Roman Period Metal Half-moon Shaped Pendants with Knobs in Eastern Baltic Region

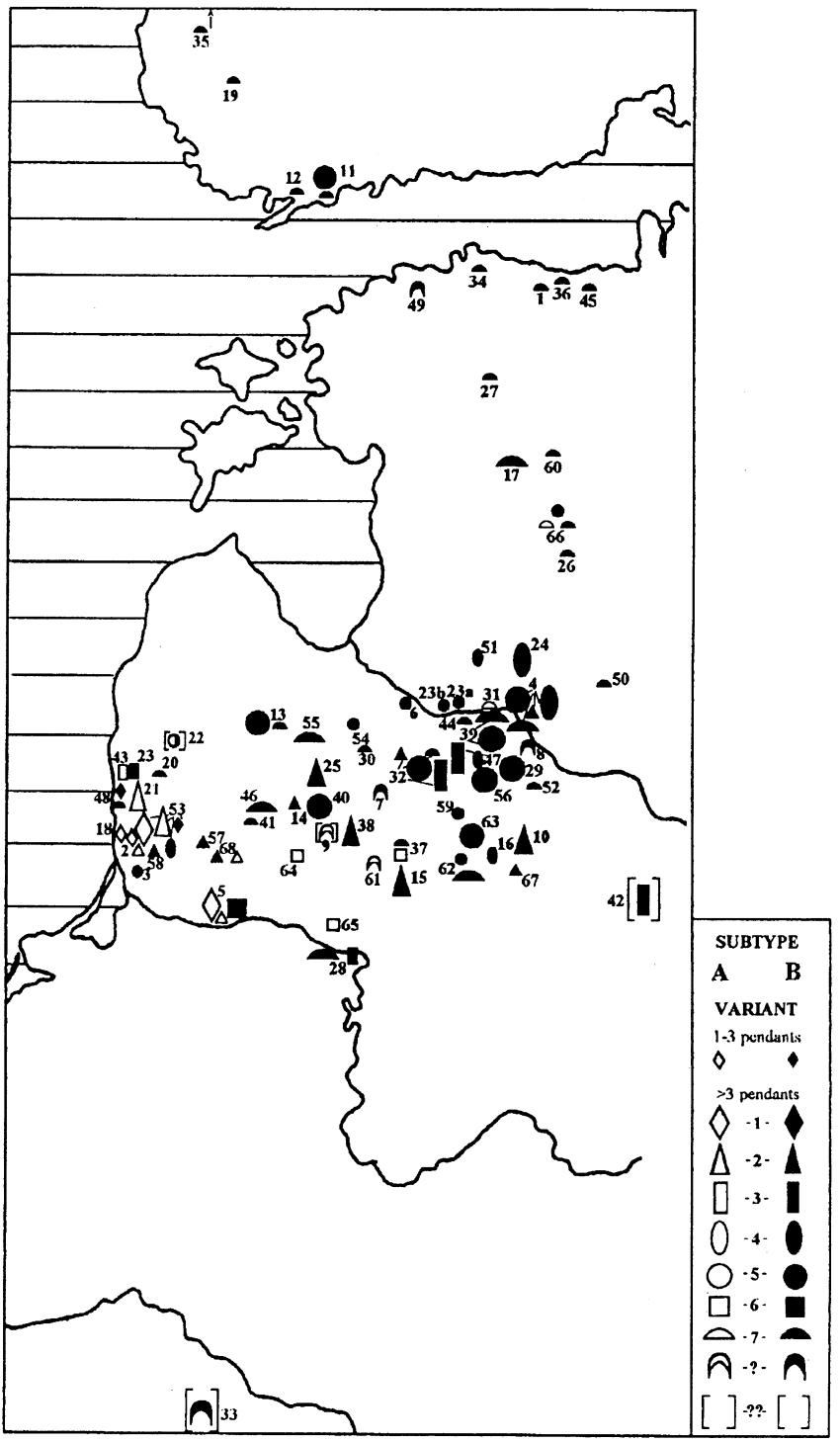
ANDRA SIMNIŠKYTĖ

Metal crescent-shaped pendants are common in various cultures of different epochs. Only stylistics of their decoration changed over ages. Silvering, enameling, inlaying with glass, openworking and other technologies were spread widely and put into practice of different countries jewelry.

There are a lot of the Roman period half-moon pendants of various modification in the Eastern coast of the Baltic Sea (Gaerte 1929: Fig. 185: i, j, 186: a, 187: a; Kulikauskas 1941: 43–45, Fig. 1: 1, 2, 4; 5, pl. X; LLM 1958: Fig. 100, 131, 142, 177; Majewski 1900: taf. XIV; Michelbertas 1986: Fig. 27; Moora 1938: 247–253; Nowakowski 1998: Fig. 28: 84; Vaitkunskienė 1999: Fig. 188: 2; Vasks A. et all 1997: Fig. 55). Metalwork decoration with little knobs was spread in the eastern Baltic region in the second half of the Roman period (Eesti 1982: Fig. 155: 5, 8; Gaerte 1929: Fig. 139: e, 140: c, i, k; LA 1974: Fig. 54: 4, 11, pl. 34: 7; LLM 1958: Fig. 164). There is especially a large number of half-moon pendants. The main parts of such pendants are: a lunulae-shaped body (sometimes not very regular), different shaped knobs (from 2 to 5) on each horn of a body and an ear for hanging. As a rule the pendants are 1.9–2.7 cm wide and 2–2.8 cm height, but there are also very small ones, e. g. 1.4×1.8 cm size and quite large – 2.8×3 cm. We managed to reveal 409 pendants from 70 find spots in the eastern Baltic region from the lower Nemunas in the south up to southwestern coasts of Finland in the North. Most of the pendants were from Lithuania (34 find spots) and Latvia (20 find spots); quite a few were found in Estonia (10 find spots) and some in Finland (4 find spots). Two more neck-rings with such pendants were found in Byelorussia (1 find spot) and Poland (1 find spot) (Map 1).

Except some pendants obtained from hill forts, most of the pendants were found in burial monuments. They are characteristic finds in women graves, although sometimes they used to be ornaments of children (Marvelė; Melderišķi Rites) or men (Muoriškiai).

Pendants were not self-dependent ornaments. Necklaces consisting of pendants and spirals, rarely of glass and metal beads, were most popular in the Culture of Barrow with stone circles of northern Lithuania and southern Latvia (Fig. 1, 2: 2, 3) (Michelbertas 1968: Fig. 7: 2, Vaitkunskienė 1999: Fig. 102). Neck-rings with lunulae-shaped pendants were quite frequent in western part of Lithuania (Fig. 3). Sometimes pendants were found to be attached to pins, fibulas or different ornaments of the breast (LLM 1958: Fig. 189; LAB 1961: Fig. 137), especially rarely with temple ornaments (Fig. 2: 1). They are rather simple in artistic aspect. The main means of decoration



Map 1. Spread of the half-moon pendants with knobs in the Eastern Baltic region. *F i n d spots:* 1. Aarla; 2. Aukštkiemiai; 3. Bandužiai; 4. Boķi; 5. Dauglaukis; 6. Daugmale; 7. Daujėnai; 8. Dignāja; 9. Dūkštas; 10. Dusetos; 11. Ekeberga; 12. Etterkilen; 13. Gailīši; 14. Gibaičiai;

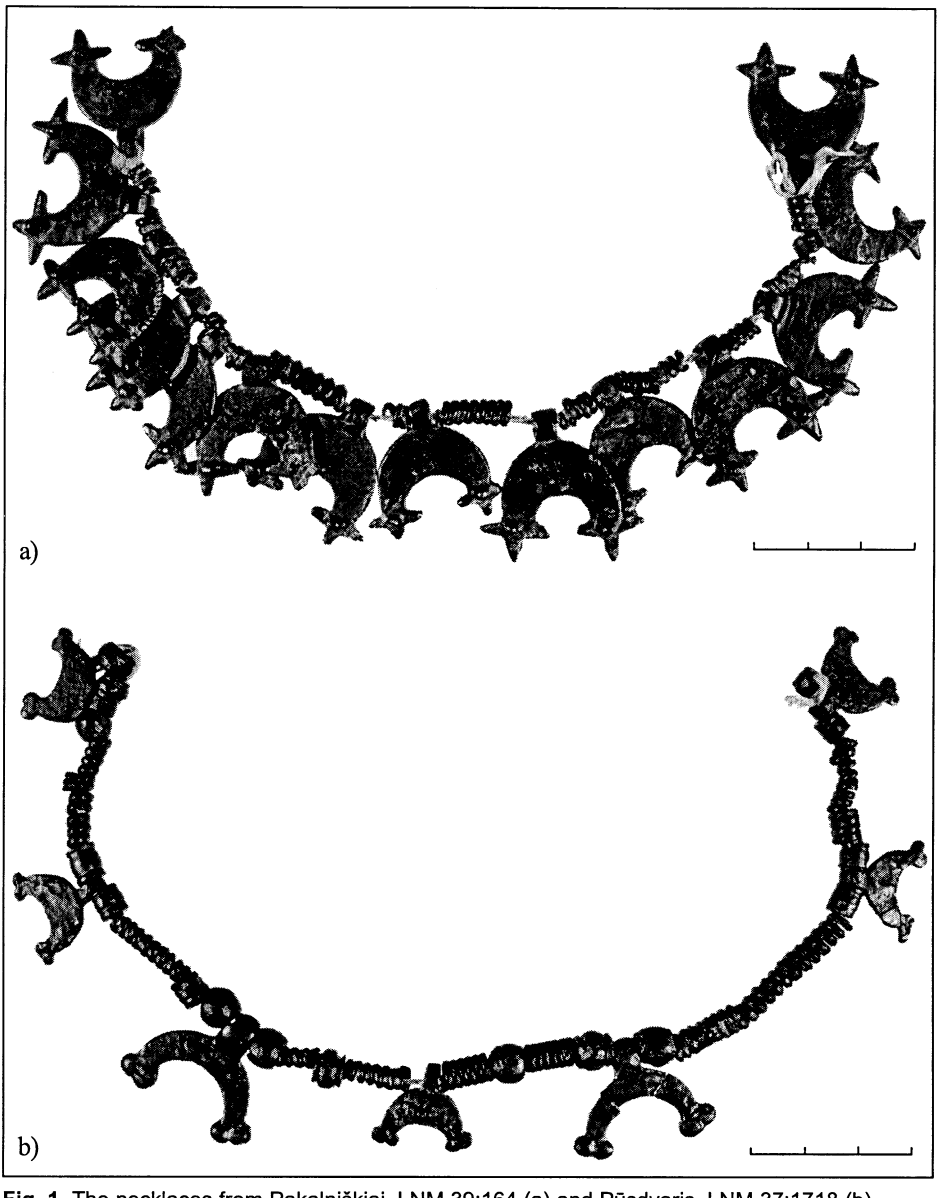


Fig. 1. The necklaces from Pakalniškiai, LNM 39:164 (a) and Pūsdvaris, LNM 37:1718 (b).

