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Baltic Amber

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Baltic Amber in
Natural Sciences,
Archaeology
and Applied Arts

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Baltic Amber

Proceedings of the International Interdisciplinary Conference:

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ARCHAEOLOGY
AND APPLIED ARTS

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PREFACE

This volume of Acta Academiae Artium Vilnensis is the publication of the papers of the international interdisciplinary conference "Baltic Amber in Natural Sciences, Archaeology and Applied Arts" which will be held on September 13-18, 2001 in Vilnius, Palanga and Nida (Lithuania). The conference will be organised on the initiative of the Vilnius Academy of Fine Arts and Lithuanian Art Museum. The material for this volume have been sent by the scholars from ten countries – Lithuania, Latvia, Poland, Denmark, Sweden, Germany, Slovenia, Belarus, Russia and the USA. Due to the participation of numerous research workers, who will represent a broad range of disciplines, the conference will turn out into an important forum for excanging the ideas and new information on the afore mentioned subject and will show a growing interest in amber among the academics in all the countries around the Baltic Sea.

Traditions of amber collecting, production and distribution reach back as far as the Mesolithic Period and has an unterrupted history, reaching our days. All the time this tradition as an important cultural component was functioning in all the communities, the peoples and the states around the Baltic Sea.

The origin of amber is related with the legends of the peoples, inhabiting in the areas around the Baltic Sea, but it also has almost the three thousand year – long literary tradition, reflecting the ages – long process of its investigations, leading from mistery to knowlwdge (R.Budrys' publication).

Geologists, biologists are discussing the problems of formations, morphology and inclusions of amber (A.Grigelis, S.Podėnas, L.Vaičiulytė, B. Kosmowska-Ceranowicz). In all the modern states around the Baltic Sea rich amber artifacts, inclusions and the collections of amber art pieces are presented in amber museums and galleries, and they are also the field of investigation for historians of science and art (S.Ritzkowski, M.Ploug, J.Ludavičienė, A.Tautavičius and other publications in this volume).

The beginning of amber ornaments production process, the variety of forms, types, regional differences, the role of amber in the burial customs, the distant amber exchange, and examining amber artifacts as an objects of art is the object of prehistoric investigations (A.Butrimas, M. Charniauski, M.Iršėnas, L.Larsson, I.Loze, S.O.Oshibkina, R.Rimantienė, J.Taffinder, I.Zagorska, M.Zimina).

Amber objects of high artistic and aesthetic value which were created throughout the prehistoric period and the early ages of the Baltic life time function as a link to unite various cultures and the peoples around the Baltic Sea with the Mediterranian Civilization (V.V.Perko, B.Križ, I.Sivec, A. Bliujienė, R.V.Sidrys, E.Jovaiša).

Amber was a part of Lithuanian and Latvian folk costume (B.Vaska), there existed regulations of amber collections (L.Vaičiulytė, D.Elertas), amber art objects have their conservation traditions (E.Christensson).

The most beautiful Lithuanian tales and legends are linked to the sea and amber. H.Šabasavičius' publication

presents the legend of amber in Lithuanian theatre, the interest in the legends on the amber by the greatest Lithuanian artist Mikalojus Konstantinas Čiurlionis.

In present conference, the development of contemporary amber art in Baltic Sea region as well as possibilities of its use in modern mode of life are elucidated and discussed by art critics (L.Jablonskienė, J.Ludavičienė, Z.Kostiashova, R.Pileckaitė)

The Organizing Committee express its cordial gratitude to all contributors of the Conference and wish all the participants fruitfull work, successful presentations, interesting discussions, new and useful contacts, and good impressions in Lithuania, the land of amber.

Adomas Butrimas
Romualdas Budrys

ACTA ACADEMIAE ARTIUM VILNENSIS / 22 2001

THE AMBER ORNAMENT COLLECTION FROM DAKTARIŠKĖ 5 NEOLITHIC SETTLEMENT

Adomas Butrimas
VILNIUS ACADEMY OF FINE ARTS (LITHUANIA)

During systematic archaeological investigations in the Žemaitijan Uplands in Western Lithuania, especially in the Biržulis Lake area (fig.1) in 1978-1993 fifty Mesolithic camps, and Neolithic and early bronze-age settlements, grave sites and find sites were discovered. The better part of these (22 sites) was investigated by resident expeditions and the rest were surveyed. A collection of several tens of thousands of items of ceramic, flint, bone and horn, amber, stone and wooden artefacts was made and almost all of these are preserved in the archaeological holdings of the Lithuanian National Museum in Vilnius. Most of the Biržulis Basin material has been published in catalogues, articles and broader studies devoted to individual sites or site groups. Material has been presented at conferences too.

The large part of sites excavated in this region are settlements and grave sites in sand or gravel and hence conditions for amber artefacts to survive are poor. Therefore only modest collections of amber artefacts have been found in the Neolithic settlements at Šarnelė, Kalniškės 1 and Daktariškė 1 (Butrimas A. 1982, p.11 and table 33:1-7; Girininkas A. 1977 p.57-65; Butrimas A., 1996 p.174-191). These include pendants, beads, shaped beads, amber trial pieces and raw material, which are found most commonly in Lithuania's Neolithic settlements.

