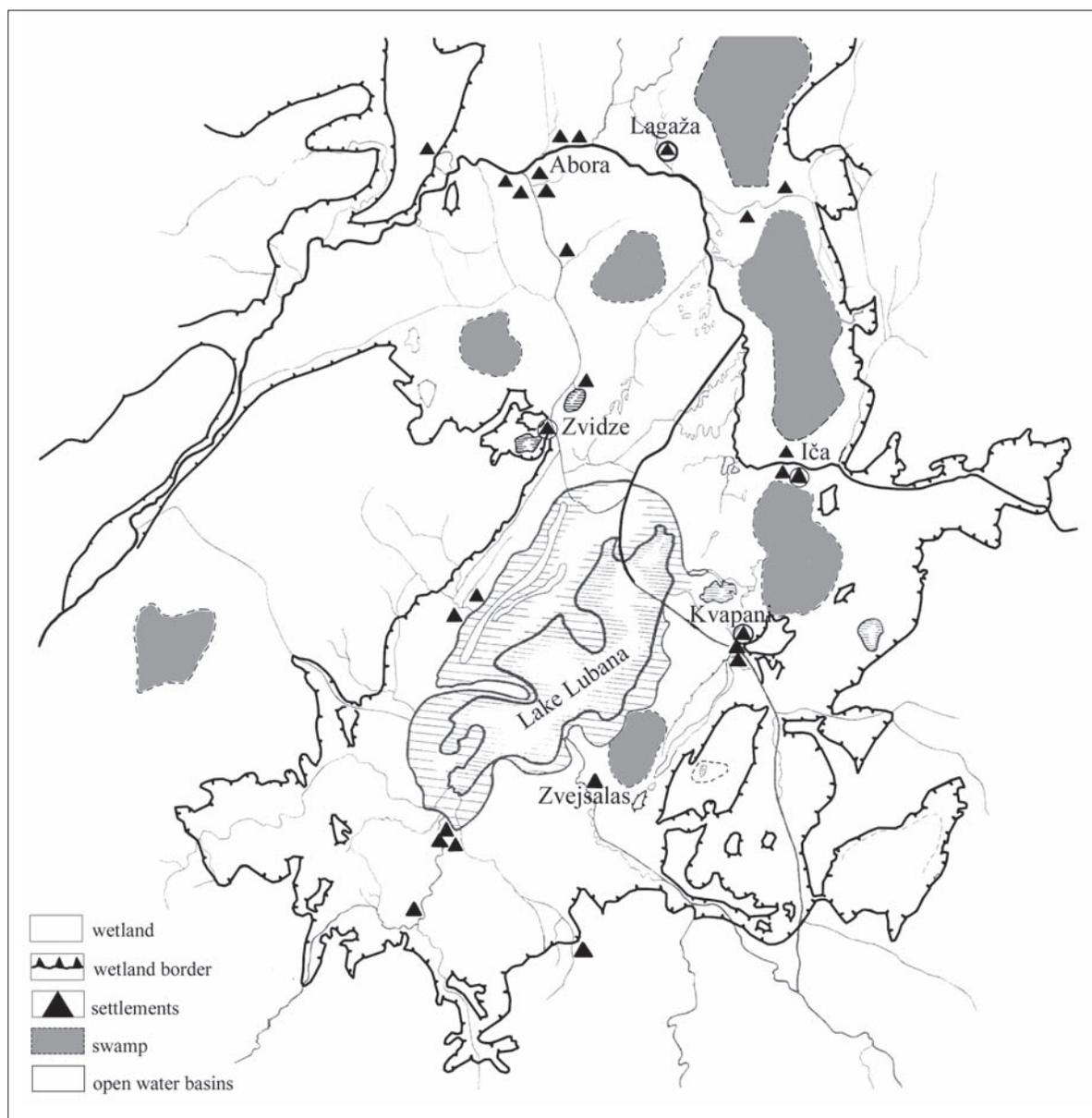


Fig.1. A map of the most important Neolithic settlements in the Lake Lubāns wetlands. (map by I. B. Loze).

should pay attention to the proportional relationship between broken and whole preparation kits.

If we look at the different types of manufactured beads, tubular beads do not exceed the other categories of amber goods, and therefore cannot be added to the chiefly used jewellery in this settlement. At least 20 tubular beads are needed to form a good bead string. Obviously, the large amount of broken preparation kits is linked to technical difficulties that the young amber processors encountered while acquiring the skills to process tubular beads.

Tubular beads are classified as cylindrical, and are also classified in other bead groups, which differ considerably in their modelling, while at the same time retaining a straight axis for the hole through the body of the bead.

### Cylindrical beads

In order to learn more about the manufacture of tubular amber beads and their meaning in the context of research into Middle Neolithic amber goods in the Lake Lubāns wetlands, first cylindrical beads should be viewed.

The examples of one group of cylindrical beads, judging from all the examples which have been found in the site of the amber processing workshop at Zvidze, are 1.2 to 2.05 centimetres long, and their diameters are 0.55 to 0.6 centimetres. To manufacture longer beads, the holes were created by drilling from both ends. Especially short examples of cylindrical beads can be found, which then form a short bead group.