15. Gružos; 16. Kaniūkai; 17. Kivivare; 18. Surroundings of Klaipėda; 19. Köönikänmäki; 20. Kulai; 21. Kurmaičiai; 22. Latvia, site unknown – Kurzeme; 23. Surroundings of Lazdininkai; 23a. Lejasbitēni; 23b. Lejasziedi; 24. Lejnieki; 25. Linksmėnai; 26. Loosi; 27. Luige; 28. Marvelė; 29. Melderišķi; 30. Mežotne; 31. Mūkukalns; 32. Muoriškiai; 33. Newiadoma; 34. Ojaweski; 35. Pääkköönmäki; 36. Pada; 37. Pajuostis; 38. Pakalniškiai; 39. Pāķi; 40. Paliečiai; 41. Perkūniškė; 42. Postawy; 43. Pryšmančiai; 44. Pungi; 45. Purtse; 46. Pūsdvaris; 47. Razbuki; 48. Rūdaičiai I and II; 49. Saha; 50. Salenieki; 51. Sausnēja; 52. Slate; 53. Stragnai; 54. Strēlnieki; 55. Stūri; 56. Sunākste; 57. Šarkai; 58. Šernai; 59. Turdvaris; 60. Unipiha; 61. Upytė; 62. Užpaliai; 63. Vaineikiai; 64. Vaitiekūnai; 65. Veršvai; 66. Virunuka; 67. Žadavainiai; 68. Žviliai; 69, 70. see 23a, 23b. *Legend.* 1–7 – variants of pendants; ? – variant unknown; ?? – site unknown or unclear.

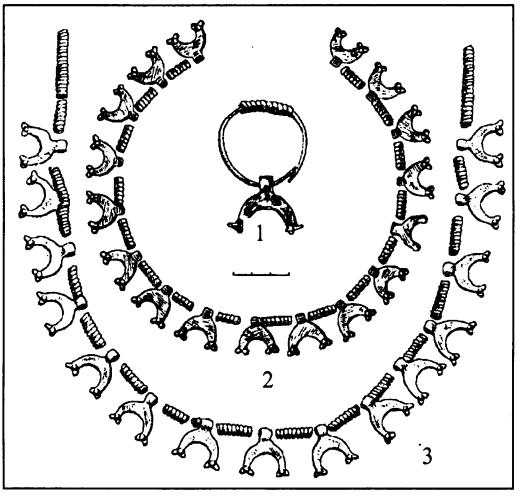


Fig. 2. The necklaces from Vaineikiai, barrow 2, grave 1 (3) and grave 5 (2), the temple ornaments from Žadavainiai, LII RS Fig. 2880 (1).

Fig. 3. The fragment of the neck-ring from the surroundings of Klaipėda, LNM 180: 2.

was openworking, as well as decoration of the ear or, especially rarely, the body with a different kind of incust.

So far nobody has paid an exceptional attention to this kind of pendants. H. Mora has discussed them most comprehensively (Moora 1938: 247–252). In literature they are ascribed unanimously to the circle of the Baltic metalworks and are dated from 3–4 c.c. AD. (Moora 1938: 250–251; Michelbertas 1986: 103–104; Hackmann 1905: 206; Kivikoski 1973: 35, Fig. 139–140; LA 1974: 113–114, Fig. 51, pl. 30: 13, 32: 9; Eesti 1982: 224, 230).

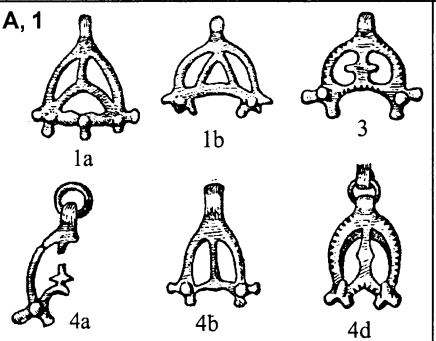
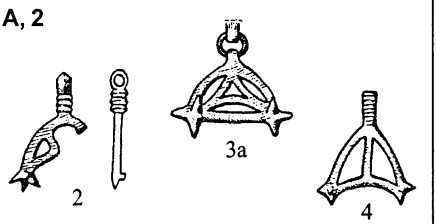
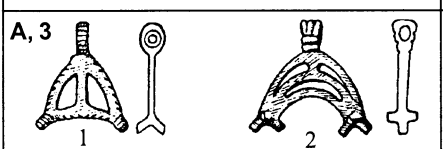
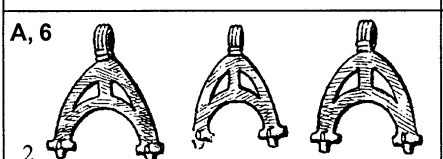
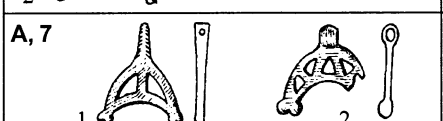
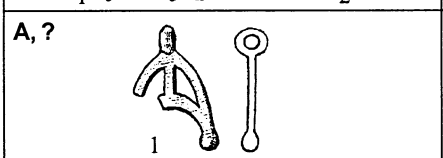
A wide-range of geography incites search for regional identities while a wealth of the finds activates tracing of differences and common characteristics. The aim of the article is to survey the lunulae-shaped pendants with knobs in the Eastern Baltic region, classify them, describe some aspects of their production, correct their spread and chronology, and try to explain the origin of pendants.

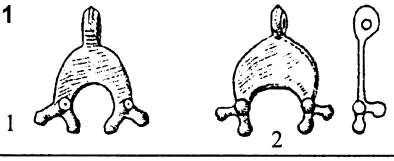
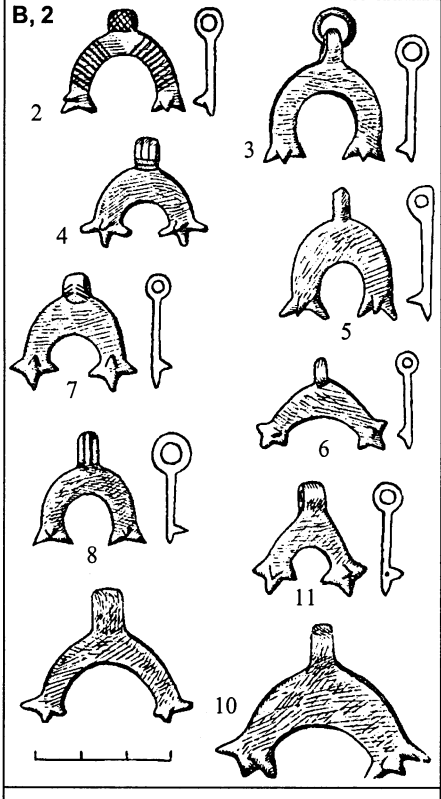
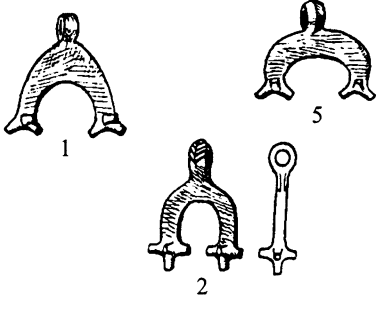
Classification of Pendants

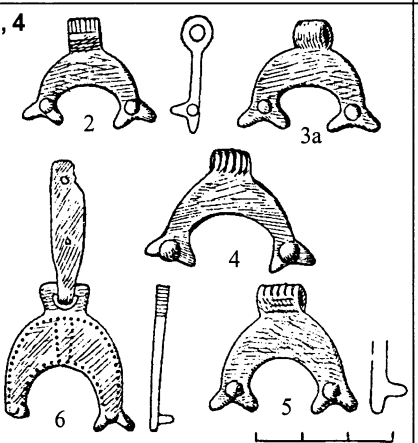
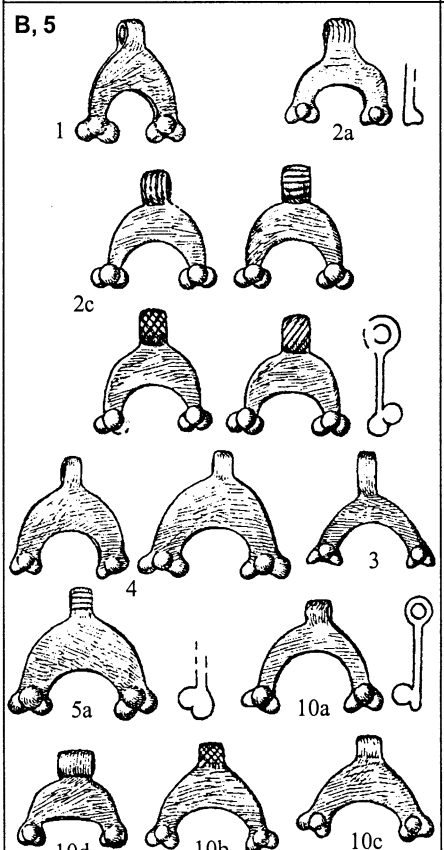
There could be 2 subtypes (A and B) and 7 variants of pendants. The main criterion of the subtypes was a body of the pendants. The shapes of the knobs were basic in the variant division (pl. 1).

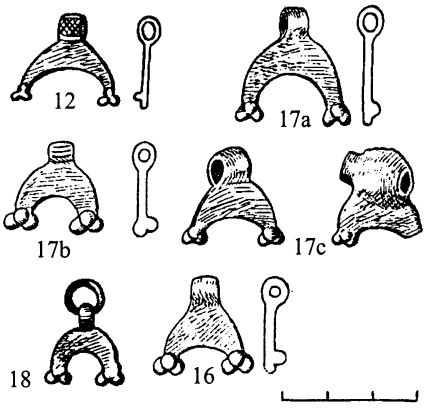
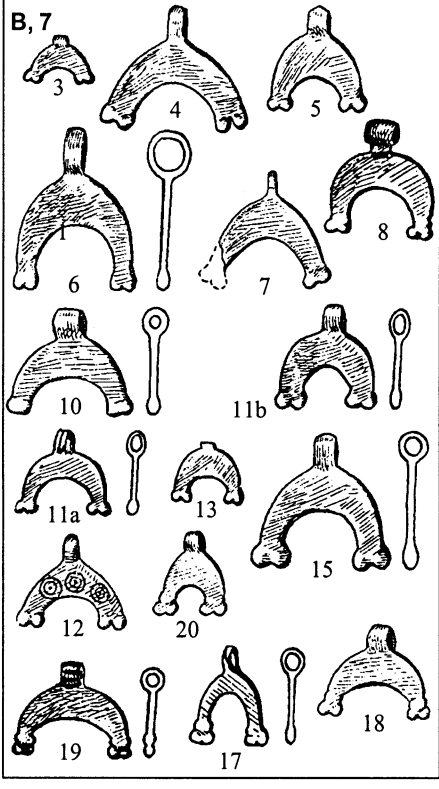
S u b t y p e A. Openwork pendants (65 specimens from 15 find spots). Most of the artifacts are from western and central Lithuania (Map 1). Just 2 pendants have been found north of the river Daugava. Because of different openwork pattern subtype A could be divided into some clusters.

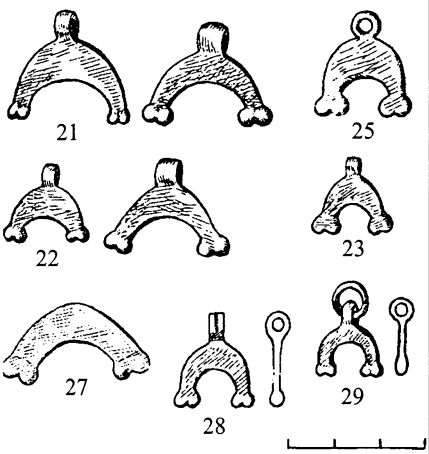
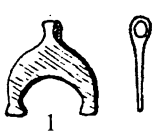
The most numerous is the first cluster. There are more than 30 finds from 7 find spots. They have a distinguishing feature, i.e. partitions. The body of the pendants is rounded triangle-shaped with a low base. They were spread in the strip of littoral Lithuania, especially in the area of Klaipėda and Šilutė. Only 1 pendant was found in Latvia, in Mūkukalns hillfort.