The largest collection of amber artefacts found in the area under investigation is from Daktariškė 5. This settlement was discovered in 1986 by Janapolė High

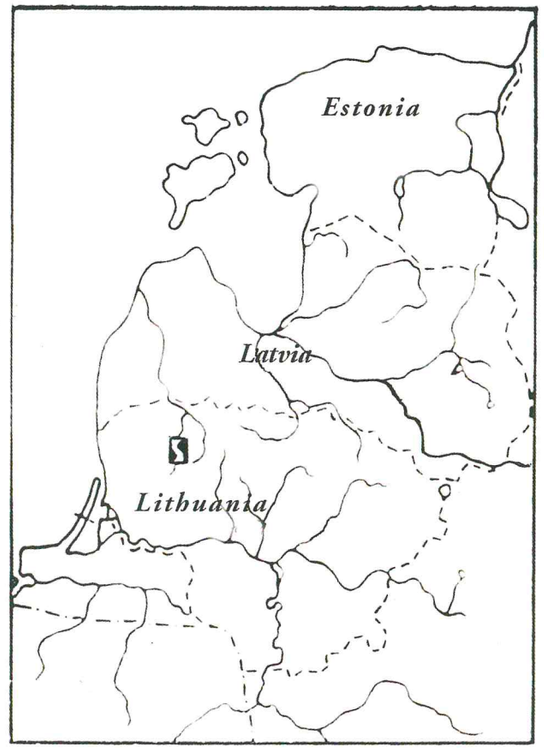


Fig.1. Location of the Biržulis Lake area and Daktariškė 5 Neolithic settlement

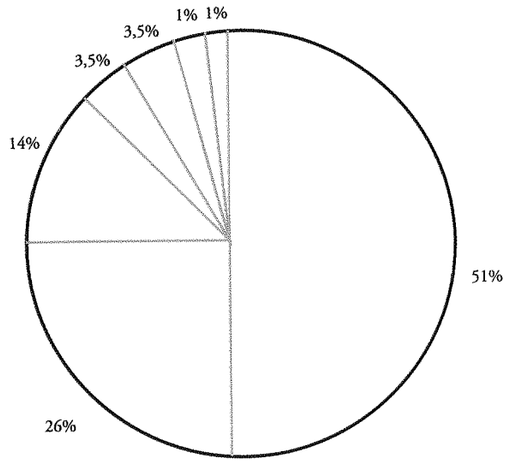


Fig. 2. The persentage diagram of amber finds in Daktariškė 5 settlement: 51% – raw material and production waste; 26% – pendants; 14% – button-shaped beads; 3,5% – beads; 3,5% – disks; 1% – rings; 1% – double button-shaped beads.

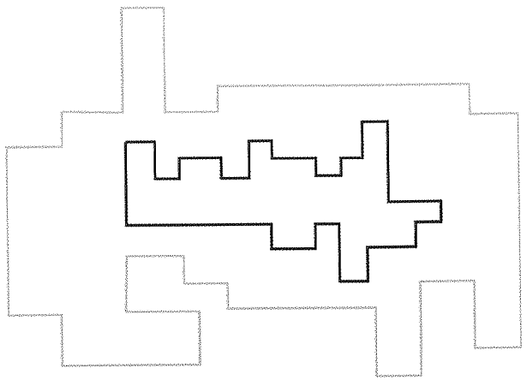


Fig. 3. The concentration of amber finds in Daktariškė 5 settlement

School pupils on the southern side of the hill between Biržulis and Sterva Lakes, not far from the village of Daktariškė (Varniai District, Telšiai Region). It was investigated by Vilnius Fine Arts Academy archaeological expeditions in 1987-90. This is one of the largest peat site stone-age monuments to be researched in Western Lithuania. An area of 648 m² was investigated. Approximately 9,440 potsherds of Narva Ceramics mixed with organic material were found and more than 1,590 potsherds of corded ware ceramics with added mineral material were collected. The settlement was rich in flint artefacts, and several dozen bone and horn axes, gouges, hooks, net plummets screwed into birch bark, pine bark floats, fragments of wooden artefacts and many other finds were found.

A collection of amber artefacts was gathered at Daktariškė 5 which differs little that found in separate stone-age settlements in the Šventoji and Sarnatė Neolithic complexes in Western Lithuania and Western Latvia, but the variety of artefact types and certain unique amber artefacts make this collection truly representative and it has a special place compared even with Neolithic peat sites settlements on the eastern Baltic littoral. Two cultural layers were found in the site: an early cultural layer with ceramic made with added organic components and a later layer, with ceramic made with added mineral components (Butrimas A. 1998, p.5-7; Butrimas A. 1990, p.7-9; Butrimas A., 1992, p.8-11; Butrimas A. 1998, p.107-131; Iršėnas M., Butrimas A. 2000, p.125-138).

In a small part of the site archaeologists managed stratigraphically to distinguish the lower cultural layer, which ought to be attributed to the early stone-age period of Narva culture , that is 5530±110 B.P. (Vs-808). In the remaining part of the settlement there is a clear middle Neolithic Narva culture layer dated to 4360±90 B.P. (Vs-809) and an upper cultural layer which should be dated to the later stone-age Pamarių (Rzucewo) culture with a date, according to Vilnius and Leningrad laboratories' radiocarbon dating, of 4150±5 B.P. (Le -4450), 4100±40 (Le -4450), 4020±100 (Vs - 813). Amber artefacts were found in the layers belonging to the Middle and Late Neolithic and according to uncalibrated radiocarbon dating could be dated to the second half of the third quarter and the fourth quarter of the third millennium BC, that is to the period 2350-2020 BC. As we have said, in some places stratigraphy helped to distinguish the settlement's lower cultural level. It should be noted that no amber artefacts were found there.

Analysis of amber artefacts

The amber artefact collection from Daktariškė 5 comprises 132 items. These are amber artefacts, trial pieces, pieces of raw amber and production waste. Sixty eight items of amber pieces and off-cuts were found, 18 pendants and fragments of the same, five beads, five disks, one amber large ring and one double button-shaped bead. (Fig.2) Some of these finds are decorated with incisions. More than half the finds are raw amber and production waste (fig.8). Bearing in mind the fact that a considerable amount of finds are trial pieces and that we have found raw amber and production waste, we might conclude that amber production took place at Daktariškė 5 itself.