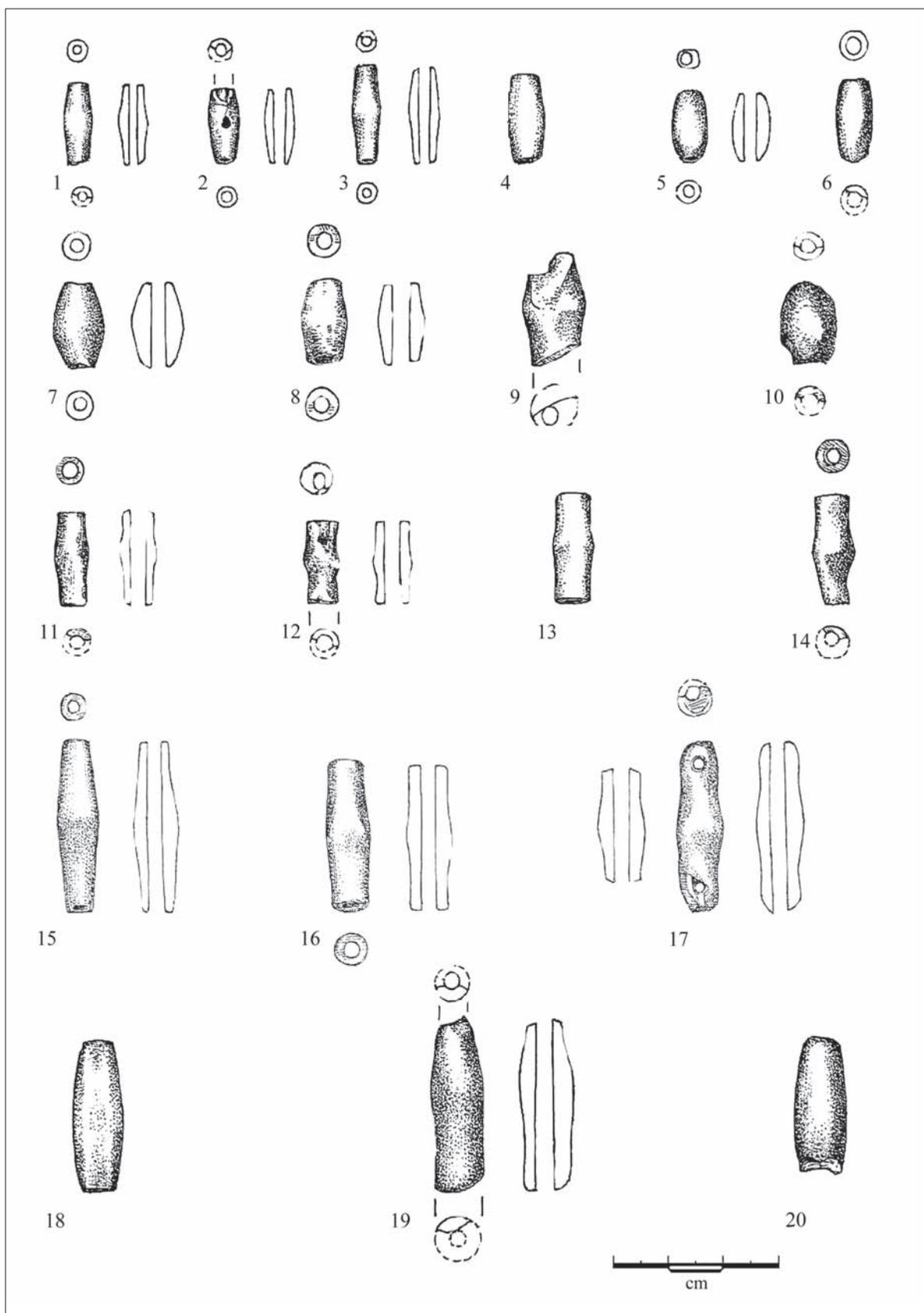
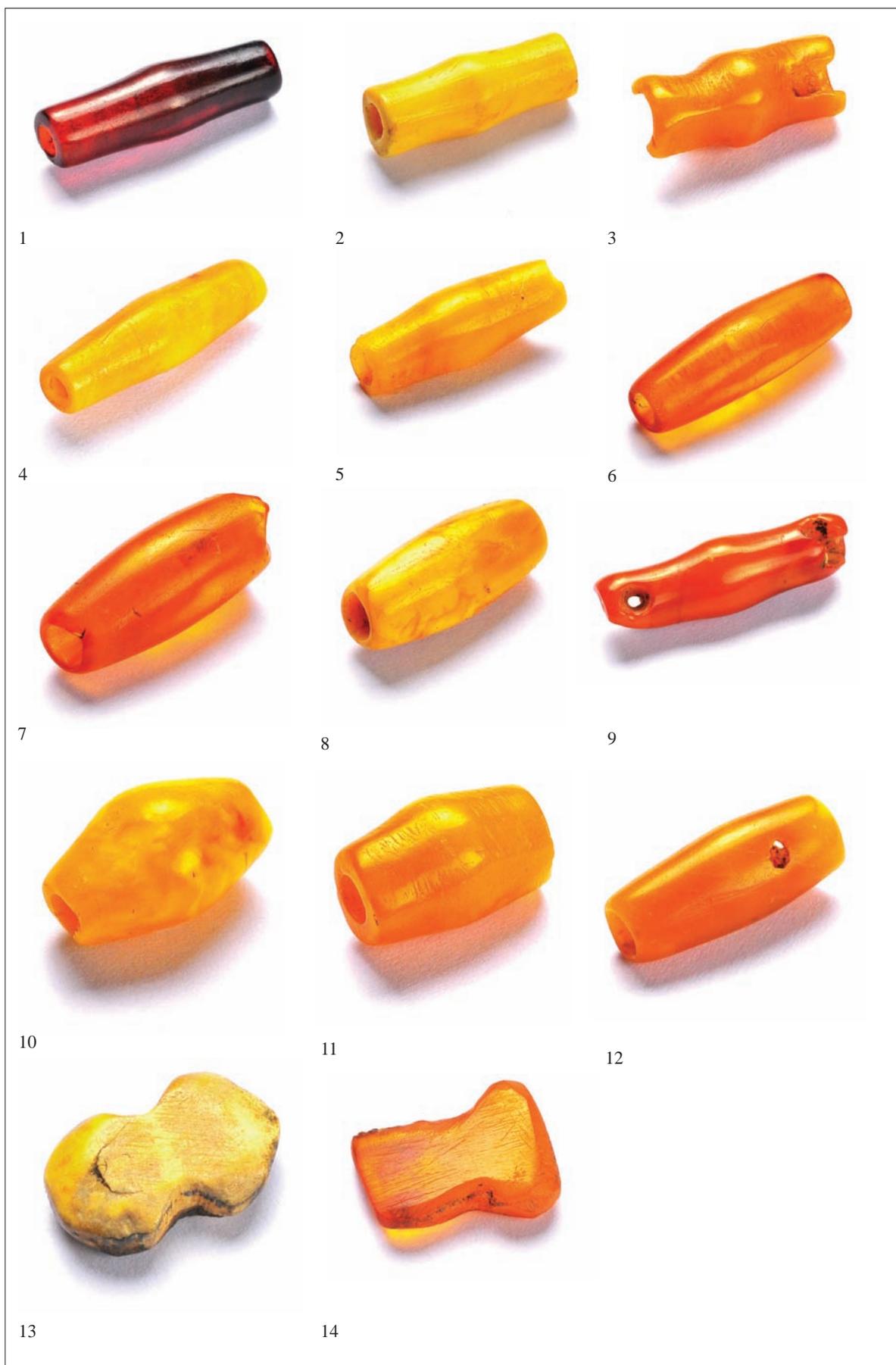