SUBTYPE, VARIANT	FIND SPOT (the numbers in the brackets correspond to the numbers on the map)	Quantity of pendants	Quantity of knobs
A, 1 	1a. (2) Aukštakiemiai, gr. 330 1b. (2) Aukštakiemiai, gr. 330 2. (5) Dauglaukis, gr. 110, Baltų, cover 3. (18) Klaipėdos surr. LNM 180: 2 4a. (53) Stragnai, LNM 38: 942 4b. (53) Stragnai, LNM 38: 1709 4c. (53) Stragnai, LLM 1958, Fig. 145 4d. (53) Stragnai, LLM 1958, Fig. 189	1 1 17 3 1 1 1 2 *in all 27*	3 4 4 3 3 3 3 3
A, 2 	1. (5) Dauglaukis, gr. 39, VDKM 2. (21) Kurmaičiai, gr. 8, VDKM 1522:52 3a. (53) Stragnai, LLM 1958, Fig. 189 3b. (53) Stragnai, LLM 1958, Fig. 99 4. (68) Žviliai, gr. 297, LNM	2 11 1 6 1 *in all 21*	4 4 4 3 3
A, 3 	1. (43) Pryšmančiai, KKM 2. (65) Veršvai, gr. 197, VDKM 1590: 1559	1 2 *in all 3*	2 4
A, 5	1. (22) Lavija (Kurzeme), Katalog, 1896, Taf. 16: 2	3 *in all 3*	3
A, 6 	1. (37) Pajuostis, b. m. 13, gr. 3, LNM 554: 133 2. (64) Vaitiekūnai, gr. 4, LNM 631: 4, 6, 7	2 3 *in all 5*	4 5
A, 7 	1. (31) Mūkukalns, LVM 163184: 380 2. (66) Virunuka, AI 4161: 569	1 1 *in all 2*	2 2
A, ? 	1. (9) Dūkštas, VDKM 750: 82 2. (61) Upytė, gr. 7, VDKM	1 3 *in all 4*	5

SUBTYPE, VARIANT	FIND SPOT (the numbers in the brackets correspond to the numbers on the map)	Quantity of pendants	Quantity of knobs
B, 1 	1. (48) Rūdaičiai, VDKM 1702: 5	1	3
	2. (53) Stragnai, LII RS, neg. 909, LNM 38: 1706	2 *in all 3*	3
B, 2 	1. (4) Boķi, gr. L, Moora H. 1928, T af. VIII: 2	2	4
	2. (10) Dusetos, VDKM 659: 6–11	6	3
	3. (14) Gibaičiai, ŠAM I-A, 102: 10	1	3
	4. (15) Gružos, VDKM 1136: 8–12	5	4
	5. (25) Linksmėnai, TrIM GEK 366, A 215	17	3
	6. (32) Muoriškiai, b. m. 3, BKM 5029: 5–6	2	4
	7. (38) Pakalniškiai, LNM 39: 164	14	4
	8. (57) Šarkai, LNM 528: 141	1	3
	9. (58) Šernai, Sb. Prussia, 1892, pl. XVI	3	4
	10. (67) Žadavainiai, LII RS, Fig. 2880	2	3
	11. (68) Žviliai, gr. 34, LNM	2 *in all 55*	4
B, 3 	1 (23) Lazdininkai distr., LII RS, Fig. 1615	2	3
	2. (28) Marvelė, gr. 103, VDKM	3	5
	3. (32) Muoriškiai, b. m. 3, BKM 5029: 1–4, A 481	4	4
	4. (42) Połowie, Kohn, Fig. 138	13	3
	5. (47) Razbuki, LVM RLB 382	17 *in all 39*	3

SUBTYPE, VARIANT	FIND SPOT (the numbers in the brackets correspond to the numbers on the map)	Quantity of pendants	Quantity of knobs
B, 4 	1. (4) Boķi, b. m. 8, LVM 11777: 654, 680, 698	4	3
	2 (16) Kaniūkai, PMA–IV–422/9	1	3
	3a. (24) Lejnieki, b. m. 1, gr. 3, LVM 12577: 2	12	3
	3b. (24) Lejnieki, MNM 19880: 2	2	3
	4. (47) Razbuki, LVM 8543: 2, 8544: 2	2	3
	5. (51) Sausnēja, b. m. 1, LVM 1640–1643	4	3
	6. (53) Stragnai, LNM 38: 488, 1705	2	3
		in all 27	
B, 5 	1. (3) Bandužiai, MLIM 48.233, 48.234	2	3
	2a. (4) Boķi gr. M, LVM (VVM) 2114	4	3
	2b. (4) Boķi b. m. 8, gr. 19, LVM 11777: 430	9	3
	2c. (4) Boķi b. m. 8, LVM 11777: 666, 679, 698	3	3
	3. (6) Daugmale, LVM 9964: 1403	1	3
	4. (11) Ekeberga, HNM: 8085: 1, 2, 8201: 1, 13080: 44	4	3
	5a. (13) Gailīši, b. m. 1, gr. F, LVM 8335: 5–9	5	3
	5b. (13) Gailīši, LVM 12565, V 8333: 7	4	3
	6. (22) Lavija, RK, Taf. 16: 2	1	3
	7. (24a) Lejasbitēni, Черных Е. Н. et all, Taf. 53: 30 (65)	1	3
	8. (24b) Lejasziedi, Черных Е. Н. et all, Taf. 53: 29 (103)	1	3
	9. (29) Melderišķi, b. m. 2, gr. 1, LVM 8241: 1	12	3
	10a. (32) Muoriškiai, b. m. 1, BKM 7886: 1–2, A 540	2	3
	10b. (32) Muoriškiai, b. m. 2, BKM 5022, A 473	1	3
	10c. (32) Muoriškiai, b. m. 3, BKM 5029, A 481	1	3
	10d. (32) Muoriškiai, b. m. 4, gr. 4, BKM 7888, A 542	1	3
	11a. (39) Pāķi, b. m. 1, LVI	1	3

SUBTYPE, VARIANT	FIND SPOT (the numbers in the brackets correspond to the numbers on the map)	Quantity of pendants	Quantity of knobs
	11b. (39) Pāķi, b. m. 2, LVI	5	3
	12. (40) Paliečiai, LNM 433: 11	5	3
	13. (54) Strēlnieki, b. m. 2, LVM 419	3	3
	14. (56) Sunākste, Moora H. 1929, Jelg. M 2061	6	3
	15. (59) Turdvaris RKM 2598, A–I–392	1	3
	16. (62) Užpaliai, VE 793/11	3	3
	17a. (63) Vaineikiai, b. m. 2, gr. 1, LNM	14	3
	17b. (63) Vaineikiai, b. m. 2, gr. 5, LNM	16	3
	17c. (63) Vaineikiai, p. 2, LNM	2	3
	18. (66) Virunuka, AI 4262: 317	1	3
		in all 109	
B, 6	1a. (5) Dauglaukis, gr. 25, VDKM	8	4
	1b. (5) Dauglaukis, gr. 39 (combined) VDKM	6	3
		in all 14	*4*
B, 7 	1. (1) Aarla, Moora H., 1938, p. 249	1	2
	2a. (4) Boķi, b. m. 3, LVM 11777: 125, 145	2	2
	2b. (4) Boķi, b. m. 4, gr. 13, LVM 11777: 254	2	3
	3. (11) Ekeberga, HNM: 13080: 48	1	2
	4. (12) Etterkilen, HNM 7751: 1	1	2
	5a. (13) Gailīši, b. m. 1, gr. K, LVM 8340: 4	1	2
	5b. (13) Gailīši, LVM V 8340: 4	1	2
	6. (17) Kivivare, AI2011: 31, 33, 34, saarema M 2011: 32	4	2
	7. (19) Köönikänmäki, HNM 3441:32	1	2
	8. (20) Kulai, VDKM 1190: 10	1	3
	9. (26) Loosi, AI 4375: 68	1	2
	10. (27) Luige, Ai 1871	1	2
	11a. (28) Marvelė, gr. 775, VDKM	1	2
	11b. (28) Marvelė, gr. 821, VDKM	3	2
	12. (30) Mežotne, LVM A 11429: 1117, 1297	2	2
	13. (32) Muoriškiai, b. m. 4, gr. 4, BKM 7888, A 542	1	2
	14. (34) Ojaveski, Friedenthal, 1935, abb. 13: 40	1	2
	15. (36) Pada, AI 2655: 177, 178, 184	3	2
	16. (35) Pääkköönmäki, 7115: 8	1	2

SUBTYPE, VARIANT	FIND SPOT (the numbers in the brackets correspond to the numbers on the map)	Quantity of pendants	Quantity of knobs
	17. (37) Pajuostis, b. m. 11, LNM 554: 107, 108	2	3
	18. (39) Pāķi, b. m. 3, LVI	9	3
	19. (41) Perkūniškė, b. m. 1, gr. 2, LNM 489: 2	1	3
	20. (44) Pungi, b. m. 5, LVI	1	3
	21. (45) Purtse-Matka, Friedenthal A. 1932, abb. 1: 3	2	2
	22. (46) Pūsdvaris, LNM 37: 1718	7	2
	23. (48) Rūdaičiai I, gr. 50, VDKM 1700:10	1	2
	24. (50) Salenieki, LVM 10875: 79	1	2
	25. (52) Slate, gr. 1, b. m. 1, gr. U, LVM VVM 2156	1	2
	26. (55) Stūri, LVM 13072: 6	15	2
	27. (60) Unipiha II, GEG 1995: 35	1	2
	28. (62) Užpaliai, VE 793: 11, 12	9	2
	29. (66) Virunuka, AI4262: 640	1	2
		in all 80	
B, ? 	1. (7) Daujėnai, b. m. 3, gr. 11, LNM: 505: 15	3	
	2. (8) Dignāja, Šnore E. 1939, att. 13: 5	1	
	3. (33) Newiadoma, Latvijas Saule, 1927, p. 638, Fig. 17.	8	
	4a. (39) Pāķi, b. m. 1, LVI	2	
	4b. (39) Pāķi, b. m. 5, LVI	1	
	5. (48) Rūdaičiai II, gr. 8, KKM GEK 5385	1	
	6. (49) Saha, Spreckelsen A. 1907, p. 413	1	
		in all 17	

Pl. 1. The half-moon pendants with knobs. Subtypes and variants.

The second cluster is rather similar to the first one. There are 11 specimens from 5 find spots. They also have partitions. But the bodies of the pendants are more regularly lunulae-shaped, and the openwork pattern is narrower and very curved. All pendants of this group were concentrated in central Lithuania (Pajuostis, Upytė, Veršvai, Vaitiekūnai and Dūkštas*).

* The exact finding place is unknown. In KVDM are stored artifacts from the same locality, which have nothing in common with Dūkštas hillfort in the eastern part of Lithuania, Ignalina distr. On the basis of the metalwork construction analogy with Vaitiekūnai pendants, the half-moon pendant should be looked for in the neighbouring surroundings.