Having analysed plans of the finds of amber artefacts, raw material and production waste found at Daktariškė 5, we see that most of the amber finds, especially the raw amber, were discovered in the centre of the settlement, where, amber production most probably took place there (fig.3). Undoubtedly the amount of amber finds, especially the quantity of raw material and its relation to finished artefacts do not allow us to suppose that objects produced here were connected with larger amber trade. We might only assert that amber artefacts were produced in the site to meet local needs and that the spread of artefact production waste takes up an area of only circa 100 m², which is less than a sixth of the total settlement area.

Amber pendants and trial pieces

Pendants are most commonly made from naturally flat pieces of amber resin which solidified between the bark of the trees that produced the resin (Katinas V. 1986, p.00). They comprise the best part of the artefacts; we found 34 items which make up 26 per cent of all amber finds (diagram, fig.2). These are trial pendants, prepared pendants and fragments of pendants. A large part of the fragments is made up by pendants that are broken near the hole made for stringing the bead.

Trial pieces Two clear types of trial pieces have been found. The first is trapezoid with both patina ends broken off, with a square cross-section and sharp side edges; these are flat. The top is cut quite evenly, is wrinkly, and the artefact has not begun to be polished (fig.4:19). The amber is brownish in colour (fig.9). The second type is also trapezoid, but the lower edge is concave towards the centre and two sections stick out like wings. The surface is cut roughly and the edges of the side are rounded, the cross-section lenticular, and no polishing work has been begun on the artefact (fig.4:20).

Trapezoid pendants

The type of pendant found most commonly in amber manufacturing centres in the coastal areas of what is now Lithuania and Latvia is trapezoid in form. At least six better preserved examples have been found in this site (fig.4:1, 5-7, 12, 14; fig.10). Most likely several smaller chips should be classified as parts of pendants (fig.4:7, 9-11, 13). Some pendants were made from irregular off-cuts of amber that are slightly polished and have holes for stringing. Their form is similar to a rough trapezium (fig.4:2-4). The latter examples would show that raw amber was highly prized in this settlement and sometimes amber ornaments would be made from very poor pieces of amber which would be polished a little and pierced with a hole for hanging. As the cross-sections of these and the pieces mentioned earlier show, the holes were drilled from both sides. Such barely polished and/or completely unworked pendants have been found in other stone-age settlements in western Lithuania too at Šarnelė, Daktariškė 1 and elsewhere (Rimantienė R. 1996, fig.179:21, Butrimas A., 1982, table 33:1-4).

Pendants with wavy side edges form a separate small group. Two clearer fragments of this type of pendant were found in this site (fig.4:15-21). This type of pendant is not found at all in coastal Neolithic settlements and grave sites in the Baltic, nor were they found in the Schwarzort (Juodkrantė) Hoard although they are found in Eastern Latvian amber workshops (Loze I. 1974:53, table) and it is from there that they spread with other pendants typical of this region to Eastern Lithuania (Girininkas A., 1990, fig.115). It seems that forms typical of this amber production centre reached the Žemaitija Uplands too.

Beads with a regular round cross-section broadening out towards the bottom and having three holes for hanging (fig.4:16), that are carefully polished and of brownish amber also belong to the type of amber bead that is not found in coastal Baltic settlements. Closer analogies are found only in the Lubana amber artefact manufacturing centre (Loze I. 1975, fig.6), but we do not have a bead that typologically identical with this artefact and it could be classified as a unique artefact type.

One fragment of a key-shaped decorated pendant has been found (fig.4:17; fig.11). The surviving part of