Fig. 2. Different-shaped tubular amber beads found at the Zvidze Neolithic settlement in the Lake Lubāns wetlands (LNHM Department of Archaeology, inv. nos. 188; 1- 5 (2264, 2397, 2179, 2178, 2317); 6-10 (1041, 2362, 2307, 601, 866); 11- 15 (1316, 729, 2187, 654, 2163); 16- 20 (670, 774, 2326, 1697, 2458) (drawings by Aiga Ivbule).



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Plate I. Amber beads from the Zvidze Neolithic settlement in the Lake Lubāns wetlands (Latvian National History Museum, Department of Archaeology, inv. nos. 188: 670, 2187, 729, 2179, 2177, 2326, 2458, 2178, 774, 2362, 2307, 2397, 2050, 850).

Short beads could have been manufactured by using the remains of long bead work pieces that had broken through the transverse axis.

These preparation kits have survived in both a whole and a fragmented state. One bead, completely microscopic, 0.36 centimetres thick, and with a diameter of 0.45 centimetres, should be noted, as it was quite skilfully processed (LNHM AR inv. no. 188: 2370).

The other group of cylindrical beads in the ancient amber processing workshop in the Lake Lubāns wetlands is made up of specially small and fragile examples, the diameter of which does not exceed 0.4 centimetres. Transparent amber, or amber where the transparent part interchanges with matted, yellow tones, was used in the manufacture of these beads.

If the examples from the first group of beads from the ancient amber processing workshops have a border around the drill hole that is quite thick, then beads from the second group have a very thin border, which makes them fragile and less durable, but also much more refined and more beautiful.

Information regarding the quality of the drill hole in these beads is gathered from examples that broke along the longitudinal axis, because in these cases the drill hole is visible along the entire length of the bead. Work pieces which broke along the transverse axis could still be used in the decoration of the next bead.

The diameters of the drill holes in cylindrical beads in the workshop in the Zvidze settlement vary from 0.2 to 0.25 centimetres. The width of the drill hole belt is greater in beads that broke along the longitudinal axis, in comparison to the walls, which is visible in the cross-section of the beads. In addition, beads that broke along the longitudinal axis show not only the width of the drill hole, but also the thickness of the walls of the bead. These can be of an identical thickness, which points to the fact that the drilling in the bead was done perfectly; or, in other examples, they show an imbalance of the bead wall's thickness. The latter characteristic in separate cases provides evidence of the use of a flint drill that was too thick to make a hole in a delicate bead.