There are 21 pendants from 4 places of the third cluster. The openwork pattern differs from the first two. The bodies of the pendants are decorated with small triangles. They were found in western Lithuania (17 specimens), Latvia (3 specimens) and Estonia (1).

S u b t y p e B. It includes simple pendants (344 pendants from 60 find spots), which differ from the subtype A in non-openwork, solid, more or less regular lununae-shaped bodies. Only part of Newiadoma pendants, which have the bending inward bodies (Latvijas Saule 1927: 638, Fig. 17) makes an exception. The pendants of subtype B were spread all over the discussed region. In western Lithuania, where openwork pendants were more popular, the metalworks of subtype B were relatively fewer. They were most popular in historical lands of Semigallians and Selonians.

There are 2–5 knobs of a different shape on each ending of the bodies of the pendants. 7 variants could be discerned (1 variant covers profile knobs, 2 – sharp horn-shaped knobs, 3 – cylindrical knobs, 4 – rounded horn-shaped knobs, 5 – ball-shaped knobs, 6 – cubic knobs, 7 – flat knobs). Such division is relative. There could be a more detailed division or some variants could be united under one unit. But it has been decided to keep to this level of separation, because it reveals the change of stylistics in different regions best.

V a r i a n t 1 consists of pendants with profile knobs (30 pendants from 5 find spots). 27 openwork pendants with a partition and 3 simple pendants belong to this variant. The 1st variant was spread exclusively in the monuments of littoral Lithuania. The pendants from Stragnai are very characteristic (Fig. 4). Obviously, they were manufactured in the surroundings of Šilutė and Klaipėda.

V a r i a n t 2 includes sharp horn-shaped knobs. There are 76 pendants (21 of subtype A and 55 of subtype B) from 14 find spots. A big part of the pendants has 4 knobs on each ending, although there are rather enough metalworks within 3 knobs. Variant 2 was spread almost exceptionally in Lithuania. There are only 2 pendants with horn-shaped knobs known in Latvia (Boķi).

V a r i a n t 3 comprises cylindrical knobs (42 pendants from 7 find spots). There are just 3 openwork pendants decorated with massive cilindrical knobs (Pryšmančiai and Veršvai). Others pendants are of subtype B. There are 3 neck-rings with 38 pendants from Lazdininkai surroundings, Postawy and Razbuki find spots. This type of neck-rings (the 5th group according to M. Michelbertas; Michelbertas 1986: 93, 95–96) was very popular in the lower Nemunas culture. Consequently, they could have been manufactured here, as well as the neck-ring from Newiadoma. The pendants from Marvelė, grave 103 end even in 5 distinct cylinders.

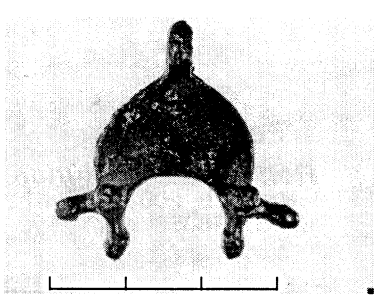


Fig. 4. The pendant from Stragnai, LNM 38:1706.

V a r i a n t 4 embraces rounded horn-shaped knobs. This group is in intermediate position between sharp-horn knobs and ball-shaped knobs. 27 specimens from 6 monuments are exceptionally pendants of subtype B. As a rule, they have 3 knobs on each ending. Contrary to the first 3 variants, these metalworks are common in Latvian monuments (24 specimens). Only some of them are from Lithuania.

V a r i a n t 5 consists of ball-shaped knobs, which are 3 on each ending of the pendants. There were 112 specimens from 18 find spots. 109 of them belong to subtype B and only 3 to the openwork pendants. The latter were found within the collection of the Latvian metalwork. Half-moon pendants with ball-shaped knobs were distributed equally in Lithuania and Latvia. They were the most characteristic finds in the Culture of the burial mound with the stone circle, especially in its eastern part. Only 2 pendants were from littoral Lithuania, 1 from Estonia and 4 from Finland.

V a r i a n t 6 includes cubic knobs (19 pendants from 3 monuments). This group of pendants is rather conditional. It has some common features with the 3rd and the 5th variants. It could be called "pendants with short cylindrical knobs or rounded cubic-shaped knobs". 15 pendants of 2 neck-rings from Dauglaukis, graves 25 and 39 are decorated with small knobs (the lower knobs of the pendants from grave 39 were profile). Similar knobs are on the endings of the openwork hangers from Vaitiekūnai. 2 pendants of subtype A from Pajuostis end in 4 massive knobs.

V a r i a n t 7 comprises flat knobs (82 specimens from 30 monuments). Although this variant is not so numerous as the 5th one, but the pendants are found more frequently. Most of them are of subtype B. There are only 2 openwork pendants (Mūkukalns, Latvia and Virunuka, Estonia). Usually they were two-knob, more seldom three-knob pendants. The latter were spread just in Lithuania and Latvia. The size of such pendants is very various. There are very small, 1.4×1.8 cm artifacts, as well as quite massive which are 2.6×3.5 cm big, etc. The latter are characteristic of the northern districts of Estonia and Finland. So far there was an opinion that pendants of B7 were characteristic only of the Finnish western regions (Eesti 1982: 230; Hackmann 1905: 206; Moora 1938: 249). It appearred, that they were no less popular in the Baltic countries. 26 pendants are from 8 Lithuanian find spots, 36 from Latvian 8 places, 16 from Estonian 9 places, 4 from 4 Finish monuments. So, there were even more pendants than in the northern areas and contrary to the latter they were not two-knob, but three-knob pendants.

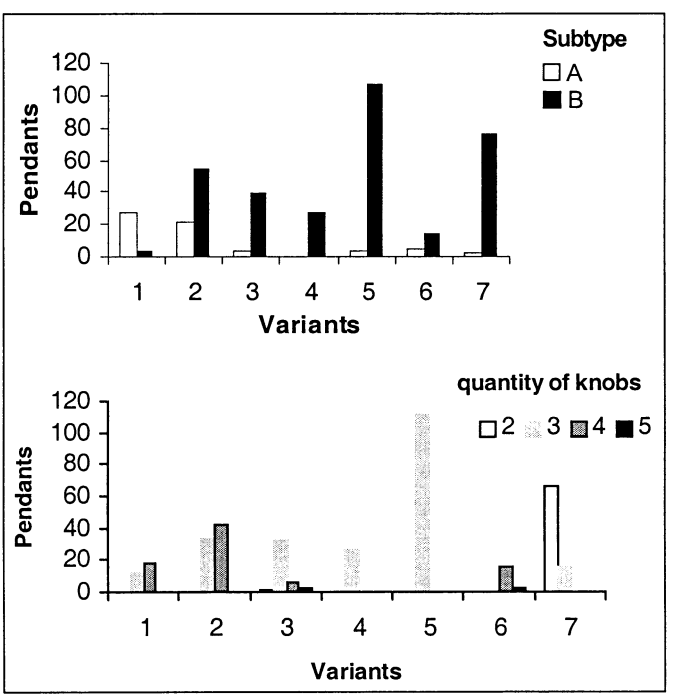


Fig. 5. Relation between: subtypes and variants (a); variants and quantity of knobs (b).

At first sight the chaotic decoration of the pendants with different shaped and various number of knobs is not completely accidental. Subtype A is common in the 1st and the 2nd variants (Fig. 5). The A1 pendants make up

42%, and A2 – 32% of all openwork pendants. The other shapes of knobs are not usual or are missing. While the 1st variant inside subtype B is very rare. There are only 3 B1 pendants (1%). The most characteristic are the B2, B5 and B7 pendants (16%, 32% and 23% of all non-openwork pendants).

The recurrence of the identification features reveals the change of the stylistics in consecutive order. The openwork body was replaced by the non-openwork lunula. The long knobs were becoming shorter, rounder, flatter, and the quantity of knobs was becoming lesser moving from the southwest to the north – northeast.

Some Aspects on Pendant Manufacturing

The production of pendants was not complicated because of the simplicity of metalwork shapes. Most artifacts were cast and only the bodies of Pakalniškiai pendants seem to have been cut out from metal sheet. Though no casting mould of such pendants was found the uniformity of pendants of each necklace, however, makes us assume that they were cast in multifold moulds. The pendants are supposed to have been cast in two-piece mould (at least one piece had to be made of clay). In order to produce a mould in loam, a model was required. The *cire perdue* or lost wax method was simple and has been known since the Bronze Age, but it was not suitable for mass production, because both model and mould used to be lost. (Brinch Madsen 1984: 91–2). So, solid models of clay, wood, metal, antler, etc. might be employed, which could be removed and pressed into pliable and damp loam repeatedly. A big part of these patterns was not undercut. Another plate of the mould used to be plane, so the backside of a pendant had a plane surface. Sometimes only bodies with knobs were cast. An ear was fixed later.

The Eastern Baltic metallurgy started to use stone moulds more widely only in the Late Iron age and they were used mostly for small tin metalwork (Volkaitė-Kulikaus-kienė, Jankauskas 1992: 161–162; Сваране 1985; Дайга 1960: 84–85, табл. 2). As the construction of the artifacts under discussion was not complicated, necklaces could have been cast in moulds of some mineral origin as well. A soapstone mould of a half-moon pendant was found in Haithabu in Germany (Fig. 6). As the outer construction of the pendant is rather similar to the one described the process of manufacturing could have been analogous (Lønborg 1998: 31, Fig. 17–18).

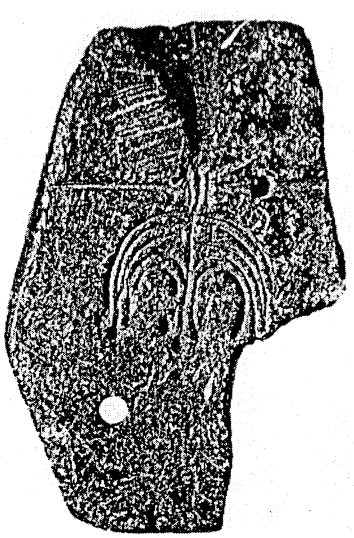


Fig. 6. The soapstone mould from Haithabu (Germany) (according to: Lønborg 1998: Fig. 17).

Obviously there could have been all conditions for the mass production of such necklaces even in the Roman period. But the outer characteristics show differently. The comparison of 2 necklaces of the same variant shows that the pendants differ (Fig. 2: 2, 3). One can suppose that after the necklace had been made the mould and the model were thrown away, and in case of need of a new ornament they were made anew. This explains the fact that no two necklaces of identical half-moon pendants have been found

yet. Consequently the production was not frequent. Several or even more years' could have separated the production of 2 necklaces. This fact confirms manufacture made to order in the Roman period.

The originality of each adornment shows that different craftsmen in their community created them. Though it is too early to speak about the society stratification in the Roman period. Irregular metal supply, lack of raw, slight purchasing power and similar conditions did not ensure constant demand of craftsmen work and subsisting on it. Jewelers needed a lot of raw material for the production of some pendant necklace. Because of lack of material artifacts used to be made from differently obtained metal: raw material, scrapmetal, rejects of production, old shabby artifacts. The process of production could be imagined as the casting of the mentioned metal in parts in small crucibles. In this case the metal of one necklace pendant should be greatly heterogeneous. For this purpose some analysis was carried out to reveal the metal alloy composition. Metal alloys of 6 necklaces from Dusetos, Paliečiai, Pakalniškiai, Pūsdvaris, Vaineikiai were investigated. One can see a considerable homogeneity with a standard deviation inside each necklace (Fig. 7, 8, 9, pl. 2) (detailed findings are presented further). There were only some pendants with different metal composition. Most heterogeneous were metal alloys from Dusetos. But there the highest values of lead were found, and this feature distinguishes the necklace from others.