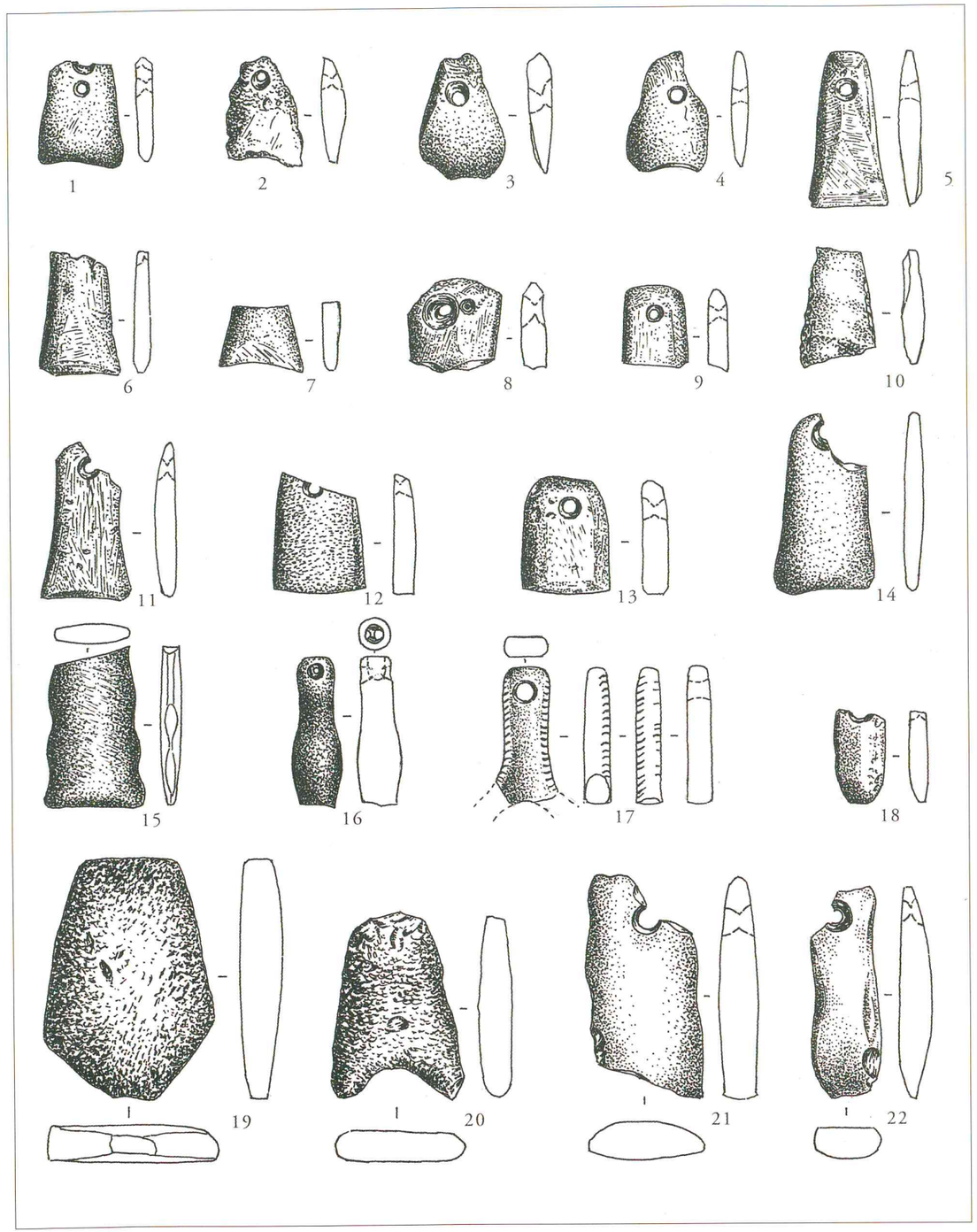


Fig. 4. Pendants

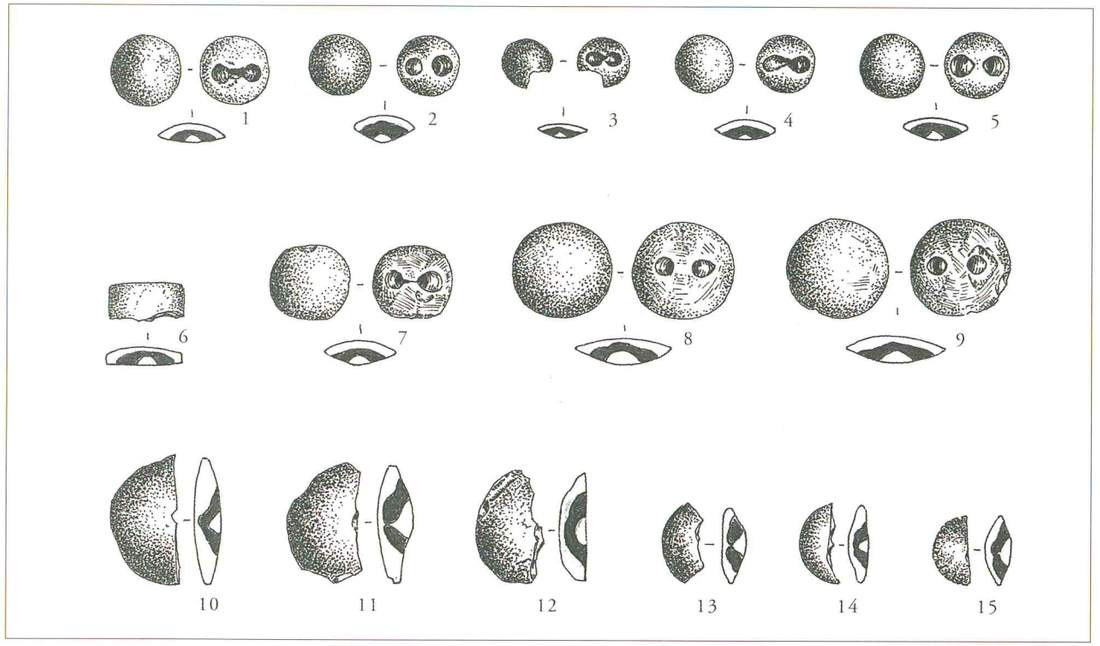


Fig. 5. Button - shaped beads

this pendant has a hole for hanging. On the lower, lost part of the ornament there would have been a ring. The length of the stem for hanging is 2.6 cm and its breadth 1 cm; it is 0.5 cm thick. The edges are decorated with short slits. The amber is made from good-quality yellow amber and it is carefully polished. The four oldest known key-shaped pendants were found in the second half of the nineteenth century on the Curonian Spit and were published by R. Klebs with the whole hoard. The author called them "gestielte Ringanhängsel" (Klebs R. 1882, p.25-26, table VIII: 8-10, 12). Typologically the ornament we found, like the Juodkrantė examples, belongs to the same type of key-shaped pendants with a large ring on its lower part. Pendants of this type are not found in modern Polish territory, nor are they found in the Šventoji and Sarnatė sites in Western Lithuania and Western Latvia respectively. Lower sections of key-shaped pendants, that are disk-shaped with a small hole, have been found in Eastern Latvia, but there is no hanging hole in their stems. Many examples of this type of pendant have been found at Abora 1 Settlement in the cultural layer and in the grave sites belonging to this settlement (Loze I. 2000, p.70-72). A key-shaped pendant was found at Daktariškė 5, which in its form is much closer to the pendants found in the Juodkrantė collection. I. Loze sees the origins of this type of pendant between the Northern Balkans and the Carpathians and also on the eastern coasts of the Aegean and in Anatolia, where gold and copper pendants of similar form have been discovered.