The makers of delicate and fragile beads in the Lake Lubāns wetlands were particularly adept in the technique of drilling, because looking at these broken examples, it can be seen that the drill hole belt in the longitudinal section of the bead is wider than both of the walls put together. That would be the reason why the bead broke after wear.

There is a record of a bead with two drill holes down its entire length (LNHM AR, inv. no. 188: 1232). As it

broke through the longitudinal axis, then its entire longitudinal section is visible, and it can be seen that an almost microscopic partitioning wall was left between the two drill holes. This points to the use of an excellent drilling technique, which a beginner in amber processing would not have been able to do. Nevertheless, the result was the same: the bead broke.

### Beads with a thickening in the middle

Beads with a thickening in the middle are different from cylindrical beads (Fig. 2: 11-16. Plate I: 1-3). Some have a sharp thickening, in others the thickening occurs gradually. The first type of bead with a sharp thickening in the middle, six in total, are the handiwork of two different amber processing craftsmen.

The first four beads (LNHM AR, inv. nos. 188: 654, 729, 1316, 2187) are short, with a sharp thickening in the middle: one, four to 1.95 centimetres long. The diameter of their ends is 0.55 to 0.65 centimetres. The diameter of the thicker part is 0.05 to 1.5 millimetres thicker than the diameter of the end.

The maker of these beads in the amber processing workshop in Zvidze made the drill holes with a thin drill, which allowed for quite thick edges on the sides of the drill hole on one side of the bead. However, in all four cases, the walls of these beads broke at one end of the bead, while the border of the other end of the bead remained intact. If we look at the breakage points, then it is possible to see that in the thinnest part of the bead, at the end of the bead, the border of the drill hole is much narrower than the width of the borders of other parts of the bead. The breaks occurred during the process of drilling through the bead, or while wearing the beads.

Two beads with a thickening in the middle were made more carefully (Fig. 2: 11-13; Plate I: 1-3). Both of these beads differ in their completely skilful finish: while inspecting them, it became obvious that the width of the border of the drill hole at one end of the bead is not ideal (LNHM AR, inv. no. 188: 2187); however, at the other, it is very close (LNHM AR inv. no. 188: 1316). In this case also, the colour of the amber was chosen carefully. Amber the colour of bone was used for one of the beads; however, the other bead was made using bright yellow, pale amber. It is significant that this kind of amber was used in making other successfully crafted beads (LNHM AR, inv. nos. 188: 2179, 2362). For the second example, dark, reddish transparent amber was used. This shows the wish of Middle Neolithic amber craftsmen to look for and select the most appropriate amber colours for their beads, in accordance with what was most favoured at the time.

## Beads with a gradual flexible amplification in the middle

Beads with a gradual flexible amplification in the middle are represented by two rather fine and three long examples (Fig. 2: 1-6, 11, 15-17, 19-20; Plate I: 4-9). Two of these beads have been broken: one example was broken along the transverse axis, and the other along both axes.

One of these beads in the settlement of Zvidze is represented by a perfectly processed example. It is characterised by its remarkable symmetry and its slim body, and the borders of the drill hole have identical diameters, which was achieved by using quite a thin drill (LNHM AR, inv. no. 188: 2163). Also, this bead is the work of the previously mentioned amber craftsman from the settlement of Zvidze.

Quality work can also be observed in the long bead with its partially wrapped ends (Fig. 2: 19). The middle part of the bead is only slightly amplified, by a couple of millimetres. Two other beads of this type are miniatures. Both have one damaged end. One has a chip at its end (LNHM AR no. 188: 2264).

Amber beads of this type from the amber processing workshop in Zvidze, taking into account their slim bodies and the observation of classic length and diameter proportions, can compete with gold and cornelian beads in ancient societies.

The example found in the site of the Zvidze settlement's amber workshop that had been broken along the longitudinal axis and had been wrapped at both ends (LNHM AR, inv. no. 188: 650) provides evidence of how hard it was to process this type of bead. The bead also has two long drill holes: one of them was made by a thicker drill half way through the bead, and the other was made by a thinner drill until it reached both wrapped ends. The wall between both drill holes is minimally thick. The flexibly created amplification, which is particularly expressive in the middle, should be taken into account.

One peculiar example can also be added to this type of bead; the bead is stumper than the previously ones viewed; however, it differs in the decoration of its ends (Fig. 2: 17; Plate I: 9). This example was in long-term use, hence it has been polished to a shine. It is possible that the bead developed especially thin edges around the ends of the drill hole during the boring process. They broke off, as can be seen in the attached image. Therefore, to save the bead, two additional frontal drill holes were made through the thin wall in its opposite ends. String could be threaded through both ends separately, and also through the whole bead. This bead could also have been used as a middle divider on a double string of beads.

Beads with an amplified middle in the forest zone of Eastern Europe

It should be noted that beads with an amplified middle are a very common feature of beads found in Neolithic burial ground complexes in the basin of the upper reaches of the River Volga (Zimina 2004, table on p.328). These beads are much larger in size and more robust, as well as being simpler in their design.