Jewelers created their works with the greatest responsibility. With the model of the future adornment in their mind they both sought to use as uniform metal alloy as it was possible and to create a necklace consisting of uniform pendants both in morphological and physical characteristics. The authors of the things had deep knowledge of metal treatment. Therefore they could not have been ordinary members of the community, who sometimes were engaged in foundry work apart from their direct daily occupation. They should have been professionals. Unfortunately there are too few evidences to prove this, but there is a great possibility of itinerant jewelers (Brinch Madsen 1984: 95; Michelbertas 1986: 214). Itinerant craftsmen used to throw away moulds for casting because they did not need any additional burden travelling. Besides they never knew what order to cast they would get in another place.

Great experience of archeometalurgy shows that there is a great possibility to find the uniformity in metal composition of a single center of production. "It is surely to be expected that if we study the composition of all the bronzes [...], or the metals from a single homogeneous cemetery [...], or all examples of a homogenous type [...], we should find that the greater number of specimens represents one homogenous metal group..." (Waterbolk, Butler 1965). Arrhenius suggests "that the metal artisan aimed at a homogeneous alloy because uniform alloys have uniform physical reactions with similar melting temperatures, expansion and oxidizing developments. Metal workers probably had a relatively good knowledge of metallurgy and would have been able to produce uniform alloys. Analyses of Greek and Roman bronzes point to such a knowledge" (Forshell 1992: 59). Though there have not been carried out purposeful tests on such examination in Lithuania, there are some remarks confirming coincidence of artifact types and alloys composition (Merkevičius 1973: 72; 1984: 127–128). We made sure of this when we checked the metal composition of separate necklace pendants. Each necklace was made of quite homogeneous metal alloys. But when we compared the results of different necklaces, the data received had differed

more or less. Analyzing the same type brooches from Öland (Sweden) of the Roman and Migration periods, U. Näsman drew the conclusion that the craftsmanship of that time was not developed enough: "the big variation in the alloys supports the assumption that the craftsmen worked with low precision and/ or that they used waste bronzes, alloy of which they were not aware of. A centralized, technically conscious fabrication cannot be deduced from the diagram" (Forshell 1992: 59, tab. 5–1).

The artifacts from the Roman period are less known as metal compositions in Lithuania. This was done the first time when the same type material from the Old Iron age was analyzed consciously. Further we are going to present the results of the investigation carried out by dr. Eimutis Matulionis in the laboratory of the Institute of Chemistry. The alloys composition has been identified with the aid of the electron probe microanalyzer (JEOL JXA-50A). Having in mind the possible heterogeneity in the composition of the objects, corrosian aspects, tendency of element disperse in alloys, reliability of methods and results of single laboratory etc. (Forshell 1992), the conclusions drawn are not final and unchangeable.

68 pendants from 12 Lithuanian monuments have been investigated in 71 tests. Metal of the lunula pendants does not differ from the general context of the Eastern Baltic old metal works (Черных, Хоферте, Барцева 1969). All wares examined were made of artificial multicomponential alloys with either zinc (50 specimens – an. No 8–16, 31–71) or lead (19 specimens – an. No 3, 4, 6, 7, 18–30) predominating. 2 additional pendants were made of alloys with tin predominating (an. No 1, 17). It does not mean that the alloys inside the group are identical. On the basis of their metal composition several groups could be distinguished. In this case a new question can arise, namely, if there is any interdependence between the variants of the artifacts and the metal composition. From 68 investigated pendants 31 are of variant B5, 21 (22 tests have been carried out) of B2, 8 of B7, 4 (6 tests have been carried out) of B3, 3 of A6 and 1 of A2. In spite of the great number of analyzed metalwork, the reliability of the conclusions decreases because

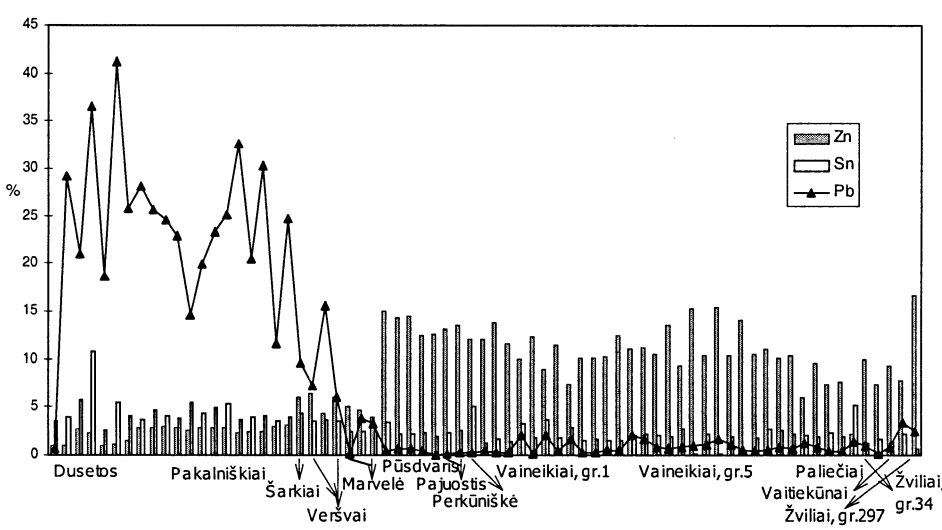


Fig. 7. The results of metal analyses. Graphic presentation.

the bulk of the necklace pendants could be regarded as one unit. Besides, not all variants are represented equally.

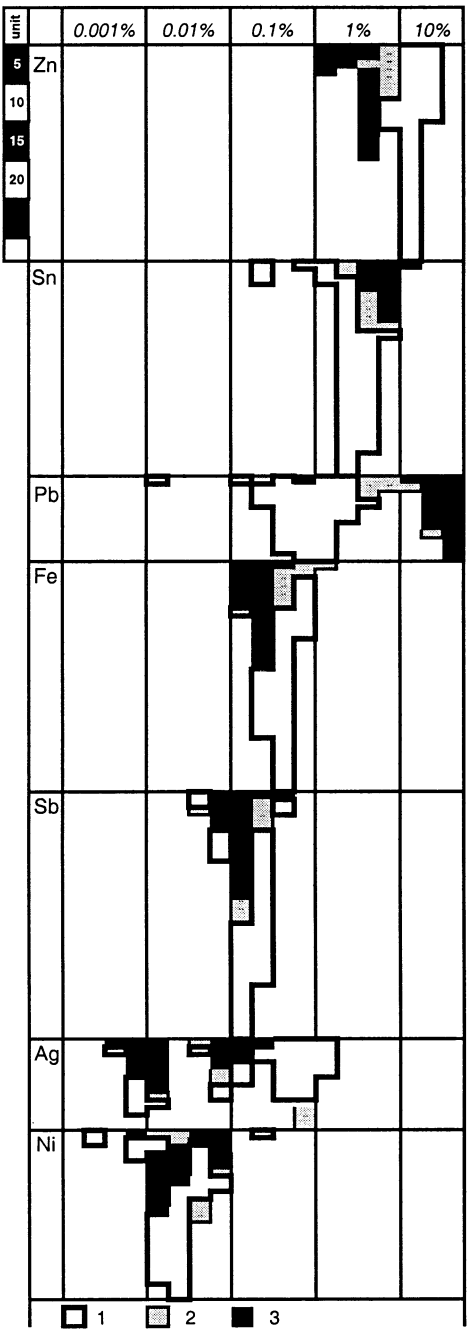


Fig. 8. Impurity pattern of 68 crescent-shaped pendants according to the method of H. T. Waterbolk (1965).

The alloys from Paliečiai, Perkūniškė, Pūsdvaris, Pajuostis, Vaineikiai, Vaitiekūnai and Žviliai, grave 34 belong to the most numerous group with Zn predominating. The ratio of the main admixtures with copper (Cu) is more or less homogeneous: Zn/Cu – ≈0.1, Sn/Cu – 0.01–0.05, Pb/Cu – 0.0001–0.02. Of 31 variant B5 27 pendants, all pendants of B7, all of A6 and 1 of B2 pendants have the mentioned composition.

One can see that both necklaces from Vaineikiai barrow cemetery were made following the same jewelry tradition. The ornaments made by 2 different models, but the differences were not distinct. Both necklaces belong to the same B5 variant (Fig. 2: a, b) and were cast from quite homogeneous metal (average amount of Zn was 10.83% and 11.64%, Sn – 1.98% and 1.75%, Pb – 0.4% and 0.24%). The fact that they were found in the same barrow mound reinforces the possibility that they originated from one pair hand. The necklace from Paliečiai consists of the same variant B5 pendant and has the same range of the main metal elements (except one pendant, which has tin more than zinc). Despite of that outwardly they are not similar to Vaineikiai pendants, besides their values are a little different (at an average Zn – 7.65%, Sn – 2.057%, Pb – 0.71%).

Pajuostis and Pūsdvaris pendants belong to the same variant B7 and were made of quite homogeneous brass (average amount of Zn was13.24% and 13.74%, Sn – 2.44% and 2.39%, Pb – 0.17% and 0.43%). Not far from Pūsdvaris one pendant of the same variant B7 was found in Perkūniškė. The composition of the admixture does not differ distinctly (Zn – 12.04%, Pb – 0.25% and a little bit higher Sn – 4.989%).