Amber beads

Another type of amber ornament that is widespread in the eastern Baltic Region is button-shaped beads (fig.5:1-15; fig.12). Eighteen button-shaped beads and fragments thereof were found in Daktariškė 5. The dominant form of ornament has a lenticular cross-section with a hidden V-shaped double drill hole on the under side. Investigations of Neolithic grave sites shows that this type of button-shaped bead was sewn onto clothing and they could have been worn strung on a necklace together with pipe beads, but their delicate form means that they could not have been used a buttons. The button-shaped beads that have been found were carefully polished. The width of beads from Daktariškė 5 ranges from 0.8 cm to 2.3 cm. Larger beads are rare in other sites too. Such beads are found in all West Lithuanian sites and the Juodkrantė Hoard con-

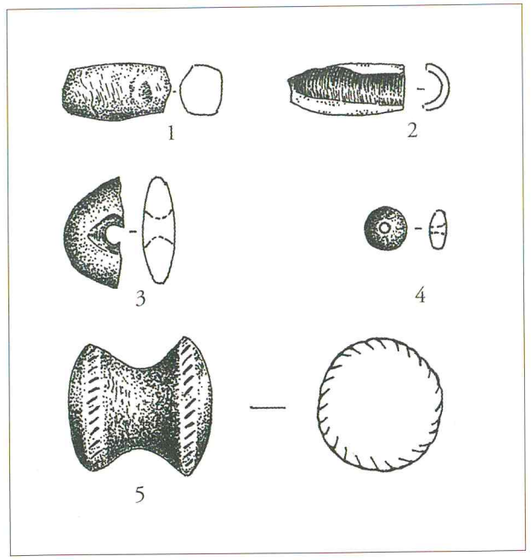


Fig. 6. 1- 4 – beads, 5 – double button - shaped bead

tained oval beads up to 4.5 cm wide and even decorated beads. The beads are found throughout the area where Narva Culture spread and in the Nemunas Culture they have been found only at the Cedmaras settlement. This type of bead spread throughout Polish territory where they are found in the Globular Amphorae, Złota and Rzucewo (Pamarių) cultures as the most common type of amber artefact (Mazurowski R.F. 1983, p.26). In Late-Neolithic Rzucewo Culture they are found in all sites (Nida, Daktariškė 1, Būtingė 1 settlements) but in cross-section they are not lenticular but segmented or oval. One button-shaped bead found at Daktariškė 5 is not oval but quadrangular (fig.5:6). This is characteristic mostly of the Late Stone Age but it is also found in the Juodkrantė Hoard (Klebs R. 1882, table ii).

Amber beads are not commonly found in settlements; one trial pipe (cylinder) bead was found (fig. 6:1), as were one fragment of a pipe-bead (1.9 cm long) with a carefully polished surface with marks of a drilling hole (fig. 6:2), half a round lenticular-cross-section bead 1.8 cm wide, with a hole for hanging drilled from both sides (fig.6:3), and one miniature, neatly polished round bead, lenticular in cross-section with a diameter of 0.7 cm (fig.6:4). Fragments of other smaller beads have been found too.

Cylindrical beads form one of the most important types of amber ornament. They very commonly have thin sides, like the examples we found, and are of various length. The beads found in the Juodkrantė hoard and Narva culture settlements have somewhat broader sides while those found in Rzucewo culture settlements at Šventoji, Daktariškė 1 and Nida have thinner sides. Cylindrical beads are found in almost all Rzucewo culture settlements, including those already mentioned in Western Lithuania, the Kaliningrad Region and Polish Pomorze around Gdańsk, Suchacz, Tolmicko, Oslonino, Żuławy (Żurek J. 1954: 37; Kilian L. 1955: 56-57; Mazurowski R.F. 1984, p.5-60; Król D. 1992, p. 291-299). This form of ornament is made by exploiting naturally icicle-shaped pieces of amber resin.

Polished beads with a hanging hole, lenticular cross-section and various diameters are known from the Złota and Rzucewo cultures in Poland, but are rare in Lithuanian coastal regions; single examples are known from the Juodkrantė Hoard and in Latvia they are found at Sarnatė (Vankina L.V. 1970, p.105-114) and the Abora 1 settlement in the Lubana Lowlands (Loze I. 1979, fig:3-4).

Only one *double button-shaped bead* with a neatly polished surface, and two side edges decorated with short oblique-ish incisions has been found (fig.6:5). The closest analogies, including one almost identical one, come from the Juodkrantė Hoard (Klebs R. 1882 taf.1: 17, 22). This form is almost unknown in other Polish, Lithuanian and Latvian stone-age sites.

Amber disks and rings

Amber disks of two types have been found at Daktariškė 5: lenticular cross-section disks with a small hole through the middle (fig.7:1,2) and hole-less disks with a broad groove carved on the edges is reminiscent in form, of a double button (fig.7:4:6).