They were found in the burial grounds at Konchanskoe, which is located on the northern shores of Lake Sheregodro, 150 kilometres southeast of Novgorod, in the basin of the River Msta, which is a tributary of the upper reaches of the River Volga (Zimina 2001, p.145). In total, 267 graves were found in this Neolithic burial ground. In the inventory of grave 232, among 242 amber goods, there were ten beads with a sharp thickening of their middles (Zimina 2001, Fig. 5). They also appear among the goods of other graves (graves 38, 191) (Zimina 2003, p.154; Figs. 19, 20). These beads are also found in the inventory of grave 97 in the other burial ground found in this region, which is located 50 kilometres to the east in Repistche (Zimina 1993, p.218; Fig. 60: 16).

Also in the region between the rivers Volga-Oka and Klyazma, in the basin of the right bank of the River Volga, where eight Sakhtysh settlements and burial grounds are located on the banks of the River Koika, 14 examples of beads were found (Kostyleva, Utkin 2000b, p.177). In grave 9 of the burial ground of the Sakhtysh IIA settlement, which has been given the time period of 4400±60 (LE-1427) years BC, seven beads of 3.5 to four and eight centimetres in length were discovered.

Furthermore, such beads were also obtained in the basin of the Medvedica tributary on the left bank of the Volga in the Jazikovo I burial ground (Sidorov 1992, Fig. 25: 42-44). It is noteworthy that the inventory of the radiocarbon-dated Middle Neolithic grave 17 consisted of 70 amber goods. The beads belonging to it, just like the ones found in the Konchanskoe and Repistche burial grounds, are 4.5 to 5.1 centimetres long. Grave 96, with one long bead of this type, was found in one complex with three large trapezoid pendants (Zimina 1993, Figs. 17-19).

Beads of this type were found in the inventory of grave 5 of the Tuzozero VI burial ground on the southeast shore of Lake Onega, in the vicinity of the sandy zone between this lake and Lake Tuzozero (Ivanishch 1996, Fig. 33). These latter types of beads, with a thickening in their middle part, are just as long as the previously mentioned ones (Ivanishch 1997, Fig. 14:3).

The finds of beads shown here appear in closed burial ground complexes in the East European forest zones

Table 1. Zvidze settlement radiocarbon dating

Laboratory Index	Radioactive Age	Calibrated Age BC	Climate Period
TA - 675	4370±80	3100-2890 68.2%	Sb <sub>2</sub>
TA - 674	4540±60	3380-3080 95.4%	Sb <sub>2</sub>
TA - 1802	4430±50	3320-3230 68.2%	Sb <sub>2</sub>
TA - 2033	4580±89	3300-3260 68.2%	
TA - 1801	4750±60	3640-3510 68.2%	Sb <sub>1</sub>
TA - 1800	5320±50	4240-4150 68.2%	At <sub>1</sub>

TA – Tartu Laboratory at the University of Tartu, Estonia

together with trapezoid pendants (Repistche, Sakhtysh IIA, Tuzozero), round button-like beads (Jazikovo I, Konchanskoe, Sakhtysh IIA), square button-like beads (Konchanskoe, Sakhtysh IIA), cylindrical beads (Sakhtysh IIA), rings (Konchanskoe, Sakhtysh IIA), discs (Sakhtysh IIA, Tuzozero), and decorative pendants with special holes under the normal pendant's frontal drill hole (Konchanskoe), and even with characteristically Neolithic special artefacts – rings with an intentional rod-like extension on their top side, where a frontal drill hole would have been made in order to hang it (Konchanskoe, Tuzozero).

These larger and more robustly manufactured beads with amplified middle parts most likely came from some other Neolithic amber manufacturing workshop, which was located closer to the shores of the Littorina Sea, and which had enough large pieces of amber available. That, of course, is neither Sārnate nor Šventoji amber manufacturing workshop, because no beads with these kinds of sharp amplified middle parts were found there.

Because in the Konchanskoe and Repistche Neolithic burial grounds inventories have turned up ornament types that are not characteristic of either Sārnate or Šventoji amber manufacturing and processing workshops, taking into account the large amount of amber goods found in both burial grounds, it is believed that there was most likely another, still undiscovered, amber manufacturing centre located not too far away (Zimina 2004, p.330).

#### Rounded, arched, diamond-shaped and other archaic-type beads

Some archaic-type beads in the ancient world were rounded, arched, diamond-shaped beads with a lenticular section. This is why the beads found in amber

manufacturing workshops in the Lake Lubāns wetlands do not invoke surprise, but awe.

#### Short barrel-type beads

This type of bead in the Zvidze settlement's amber manufacturing workshop was created from the previously mentioned pale amber (Fig. 1: 7; Plate I: 10). The bead is especially noteworthy, not only because it was created by a highly skilled amber specialist, but also because it is one of the most ancient beads of this type in the northern hemisphere. It can be considered that, from a cultural-historical heritage perspective, its importance puts it on a par with the most important Lubāns wetland archaeological findings.

The third bead under examination is stumpy, although technically successfully manufactured. Both of its ends have thick borders to their drill holes, with a perceptible thickening of the middle part. The bi-conic shape is not developed, even though its middle part is thickened. The bead is a little asymmetrical: one of its sides is rounded; however, the other has a bi-conic curve (LNHM AR, inv. no. 188: 2307). It can still be called a low and wide barrel-type bead.