	No	Cu	Zn	Sn	Pb	Fe	Sb	Ag	Co	Ni	Mn	Au	Bi	As
Dusetos	1	94.412	1.003	3.548	0.726	0.081	0.089	0.067	0	0.059	0.016	0	0	0
	2	65.457	0.969	4.019	29.175	0.083	0.096	0.121	0	0.066	0.014	0	0	0
	3	70.049	2.722	5.754	21.013	0.213	0.117	0.075	0	0.043	0.013	0	0	0
	4	49.671	2.365	10.72	36.608	0.367	0.202	0.044	0	0	0.023	0	0	0
	5	77.386	0.976	2.542	18.729	0.118	0.06	0.118	0	0.071	0	0	0	0
	6	51.935	1.042	5.443	41.208	0.151	0.114	0.054	0	0.052	0	0	0	0
	7	68.248	1.476	4.085	25.735	0.188	0.114	0.119	0	0.034	0	0	0	0
Marvelė	8	91.479	5.021	2.398	0.143	0.763	0.124	0.057	0	0.015	0	0	0	0
	9	88.577	4.592	2.497	3.823	0.338	0.121	0.03	0	0.021	0	0	0	0
	10	89.503	3.997	2.476	3.338	0.442	0.193	0.043	0	0.009	0	0	0	0
Pajuostis	11	83.86	13.046	2.278	0.125	0.356	0.122	0.134	0	0.078	0	0	0	0
	12	83.334	13.441	2.616	0.216	0.262	0.078	0.043	0	0.011	0	0	0	0
Paliečiai	13	90.194	6.043	1.978	1.214	0.318	0.156	0.049	0.007	0.039	0.003	0	0	0
	14	87.036	9.556	1.939	0.838	0.36	0.145	0.11	0	0.011	0.003	0	0	0
	15	89.171	7.398	2.343	0.407	0.322	0.133	0.159	0.001	0.035	0.002	0	0.026	0.004
	16	89.014	7.612	1.969	0.402	0.564	0.133	0.106	0.002	0.197	0	0	0	0
	17	90.533	2.134	5.221	1.392	0.194	0.365	0.149	0	0.005	0	0.006	0	0
Pakalniškiai	18	65.095	2.883	3.629	28.055	0.184	0.128	0.004	0.001	0.022	0	0	0	0
	19	66.546	2.923	4.599	25.657	0.181	0.067	0.008	0	0.019	0	0	0	0
	20	68.092	2.996	4.073	24.577	0.173	0.063	0.011	0.003	0.012	0	0	0	0
	21	70.095	2.907	3.821	22.892	0.165	0.097	0.012	0	0.009	0.001	0	0	0
	22	77.099	2.652	5.397	14.56	0.151	0.119	0.007	0	0.016	0	0	0	0
	23	72.546	2.922	4.389	19.884	0.18	0.066	0.005	0.001	0.008	0	0	0	0
	24	68.739	2.81	4.893	23.271	0.164	0.1	0.012	0	0.01	0	0	0	0
	25	66.433	2.897	5.26	25.118	0.176	0.089	0.013	0	0.014	0	0	0	0
	26	61.153	2.384	3.628	32.583	0.139	0.091	0.007	0	0.014	0	0	0	0
	27	72.869	2.432	3.964	20.477	0.137	0.099	0.011	0	0.009	0.001	0	0	0
	28	62.969	2.403	4.102	30.31	0.134	0.061	0.007	0	0.013	0	0	0	0
	29	81.632	2.96	3.59	11.53	0.166	0.1	0.008	0.002	0.01	0.002	0	0	0
	30	71.911	3.092	3.9	24.724	0.152	0.102	0.007	0.002	0.008	0	0	0	0
Perkūniškė	31	82.241	12.04	4.989	0.25	0.288	0.182	0	0	0.01	0	0	0	0
Pūsdvaris	32	80.993	14.94	3.344	0.457	0.207	0.05	0.005	0	0.002	0.003	0	0	0
	33	82.266	14.338	2.238	0.65	0.43	0.045	0.006	0.002	0.022	0.003	0	0	0
	34	82.269	14.437	2.158	0.666	0.405	0.039	0.007	0	0.018	0	0	0	0
	35	84.571	12.436	2.259	0.364	0.307	0.055	0.006	0	0	0.002	0	0	0
	36	85.062	12.544	1.954	0.013	0.363	0.041	0.005	0.002	0.015	0.001	0	0	0
Šarkiai	37	79.407	5.939	4.354	9.586	0.332	0.35	0	0	0.031	0	0	0	0
Vaineikiai	38	85.683	12.038	1.186	0.363	0.463	0.143	0.082	0	0.036	0	0	0	0
b.m.2, gr.1	39	83.685	13.743	1.6	0.276	0.432	0.14	0.056	0.004	0.024	0	0	0.039	0
	40	85.967	11.609	1.423	0.28	0.521	0.122	0.06	0.001	0.017	0	0	0	0
	41	84.113	9.899	3.305	2.079	0.343	0.157	0.081	0.005	0.018	0	0	0	0
	42	85.288	12.24	1.715	0.163	0.364	0.108	0.075	0.001	0.021	0	0	0.026	0
	43	84.873	8.857	3.713	1.983	0.24	0.243	0.062	0.005	0.019	0.004	0	0	0
	44	85.705	11.464	1.771	0.415	0.379	0.189	0.066	0	0.012	0	0	0	0
	45	87.549	7.411	2.904	1.594	0.327	0.128	0.046	0.001	0.028	0	0.012	0	0
	46	87.519	10.032	1.559	0.324	0.417	0.075	0.057	0	0.018	0	0	0	0
	47	87.422	10.054	1.571	0.275	0.473	0.098	0.086	0	0.018	0.003	0	0	0
	48	86.975	10.23	1.548	0.559	0.45	0.134	0.07	0.011	0.021	0.002	0	0	0
	49	84.723	12.437	1.539	0.432	0.483	0.212	0.092	0.002	0.023	0.004	0	0.052	0
Vaineikiai	50	84.391	11.034	2.03	2.097	0.228	0.136	0.066	0	0.018	0	0	0	0
b.m.2, gr.5	51	84.56	11.212	2.137	1.624	0.261	0.158	0.033	0	0.013	0.003	0	0	0
	52	86.252	10.523	1.996	0.829	0.194	0.19	0.004	0	0.012	0.001	0	0	0
	53	83.529	13.463	1.875	0.636	0.272	0.171	0.044	0	0.01	0	0	0	0
	54	86.714	9.321	2.674	0.839	0.237	0.166	0.034	0	0.014	0	0	0	0
	55	83.171	15.305	0.152	0.97	0.23	0.132	0.025	0	0.012	0.002	0	0	0

	No	Cu	Zn	Sn	Pb	Fe	Sb	Ag	Co	Ni	Mn	Au	Bi	As
	56	86.04	10.318	2.177	1.092	0.193	0.147	0.025	0	0.006	0.002	0	0	0
	57	82.334	15.423	0.203	1.573	0.258	0.172	0.03	0	0.006	0.002	0	0	0
	58	86.304	10.39	1.873	1.055	0.22	0.106	0.039	0	0.012	0	0	0	0
	59	84.732	14.053	0.238	0.532	0.246	0.156	0.036	0	0.007	0	0	0	0
	60	86.702	10.561	1.755	0.462	0.386	0.093	0.031	0	0.01	0	0	0	0
	61	85.41	11.029	2.68	0.513	0.196	0.145	0.022	0	0.002	0.003	0	0	0
	62	86.039	10.033	2.616	0.878	0.217	0.154	0.043	0	0.019	0.003	0	0	0
	63	86.215	10.375	2.168	0.747	0.271	0.178	0.032	0	0.011	0.003	0	0	0
Vaitiekūnai	64	87.106	10.022	1.245	0.957	0.315	0.322	0	0	0.034	0	0	0	0
	65	90.244	7.425	1.579	0.171	0.386	0.179	0	0	0.016	0	0	0	0
	66	88.028	9.221	1.339	0.862	0.322	0.196	0	0	0.031	0	0	0	0
Veršvai	67	82.239	6.456	3.54	7.247	0.284	0.129	0.071	0	0.033	0.001	0	0	0
	68	75.904	4.316	3.698	15.484	0.318	0.183	0.063	0	0.034	0	0	0	0
	69	84.016	5.971	3.538	5.945	0.294	0.142	0.068	0	0.025	0.001	0	0	0
Žviliai, gr.34	70	85.573	7.727	2.128	3.463	0.895	0.158	0.012	0.002	0.043	0	0	0	0
Žviliai, gr. 297	71	80.144	16.591	0.614	2.404	0.113	0.08	0.009	0	0.044	0	0	0	0

Pl. 2. The results of metal analyses of the pendants.

The pendants from Marvelė, Veršvai, Šarkai and Žviliai, grave 34 could be united into another group. They were made of the alloys with zinc (Zn) over tin (Sn), but in this case lead is predominating or >3%: Zn/Cu – 0.04–0.07, Sn/Cu – 0.02–0.05, Pb/Cu – 0.001–0.2. The artifacts include 4 pendants with cylinder knobs (of A3 and B3) from central Lithuania and 2 B2 pendants from Samogitia (Šarkai and Žviliai).There is 1 more pendant from Žviliai cemetery, grave 297 which differ not only outwardly (A2 and B2), but in a metal composition as well. One could have expected that 3 openwork pendants of A6 from Vaitiekūnai (Central Lithuania) would be of the same metal composition as the others hangers from central Lithuania. But they were made of the alloys, which were closer to the first group.

The alloys of necklaces from Dusetos and Pakalniškiai (all pendants were of B2 variant), also one pendant of B5 from Paliečiai belong to the group of multicomponential alloys with tin (Sn) over zinc (Zn): Zn/Cu – 0.01–0.04, Sn/Cu – 0.04–0.2 and with lead (Pb) predominating (Pb/Cu – up to 0.79). In Dusetos and Pakalniškiai metalworks there is at an average 23.35% and 24.74% lead respectively; in some cases it reachs 41.21%. Only in 2 pendants from Dusetos and Paliečiai there is less lead (Pb – 0.72% and 1.39%) with tin dominanting in them (an. No 1, 17). Besides, similar metal composition and the same variant the necklaces from Pakalniškiai and Dusetos have an additional similarity, i.e. their bodies have been decorated which is very rare in subtype B. The half-moons from Dusetos are decorated with incisions, and the edge of one Pakalniškiai pendant is adorned with incuts. They could have been made according the same stylistical jewelry tradition.

The cultural-regional examination of the spread of the metal alloys has not been very handy because of an unequal quantity of the analyzed artifacts from different areas. Pendants only from 12 find spots were investigated. Unfortunately, it is not enough to clarify cultural and geographical spread of different metal compositions. 7 find spots belong to the Barrow Cultural area, 3 are from central Lithuania and 2 from Samogitia. There is no analysis from littoral Lithuania. Anyway, one can state that all metal alloys with higher values of zinc and lower values of tin have been found in northern Lithuania, in the Burial mound with stone circle

culture. In the same culture all alloys with tin over zinc and lead predominating were found. The central Lithuania and Samogitia finds are characterized by intermediate position: there is zinc over tin, but also rather high values of lead which drew them closer to the second group.

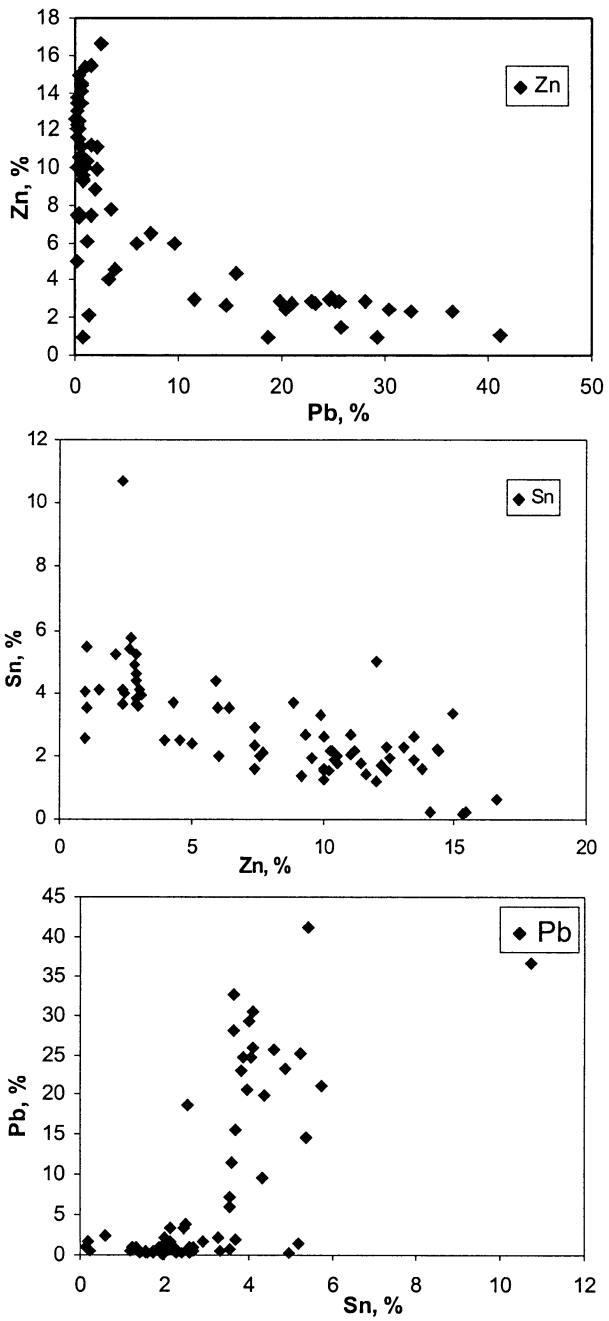


Fig. 9. Bivariate plots of the relationship between Zn, Sn and Pb.