A very interesting disk is 3.6 cm wide. On one side the artefact is divided into four unequal parts by a triple lightly drilled cross of indentations (fig.7:1; fig.14,15); on the object's borders with broken single and double lines of indentations one, two and four triangles are formed on each of the four parts. It appears that in certain indentations there are marked remnants of dark resin. In the smallest quadrant formed by the cross a triangle of two indentations was made. Next to this in the next quadrant (clockwise) two triangles are formed by a double line of indentations, and the same is the case with the next quadrant, and in the final quarter, which is the largest in size, there are four triangles of which two are formed of a double line and two of a single line of indentations. Because of this composition

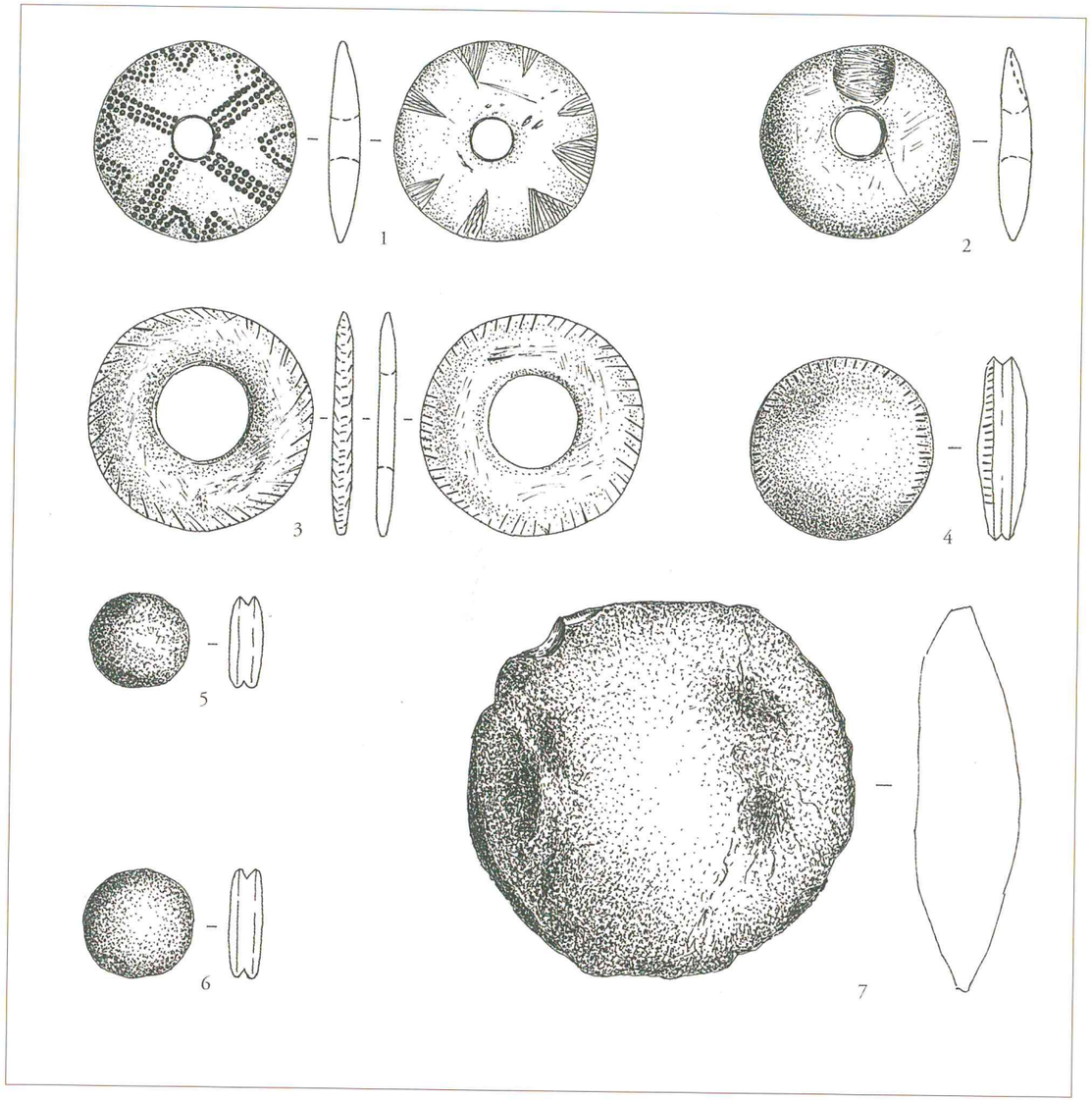
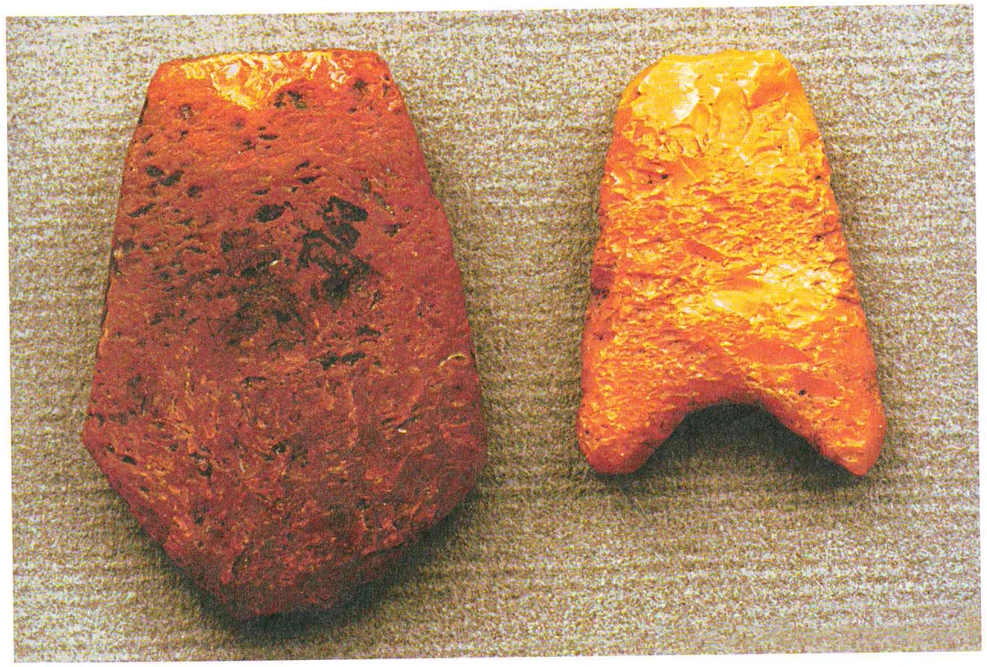