A bead of the exact same ancient type has been found at Evijärve, Lahdenkylä in Finland, in a settlement among typical Comb ceramics (Miettinen 1983, p.89).

An amber bead find similar to the previously displayed third bead has also been located in the inventory of grave 5 from the Neolithic burial ground at Tuzozero, on the southeast coast of Lake Onega (Ivanishch 1996, p.21; Fig. 15:30). It was found there together with long tubular beads with amplified middle parts, and other amber goods. The graphic image of the latter bead in the mentioned publication recalls the bi-conic bead with a break in the middle.

The fourth honey-yellow amber bead is an excellent example of an ancient bead, which essentially is close to the short, truncated-tip, bi-conic shape (Fig. 2: 7-9; Plate I: 11). However, an unfortunate drill hole befell the bead: while drilling, the bead's wall broke, and also both ends have been truncated, even though after the break, they were made stronger by filing (LNHM AR, inv. no. 188: 601). Despite this, the bead was still worn. It could have been envisaged for clothing, and in this way demonstrated its refined decoration. In any case, it was of itself already a luxury item. This type of bead is called a short, truncated bi-cone (Dubin 2006, p.342).

### Long barrel-type beads

Barrel-type beads also belong to the archaic bead types of the ancient world. Barrel-type beads in the Zvidze amber manufacturing workshops are represented by two long and five small and fragile examples. Especially noteworthy is the perfectly worked 3.7-centimetre-long bead, which was made from transparent amber. The bead has a very thin border of the drill hole at its ends. It even seems that the drill hole was made from just one end. It stretches like a straight belt through the whole bead (LNHM AR, inv. no. 188: 2326) (Plate I: 6).

The other 3.2-centimetre-long bead, which has one damaged end, is also manufactured from transparent amber. This bead had its drill hole made from both ends (LNHM AR, inv. no. 118: 2458) (Plate I: 7). The drill holes almost do not meet exactly, although the bead is perfectly fine. The transparency of the bead is excellent.

The small barrel-type beads are 1.2 to 1.5 centimetres long, and their diameter is 0.6 to 0.7 centimetres. These beads are of two kinds. One has a very sharply pronounced barrel shape. The others have a more elongated shape.

Long barrel-type beads are characteristic of the Middle Neolithic amber workshops from Sārnate settlements, which in archaeological literature feature as the second home of Comb ceramics (Vankina 1970, p.78). They were found together with disc-like and cylindrical beads and trapezoidal pendants (Bērziņš 2008, Fig. 22: 3, 4).

Long barrel-type beads have also been found in the sixth settlement; furthermore, in addition to, and perpendicularly against, the long drill hole, one of them has a drill hole through the middle of the bead from the side. It connects with the bead's long drill hole, which points to the special usage of this bead (Rimantienė 2001, Figs. 4: 24; 5: 4).

Two excellent examples of short barrel-shaped beads have been found in the inventory of grave 277 in the Zvejnieki burial ground (Zagorska 2006, p.102). The radiocarbon data of this grave 5545 +65 NP (UA-19810) is older than the data of the Zvidze settlement beads.

### Spool-type bead

The preparation kit for the spool-type bead without tiny frontal holes, which was found in the Middle Neolithic growth layer in the Zvidze settlement (LNHM AR, inv. no. 188:579), could be considered quite unusual (Loze 2003, Fig. 3:1).

### Beads with oval pinched cross-cuts

Three beads with oval pinched cross-cuts were also found in the Zvidze settlement, the manufacturing style of which is similar to south Scandinavian and north German beads of this type and their manufacturing techniques (LNHM AR, 188: 620, 850, 2050). These three beads are noteworthy (Loze 1988, Table XLII: 3; Loze 2003, Fig. 3: 3, 9). Two of them have been published (Plate I: 14).

These beads are characteristic of Danish and north German Funnel Beaker culture, research into which has categorised them as belonging to C type (Ebbesen 1995, p.37).

### Spherical beads

A semi-manufactured spherical bead was also found in the amber manufacturing workshop at Nainiekste (Loze 2008, Fig. 14:64). This is not the first time such a find was made, because a whole spherical bead was also obtained in the Suļka settlement (Loze 2008, Fig. 6:10).

The age of beads from the Zvidze amber workshop

The age of the beads from the Zvidze settlement's amber workshop is determined by their stratigraphic location in the growth layer, which is dated with the help of radiocarbon dating.

Taking into account the above example of <sup>14</sup>C dating and the find circumstances of the respective beads, we can conclude that of these special bead types, the oldest are the rounded, curved, diamond-shaped bead, the stumpy, short, fragile, barrel-type bead, and the perfectly worked long, barrel-type bead (for images of the beads, see Fig. 2 and Plate I). They were found by uncovering the deepest, absolutely undisturbed Middle Neolithic cultural layers which typical Comb ceramics

belong to, which corresponds to uncovering the eighth horizon of the cultural layer. However, the second long, barrel-type bead was found in the same square even, but in horizon nine of the cultural layer, together with the fragile, barrel-type bead. These beads might have been manufactured between 3600/3500 and 3300/3200 BC (TA – 1801 and 2033). However, the beads with a thickening in the middle can be attributed to the second, later habitation period of the settlement, with a time interval of 4580 to 4370 years BC (TA – 2033, 1802, 674 and 675).