Chronology

The traditional date of lunulae-shaped pendants with knobs is 3–4 c.c. AD. According to M. Michelbertas they appeared at the end of B_2/C_1 (the end of the 2 c. AD) and stayed in use until C_2 (300 AD – openwork pendants) and C_3 (350 AD and later – simple pendants) (Michelbertas 1986: 103). Only a small part of graves suits to define the chronology more precisely. In this case the data from the territory of the Finno-Ugrian population are less helpful. The Finno-Ugrian inhabitants used to scatter cremated remains and the inventory mixing various complexes of graves. That is why the only sets of graves (with not less than 2 dating finds) from Lithuania and Latvia are valuable, all in all 17 complexes.

The graves with coins from littoral Lithuania were of special value. In Rūdaičiai cemetery I, grave No 50 a coin of Antoninas Pijus (138–161 m.) was found.

Such coins were in use until 240 AD in Lithuania (here and hereinafter – Michelbertas 1986: 83). Neck-ring with cone-shaped terminals of the 2nd group and a bracelet with a triangular cross-section were found in the grave as well (Michelbertas 1968: 108), which should be dated the first half of the 3 c. AD. Of the same period should be the necklace with lunulae-shaped pendants from Kurmaičiai cemetery, grave 8. One coin of Faustina the II (coins were in use from 160 AD until approximately 245 AD), one coin of Aleksandras Severas (the second quarter of the 3 c. AD), a neck-ring with cone-shaped terminals of the 2nd group, 2 bracelets with a concave cross-section, headband with fringes and other artifacts were found in this grave (Kulikauskas 1951:fig.3). Even five coins of the middle of the 3 c. AD (two coins of Gordianas the III, one of Otacilija, one of Decijus, one of Trebonianas Galas) were found in Šernai cemetery, grave 67 (Lietuvos gyventojų 1972:121). Grave 330 of Aukštkiemiai should be dated the middle of the 3 c. AD. In the grave there were three Roman coins: of Adrianas (117–138 AD, such coins were in use until 250 AD), of Gordianas the III and of Otacilija (Lietuvos gyventojų 1972: 111), a spiral bracelet of the 1st group, a bracelet with a concave cross-section, two brooches with a bent foot and a neck-ring with a loop-and-hook clasp. Even 4 neck-rings with half-moon pendants were found in Dauglaukis cemetery. In grave 110 there were bracelets with a semicircular cross-section of the 1st group, a neck-ring with cone-shaped terminals of the 2 group, a bracelet with a concave-cross section, neck-ring with cone-shaped terminals of the 5th group, round openwork pins, cruciform ring, etc. The grave should be from 200–240 AD (Michelbertas 2000). The others neck-rings with pendants of the 5th group from Dauglaukis cemetery should be of the same period. In graves 25 and 39 there were a bracelet with a semicircular cross-section of the 2nd group, the necklace consisting of stick-shaped pendants, pins with a barrel-shaped head of the 2nd group and other artifacts. There was no chronological difference between various subtypes and variants of western Lithuania.

The grave implements of the Culture of the Burial mound with stone circle were scantier usually, without coins. That is why their chronological limits are wider and not so precise. The earliest pendants would be from Muoriškiai barrow 4, grave 4. A neck-ring with cone-shaped terminals of the 1st group and a pin with a wheel-shaped head of the 1st group enable to date this grave the end of the 2 c. AD – the beginning of the 3 c. AD. But the date is hardly precise, because it is based just on 2 things. There were a lot of artifacts from Iles Gailiši barrow, grave F. Beside the necklace with lunulae-shaped pendants there was a neck-ring with cone-shaped terminals of the 3rd group, a pin with a spool-shaped head of the 3rd group, a symmetrical brooch, sash-like bracelets with a rectangular and multiverged cross-section and rounded terminals (Moora 1931). All this set should be dated from the last quarter of the 3 c. AD. The necklace from Lejnieki barrow 1, grave 3 could be from the same period (Šnore 1993: 28).

In Central Lithuania, in Vaitiekūnai cemetery, grave 4, lunulae-shaped pendants were found aside the necklace of Akmeniai type and some bracelets with a triangular cross-section of the 1st group (Varnas 1984: Fig. 11). The grave is dated 225–300 AD. In Veršvai cemetery, grave 197, 2 openwork pendants were found within the Veršvai–Veliuona type necklace. Also there were some bracelets with a semicircular cross-section of the 1st group, neck-rings with trumpet-shaped terminals of the 2nd group, with loop terminals of the 2nd group, with spoon-shaped

clasp of the 2nd group, with cone-shaped terminals of the 3rd group (Puzinas 1941). These things belong to different periods and were put into the grave at the turn of the 3rd and the 4th c. AD. The latest pendants were found in Upytė cemetery, grave 7, together with a neck-ring with a spoon-like clasp of the 2nd group, a round openwork brooch, bracelets with a triangular cross-section of the 1st group and semicircular cross-section of the 3rd group (Kulikauskas 1951: 30–31, Fig. 18). The grave should be dated approximately 275–350 AD.

Sometimes the Roman period pendants could be reused later. For example, one can suggest that the pendants from the Late Iron Age Mežotne hillfort (Ginters 1939: Fig. 29) were produced in the Roman period, but later they were reused or made according to the Roman period tradition adapting them to the taste of that period. This hypothesis is based on the pendant decoration. Some doubled eyes have been engraved on their bodies. This way of decoration is not characteristic of early pendants.

More than 95% of all pendants could be dated the 3 c. AD. At the beginning of the 4 c. AD they became unpopular and disappeared about the middle of the 4 c. AD. The pendants from the Finnish territory seem to have been simultaneous. The most popular the 7th variant from Estonia and Finland have been known in Western Lithuania from the beginning of the 3 c. AD (Rūdaičiai).

Origin of Pendants

The chronological difference in various regions was very insignificant. Based on more early graves with a precise chronology in littoral Lithuania one can draw a conclusion about the earlier date of western pendants. So, when we inquire about the origin of pendants with knobs, we should have in mind the works of western Lithuania with the most popular subtype A. In looking for the prototypes of such artifacts one often pays attention to Roman ornaments of such type (Michelbertas 1986: 103; Moora 1938: 251). However the latter were considerably bigger, without knobs or with indistinctly profiled endings. Besides they were ornaments of a horse harness (Förrer 1907: Taf. 63: 142; Lawson 1982: 151–152, Taf. 9: 9; Szirmai 1994). We can find similar ones in the Baltic region: Augsburg-Oberhausen, surroundings of Šilutė, Barzdūnai, Žviliai, Stragnai etc. (Fig. 10) (Bezzenberger 1904: 112, Fig. 91; Nowakowski 1995: 65, Taf. VI: 11–13; Vaitkunskienė 1999: Fig. 214). There is a great possibility that Roman provinces specimens have incited the production of the discussed pendants. One can guess that the shape of half-moon and its apotropaic meaning (Fig. 11) (*apotro-paios* – diverting misfortunates) (Roman 1996:129, Fig. 656) was taken over.

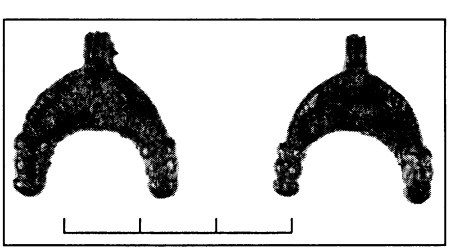


Fig. 10. The half-moon pendants from Stragnai, LNM 38: 1703, 1704.

Though, it seems that one should look for the origin of the decoration with knobs somewhere else. Enameled crescent pendants attract attention. Earlier it was supposed, that enamelled pendants appeared later than lunulae-shaped pendants with knobs and were produced after the fashion of the latter (Фролов 1980: 120–121). When the chronology of enamelled pendants had

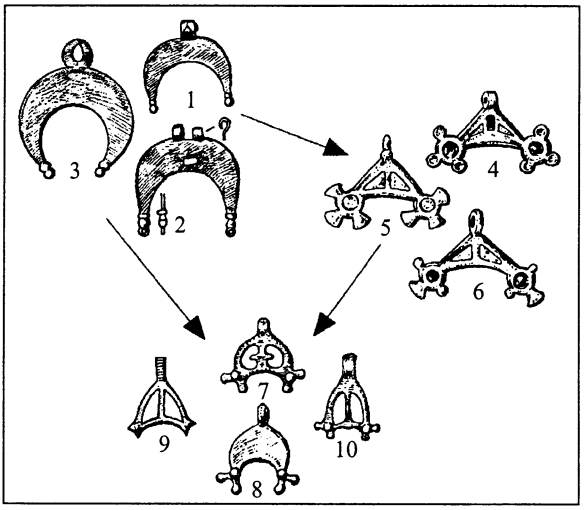
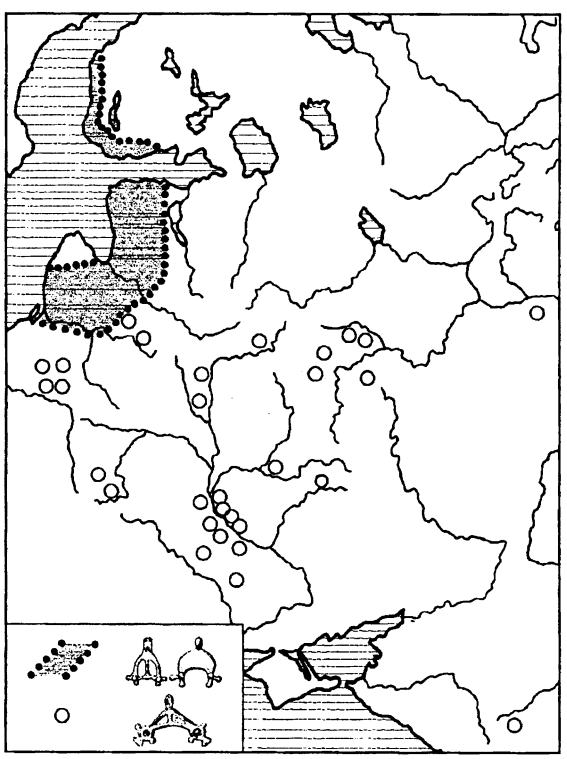


Fig. 11. The origin of half-moon pendants with knobs: The pendants of Roman pattern from Augsburg-Oberhausen (1), Mozurian region, "collection of Pisanskis" (2), surroundings of Šilutė (3); enamelled pendants from Mozurian region: Machary (4, 6), Vengoczevo (5); pendants with knobs from western Lithuania: Stragnai (7, 8, 10), Žviliai (9).