Fig. 7. Disks and ring

Fig. 8. Pieces of raw amber. M 1:1

Fig. 9. Trial pendants. M 2:1



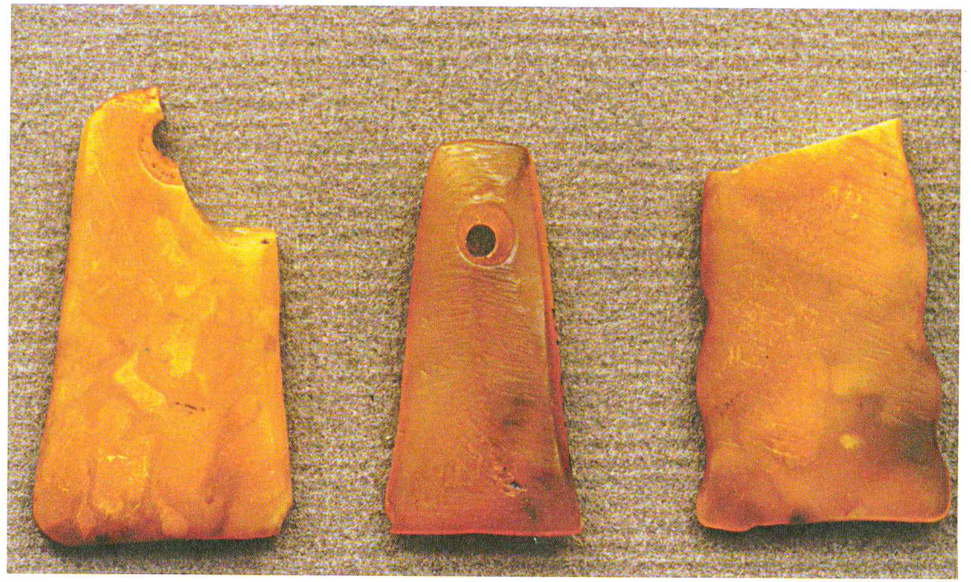


Fig. 10 Pendants. M 1,5:1

Fig. 11. Pendants. M 2:1

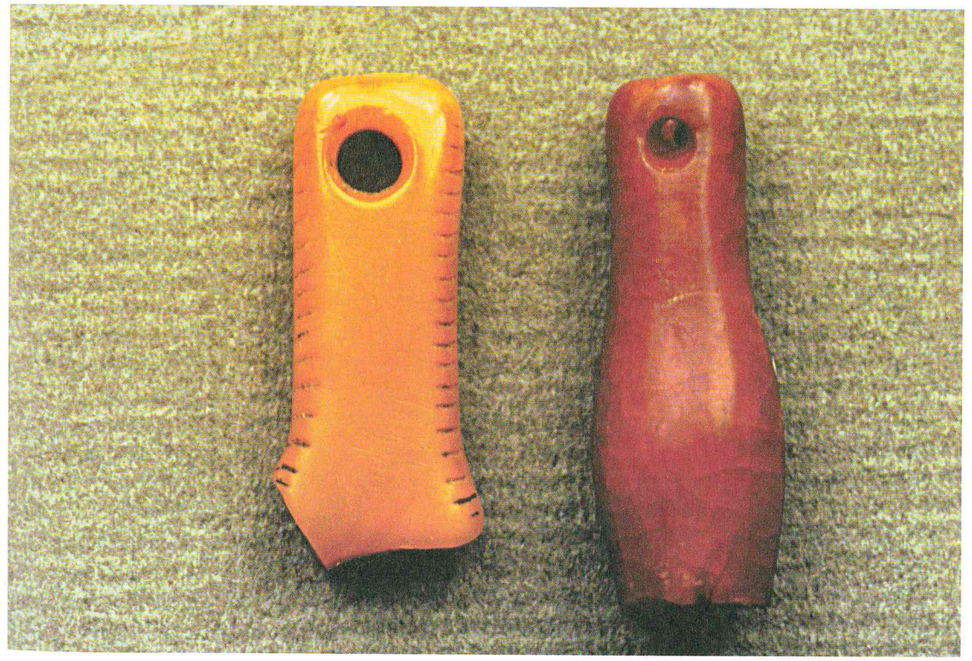


Fig. 12. Button – shaped beads. M 2:1

Fig. 13. Disk

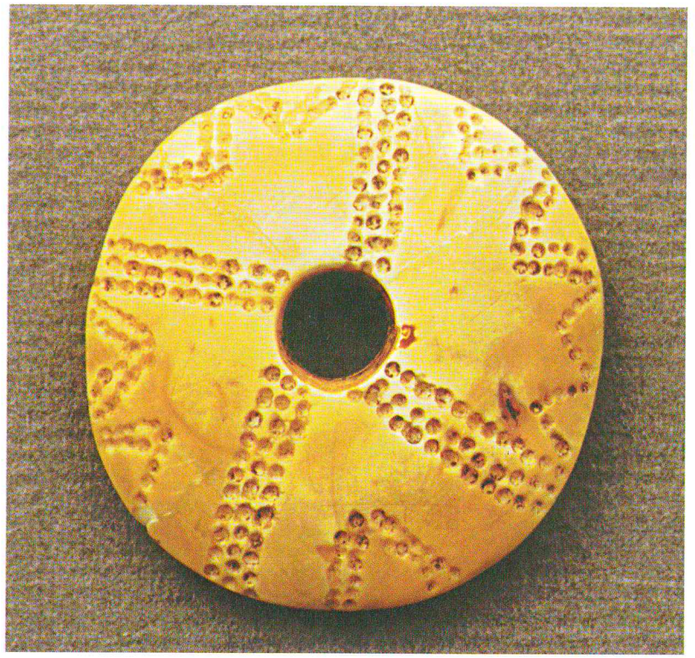


Fig. 14. Decorated disk (avers). M 2:1

Fig. 15. Decorated disk (revers).