Zvidze amber tubular beads in the context of ancient bead research

The manufacture of beads in the Zvidze settlement's amber workshop did not reach the level of industry, of course, because amber was not available in unlimited quantities. It was exchanged for beaver, marten and other animal furs from the shores of the Littorina Sea. Nevertheless, the examples of amber beads from the Zvidze amber manufacturing workshop that we have looked at fit the standards of the best bead manufacturing. This means that bead manufacturing could have been expanded in this direction, creating highly valuable products, which as prestige objects did not remain in the settlement for too long, but instead travelled in the desired direction.

The tubular beads from the Zvidze settlement, the ancient age of which can be determined by the radiocarbon dating of the different horizons of the cultural layers, are indeed part of the east Baltic region's most ancient beads.

Similar-shaped beads (cylinders, barrels, spheres and diamond-shaped beads) produced from different materials, various stones and semi-precious stones, seashells, bone, and so on, were familiar to the people of the Near East, Egypt, and other places in the ancient world (for this, see Griffin 1978; *Mesopotamia: the Mighty Kings. Lost Civilization* 1995; Dubin 2006; Kanungo *et al.* 2007). However, the phenomena of similarities in bead shapes might be studied in more detail.

## Conclusions

The amber bead collection from the Lake Lubāns wetlands which has been obtained during six archaeological excavation seasons of the Middle Neolithic amber processing workshops in Zvidze, provides information about the most ancient processing of beads in the east Baltic region. The bead types are divided into long and short barrel-type beads, beads with a sharp or smooth thickening in the middle part, beads with a rounded, diamond-shaped configuration, and spherical beads, which belong to the most widespread archaic bead types in the ancient world.

The origins of the creation and processing of the beads that have been found and recorded, taking into account the safely dated bead type, the stumpy barrel-type bead from both the Zvidze amber workshop and the coast of Lake Evijärvi in Finland, can be securely attributed to the time of the creation of typical Comb culture ceramics.

In the 1960s and 1970s, a previously unfamiliar, strange tubular bead type, with a sharp or smooth transition to the thickening of the middle part, was noted, of which both short and quite long examples were made in the Lubāns wetlands, and which is unknown anywhere else in the ancient world. Beads such as these do not have analogies in the Neolithic burial grounds of the forest zone of Eastern Europe either, where very long tubular beads with a sharp thickening in the middle were found. This points towards another amber processing workshop operating successfully on the shores of the Littorina Sea that was rich in wash-outs, which provided the area with material to make especially long beads.

This area was possibly located to the south of the amber processing workshop in Sārnate. The amber discs with rod-like extensions on their top side, at the ends of which frontal drill holes were made, that were found in both the Konchanskoe and Tuzozero burial grounds, all point towards this. These were typical creations of the amber processors from the Curonian Spit, as well as the Daktariškė 5 Neolithic settlements that have been studied in Lithuanian territory, located only 40 kilometres from the shores of the Littorina Sea (Butrimas 2001, Figs. 4: 16; 11: 2).

The amber beads with oval pinched cross-cuts that are typical in north German and Danish Funnel Beaker culture amber collections, which were found in the amber workshops of the Zvidze settlement, are considered exotic.

The idea has formed that there might have existed another, still unknown amber processing centre, the location of which has not yet been identified, either on the shores of the Littorina Sea, or in the region not far from Konchanskoe or the Repistche Neolithic burial grounds.

## Abbreviations

Acta Academiae Artium Vilnensis, 22 – Acta Academiae Artium Vilnensis 22/Lietuvos dailės akademijos darbai 22. Baltic Amber. Proceedings of the International Interdisciplinary Conference: Baltic Amber in Natural Sciences, Archaeology and Applied Arts 13–18 September 2001, Vilnius, Palanga, Nida. Adomas Butrimas, ed. (Vilnius, from 1993).

LNHM AR – Latvian National History Museum, Archaeology Department, Riga

## References

### Literature

- BĒRZIŅŠ, V., 2008. *Sārņate: living by a coastal Lake during the East Baltic Neolith*. Oulun Yliopisto. Oulu.
- BUTRIMAS, A., 2001. The Amber collection from Daktariškē 5 Neolithic settlement. *Acta Academiae Artium Vilnensis*, 22, 7-19.
- DUBIN, L.S., 2006. *The History of Beads from 30.000 B.C. to the Present*. Thames and Hudson.
- EBBESSEN, K., 1995. Die nordischen Bernsteinhorde der Trichterbecherkultur. *Praehistorische Zeitschrift*, 70, 1, 32-89.
- GRIFFIN, J.B., 1978. The Midlands and Northeastern United States. In: J.D. JENNINGS, ed. *Ancient Native Americans*. San Francisco: W. H. Freeman and Company, 221-279.
- IVANISHCH, A.M., 1996. Mogil'nik na Tudozero. In: *Izvestiia Vologodskogo obshchestva. Izuchenie Severnogo kraia, vypusk*, V. Vologda, 3-28.
- IVANISHCH, A.M., 1997. Drevnosti Vytegorii. In: *Vyterga I Kraevedcheskii al'manakh „Russ“*. Vologda, 11-42.
- KOSTYLEVA, E.L., UTKIN, A.V., 2000. Volosovskie pogrebeniia s iantariom mogil'nika Sakhtysh IIA. In: *Tverskoi arkhologicheskii sbornik, vypusk*, 4, t. I. Tver', 175-184.
- KANUNGO, A.K., MISRA, V.N., SHINDE, V., 2007. Western Indian (Mewar) Chalcolithic Beads with Special Reference to Balathal. *Journal of the Society of Researchers Bead*, 19, 42-57.
- LOZE, I., 1999 The Processing on Amber during the Middle Neolithic in Latvia. In: B. KOSMOWSKA-CERANOWICZ, H. PANER, eds. *Investigations into Amber. Proceedings of the International Interdisciplinary Symposium: Baltic Amber and Other Fossil Resins 997 Urbs Gydanyzc – 1997 Gdańsk 2–6 September 1997, Gdańsk*. Gdańsk, 1999, 131-135.
- LOZE, I., 2003. Middle Neolithic amber workshops in the Lake Lubāns Depression. In: C.W. BECK, I.B. LOZE, J. M. TOOD, eds. *Amber in Archaeology. Proceedings of the Fourth International Conference on Amber in Archaeology Talsi 2001*. Riga, 72-89.
- LOZE, I., 2008. Lubāna ežera mitrājā. Neolīta dzintars un tā apstrādes darbnīcas. Latvijas vēstures institūta Apgāds. Rīga.
- MIETTINEN, M., 1983. Esihistoriallinen aika Etelä-Poh- janmaan Järvisseudulla. *Järvisseudun historia*, I, 61-174.
- RIMANTIENĒ, R., 2001. Die Bernsteinerzeugnisse von Šventoji. *Acta Academiae Artium Vilnensis*, 22, 87-98.
- Sidorov, V.V., 1992. Mnogosloinye stoiarki verkhnevolzhskovo baseina Varos i Jazykovo. In: *Mnogosloinye stoiarki verkhnego Povolzh'ia*. Moskva, 3-114.
- ZAGORSKA, I., 2007. Radiocarbon Chronology of the Zvejnieki burials. In: L. LARSSON, I. ZAGORSKA, eds. *Back to the Origin. New Research in the Mesolithic- Neolithic Zvejnieki Cemetery and Environment, Northern Latvia*. Lund, 91-113.
- ZIMINA, M.P., 1993. Kamennii vek basseina reki Msty. In: *Rossiiskii etnografi'ia*, 16. Moskva.

ZIMINA, M., 2001. Amber Decorations from the Valdai Lake Region burial grounds. *Acta Academiae Artium Vilnensis*, 22, 145-148.

ZIMINA, M., 2003. Amber ornaments from the Konchanski Burial Ground. In: C.W. BECK, I.B. LOZE, J. M. TOOD, eds. *Amber in Archaeology. Proceedings of the Fourth International Conference on Amber in Archaeology Talsi 2001*. Riga, 149-156.

ZIMINA, M.P., 2004. K voprosu o rasprostraneni iantaria na neoliticheskikh pamiatnikakh lesnoi policy Evropeiskoi chaste Rossii. In: KH.A. AMIRKhanov, ed. *Problemy kamennogo veka Russkoi ravniny*. Moskva: Nauchnyi Mir, 322-330

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## GINTARINIAI VAMZDELINIAI KAROLIAI IŠ ZVIDZĒS NEOLITO GYVENVIETĒS LUBANO APYEŽERĒS ŠLAPYNĒJE

### ILZE BIRUTA LOZE

#### Santrauka

Straipsnyje aptariami vamzdeliniai karoliai, gaminti Lubano apyežerės Zvidzės neolito gyvenvietėje, ir jų analogijos Šiaurės rytų Europos miškų zonos paminkluose (1 pav.). Straipsnyje taip pat minimi kitų Lubano apyežerės gyvenviečių gintariniai karoliai. Straipsnyje nagrinėjami skirtingų potipių vamzdeliniai karoliai: cilindriniai, cilindriniai su storėjančia vidurine dalimi, su išplatinta vidurine dalimi ir kitos šių, autorės nuomone, archajinių karolių formos (2 pav.; I iliustr.). Karolių su storesne vidurine dalimi rasta Konchanskoe, Repistche, Tudozero ir kituose Šiaurės rytų Europos miškų zonos kapinynų kapuose. Statinės, apskritų ir kitų formų vamzdelinių karolių, gamintų iš kaulo, skirtingų rūšių kriauklių, taip pat iš pusiau brangių akmenų ir kitų medžiagų, rasta Artimuosiuose Rytuose, Egipte ir kitose senojo pasaulio vietose.

Vertė Audronė Bliujienė

## II

NEOLITHIC  
IN EASTERN  
EUROPE