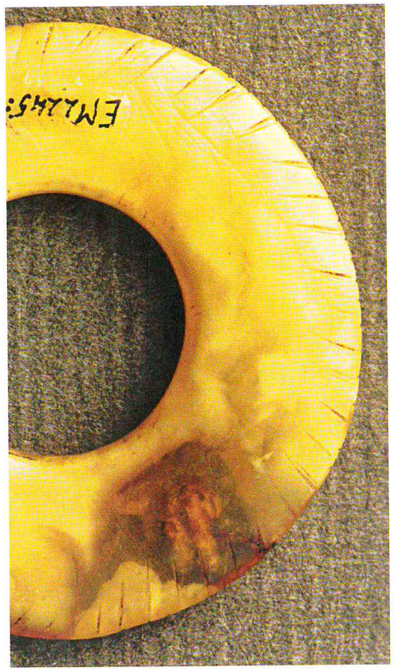


Fig. 16. Ring. M 2:1

in each of the four areas divided by the cross the triangles are made up a different number of indentations, increasing in number as one moves clockwise. The smallest number of indentations in a quadrant's triangles is 25, the largest 50 with the triangles of the middle quadrants having 37 and 38 indentations. On this side the decorative elements are set out according to the principle of rotating symmetry (Adomonis J. 1994, p.92-111). What such decoration could have been intended for, or whether it had some sort of calendrical or other function, we cannot say at present. The other side of this artefact is also interesting. Its edges are decorated too but not with indentations but by another technique - eight triangles of varying size were made by short incisions. However, the varied number of incised lines in these triangles is not marked by any more clearly expressed symmetry.

Amber disks of similar type and form began to be made in Lithuania only in settlements of the Middle Neolithic; the earliest known specimens are from Šventoji Settlement 3b. The symbol of a cross within a wheel is typical of disks found in Globular Amphorae Culture graves in Poland. A very close analogy to our disk is found in an amber disk from Swarcenowo (Toruń woj.). In this Globular Amphorae Culture grave we find a disk with a cross in a wheel and on the borders there is a single line of triangles, but unfortunately the fragmentary state of the object is such that we cannot say how many triangles there were. Another disk almost identical to ours comes from Stauchwitz-Augusthof (Ortelsburg district) (Šturms E. 1956, vol. IV:2). R. Mazurowski dates these disks to 2500-2200 BC and this agrees in part with the date set for the Daktariškė 5 settlement's cultural layer at 2360-2020 BC. In form, cross-section and size there is another completely analogous, undecorated disk with a neatly polished surface from the same Daktariškė 5 settlement (fig.7:2; fig. 12). It is 3.4 cm broad.

A further three disks reminiscent of double buttons are made from transparent, yellow amber (fig.7:4; fig.7:4-6). The diameters are 3.3 cm, 1.9 cm and 1.8 cm. This type of disk is found on the Latvian coast at Sarnatė and others were found in the Juodkrantė Hoard, while there is a large ring of similar cross-section from the Globular Amphorae Culture graves in Poland.

Only one *amber large ring* has been found (fig.7:3; fig.16). It is especially daintily wrought of good quality yellow amber with its whole surface carefully polished on both sides and its side edges decorated with small incisions from both sides and through the middle. The cross-section is like a continuous, thin lens. An amber large ring is a frequent find in both Rzucewo and Globular Amphorae cultures. They are also a common find in Eastern Latvia but there the cross-section is a clear square (Loze I 1979, vol.lix:1-2) and this shows that there they were made without respect to form from shale large rings. Thus, in Daktariškė Settlement 5 amber large rings are connected with Globular Amphorae and Rzucewo Culture areas.

One incompletely finished amber disk was found (fig.7:7). One side is carefully polished and the cross-section is lenticular. In size (its diameter is 6.7 cm) this article differs from the whole of the Daktariškė 5 amber artefact collection.

Conclusions

1. Amber artifacts in the Daktariškė 5 Neolithic settlement were produced in the settlement area. Only later investigations can finally answer the question whether the local amber (from Lukstas lake area in the distance 10 km) or the amber transported from the Baltic sea coast (the distance 90 km) was used for producing amber ornaments.

2. The majority of amber ornament types, found in Daktariškė 5 settlement, we can see in the collections of the Narva culture settlements in the Šventoji and Sarnate Neolithic complexes in western Lithuania and western Latvia.

3. Amber disks, rings, some types of pendants and beads, with characteristic cross-sections, might show that the closest analogies to the amber collection of Daktariškė 5 sttlement were found in the Schwarzort (Juodkrantė) Hoard and in the Globular Amphorae, and Rzucevo (Pamarių) cultures. This shows close cultural relations of the western - south direction.

4. Amber artifacts in Daktariškė 5 settlement were found in cultural layers belonging to the Middle and the Late Neolithic (Narva and Rzucevo cultures), and according to the uncalibrated radio carbon dating they could be dated to the second half of the third and the fourth quarter of the third millenium BC, that is to the period 2350 - 2020 BC.

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