Map 2. Distribution of the enamelled pendants (according to: Фролов 1980: Fig. 5) and half-moon pendants with knobs.

been corrected Гороховский 1982; Bitner-Wróblewska 1991–1992) it became clear that both types appeared almost simultaneously. The earliest enamelled pendants were from the beginning of the 3 c. AD or even the end of the 2 c. AD (Bitner-Wróblewska 1991–1992: 125). But in western Lithuania no enalelled pendant was found. So, in Klaipėda-Šilutė region they were manufactured not following some tangible example but using knowledge of the same "school". One can guess that the idea of knob stylistics was born exactly in Mozurian region. There are some common traits between those two types. Firstly this is the principle of the decoration with knobs and, secondly, the partition construction is characteristic of the majority of subtype A pendants and of enamelled metalworks (Fig. 11). Both these types were widespread in the 3 c. AD. Indeed, the enamelled pendants were in use until the end of the 4 c. AD (Гороховский 1982: 131–134). Lunulae-shaped pendants with knobs disappeared earlier. Only some items from the first half of the 4 c. AD were found in Baltic lands. The spread areas of these two types of pendants were different, although the regions were close to each other (Map. 2). After certain acts of cooperation there could appear such artifacts as a penannular enamelled fibula with knobs from Velykuškiai (LLM 1958: Fig. 164), an

enamelled hanger with knobs from Pisanskis' collection (Mozurian region) (Nowakowski 1998: Fig. 23: 719).

Soon the manufacture of half-moon-shaped hangers with knobs developed to the north and east of western Lithuania. It is difficult to decide if half-moon pendants appeared in central Lithuania under the direct influence of the 3 c. AD south neighbour Mozuria (Astrauskas 1996: 6–7; Michelbertas 1996: 22–24). It would mean that the pendants common both in western and central Lithuania appeared independently under the influence of the same jewellers' school. Most of the dated works of central Lithuania, however, were of a later period than their prototypes. That is why we should look for another possibility. This was the relations with western Lithuania (Šimėnas 1994: 14–15) which determinated the spread of subtype A pendants popular in littoral region and very similar in the construction with the first. Craftsmen from littoral strip could have come there and made all central Lithuania openwork pendants of the second cluster after the fashion of the common patterns. The discussed subtype of pendants in metalworks of later period left certain traces. For example, one can discern some analogues with the lunulae-shaped pendants of Veršvai–Veliuona type headbands (4–5 c. AD). The main common trait was side- and front knobs.

It is more complicated to say something about western influence on the north and northeastern parts of discussed region. The pendants appeared almost simultaneously at least in northern Lithuania and southern Latvia. The period coincides with the movement of the inhabitants from littoral region Lithuania to Samogitia, northern Lithuania and southern Latvia (Michelbertas 1986: 193–194; Šimėnas 1993: 11). In this case the spread of different subtypes is very important. Subtype B was dominating in the territory north and north-east of littoral Lithuania. Their origin, however, should be looked for in littoral region first. The pendants of B1 have been produced in their openwork prototypes. They were found only in littoral Lithuania. The metalworks of B2 were most popular in western and southern areas of the Culture of Barrow with stone circles of Samogitia and northern Lithuania, i.e. in the territory closer to western Lithuania. One can guess that communities moving north and northeast copied only the means how to decorate with knobs. Craftsmen from the western region did not reach the countries, which were further north and northeast. This explains the fact why openwork pendants were not found there (excluding several patterns, perhaps, obtained in exchange). The further from the sea, the fewer pendants of B2 and more pendants of B4, B5, B7 appeared. There are almost no hangers of B2 in Latvia, north of Daugava B7 pendants began to dominate.

The metalworks with common roots were developed further independently. From littoral Lithuania the communities living further to the northeast and north inherited only knob elements, which they modified in their own way, though inhabitants were not interested enough in the improvement of ornaments. It could be the reason that such a simple construction of the pendants did not become attractive to more distant countries, which used decorated enamelled openwork pendants at that time.

Conclusions

1. In the Roman period there were revealed 409 half-moon pendants with knobs from 70 find spots. They were spread in the eastern Baltic region from the lower Nemunas in the south until the southwestern coasts of Finland in the North.

2. This type of pendants was divided into 2 sub-types and 7 variants. The classification of pendants according to the outer identification traits revealed stylistical change in the regions. Most openwork pendants (subtype A) were found in littoral Lithuania. Most simple pendants (subtype B) were spread north and northeast of western Lithuania. Long knobs were becoming shorter, rounder, flatter, and the quantity of knobs was becoming fewer moving from the southwest to the north – northeast.

3. The pendants were cast in multifold moulds made of clay or stone. But the moulds were used just for the casting of one necklace pendants and never reused for another necklace. Consequently the production was not frequent and made to order in the Roman period.

4. One necklace consisted of not only uniform pendants, but also of rather homogeneous metal alloys. Original ornaments must have been created by professionals, who could have been itinerant craftsmen.

5. Shortage of metal determined the conditions, which were common in working with any metal material. Because of that we failed to determine the dependence among the pendant variants and the composition of metal alloys. However we could discern some lower level local laws.

6. The half-moon pendants with knobs from the end of the 2 c. AD or the beginning of the 3 c. AD spread in littoral Lithuania. Soon the communities living further to the East and North took over their manufacture. More than 90% of all pendants could be dated the 3 c. AD. The chronological difference between the regions and variants if at all was very insignificant. At the beginning of the 4 c. AD they became unpopular and disappeared as far as the middle of the 4 c. AD.

7. Influence of half-moon Roman pendants on the origin of works with knobs was overestimated. A hypothesis has been raised that decoration of pendants with knobs has much in common with the production traditions of the enamelled pendants in Mozurian region. From littoral Lithuania the manufacture of lunulae-shaped hangers with knobs moved to central Lithuania, where western Lithuania subtype pendants were popular. While the communities living further north-northeast preferred common non-openwork pendants on the basis of which they created their own new variants.

Literature

Astrauskas, A. 1996. Vidurio Lietuvos gyventojų kultūrinės orientacijos kaita SGA-VIGA. In: *Vidurio Lietuvos archeologija. Etnokultūriniai ryšiai*, Vilnius, 4–10.

Baltų. 1998. Baltų archeologija 1–2 (11–12).

Bezzenberger, A. 1904. Analysen vorgeschichtlicher Bronzen Ostpreussens, Königsberg.

Bitner-Wróblewska, A. 1991–1992. Z badań nad ozdobami emaliowanymi w kulturze wielbarskiej. In: *Wiadomości archeologiczne* LII/2, 115–131

Brinch-Madsen, 1984. Ribe excavations 1970–1976, 2, 91–95.

Eesti esiajalugu. 1982. Tallinn.

Gaerte, W. 1929. Urgeschichte Ostpreussens, Königsberg.

Ginters, V. 1939. Sena Mežotne. In: *Senatne un Māksla* 4.

Förrer, R. 1907. Reallexicon der prahistorischen, klasischen und frühchristlichen Altertumer, Berlin-Stuttgargt.

Forshell, H. 1992. The inception of copper mining in Falun. Relation between element composition in copper artifacts, mining and manufacturing technology and historic development with particular emphasis on copper from the Falu mine. Theses and papers in archaeology 2.

Friedenthal, A. 1932. Ein Hügelgrab der älteren Eisenzeit Estlands. In: *Beiträge zur Kunde Estlands* XVIII/1, 14–24.

Friedenthal, A. 1935. Ein Hügelgrab aus der älteren und mittleren Eisenzeit Nord-Estlands. In: Beiträge zur Kunde Estlands XX/1/2, 1–44.

Hackmann, A. 1905. Die Eisenzeit in Finland, Helsingfors.

Katalog. 1896. Katalog der Ausstellung zum X. archaologischen Kongress in Riga, Riga.

Kivikoski, E. 1973. Die Eisenzeit Finnlands, Helsinki.

Kohn u. Mehlis. 1879. Materialen zur Vorgeschichte des Menschen im östlichen Europa 1.

Kulikauskas, P. 1941. Emaliuotieji dirbiniai Lietuvoje. In: *Vytauto Didžiojo kultūros muziejaus metraštis*, Kaunas, 43–63.

Kulikauskas, P. 1951. Kurmaičių (Kretingos raj.) plokštinio kapinyno tyrinėjimai. In: *Lietuvos istorijos instituto darbai* 1, 315–365.

Kulikauskas, P. 1998. Upytės priešistorinio kapinyno tyrinėjimų duomenys. In: *Lietuvos archeologija* 15, 19–85.

LA. 1974. Latvijas arheoloģija, Rīga.

LAB. 1961. Lietuvos archeologijos bruožai, Vilnius.

Latvijas Saule. 1927. 57/58.

Lawson, A. K. 1982. Studien zum Römischen pferdegeschirr. In: *Jahrbuch des Romisch-Germanischen zentralmuseums Mainz*. 25. Jahrgang. 1978, Mainz, 131–172.

Lietuvos gyventojų. 1972. Lietuvos gyventojų prekybiniai ryšiai I–XIII a., Vilnius.

LLM. 1958. Lietuvių liaudies menas, Vilnius, 1958 1.

Lønborg, B. 1998. Vikingetidens metalbearbejdning. Finske studier 17.

Majewski, E. 1900. Kurhany w Pakalniszkach. In: *Światowit* 2, 92–103.

Merkevičius, A. 1973. Jurgaičių kapinyno II–IX amžių žalvario dirbinių metalo sudėtis. In: *Lietuvos TSR Mokslų Akademijos Darbai*. Serija A 1(42), 67–77.

Merkevičius, A. 1984. Maudžiorų ir Požerės plokštinių kapinynų žalvaris. In: *Lietuvos archeologija* 3, 125–135.

Michelbertas, M. 1968. Rūdaičių I kapinynas. In: *Lietuvos archeologiniai paminklai.* Lietuvos pajūrio I–VII a. kapinynai, Vilnius, 73–112.

Michelbertas, M. 1986. Senasis geležies amžius Lietuvoje, Vilnius.

Michelbertas, M. 1996. Centrinė Lietuva – romėniškojo laikotarpio emaliuotų dirbinių gamybos centras. In: *Vidurio Lietuvos archeologija*. Etnokultūriniai ryšiai, Vilnius, 18–26.

Michelbertas, M. 2000. Reti žiedai Lietuvos archeologinėje medžiagoje In: *Istorija XLIII*, 5–7.

Moora, H. 1928. Senā dzelzslaikmeta uzkalniņu kapu izrakumi Jēkabpils apriņķī. In: *Arhaioloģijas raksti.*

Moora, H. 1929. Die Eisenzeit in Lettland bis etwa 500 n. Chr.: Die Funde 1, Tartu.

Moora, H. 1931. Ein hügelgrab der römischen Eisenzeit in Īle, Kreis Jelgava, Lettland. In: *Congressus Secundus archaeologorum Balticorum Rigae*. 16.–20. VIII 1930.

Moora, H. 1938. Die Eisenzeit in Lettland bis etwa 500 n. Chr.: Analyse 2, Tartu.

Nowakowski, W. 1998. Die Funde der Römischen Kaiserzeit und der Völkerwanderungszeit in Mazuren, Berlin.

Nowakowski, W. 1995. Od Galindai do Galinditae. Z badań nad pradziejami bałtyjskiego ludu z Pojezierza Mazurskiego. In: *Barbaricum* 4, Warszawa.

Puzinas, J. 1941. Dvigubas IV a. kapas, surastas Veršvuose. In: *Vytauto Didžiojo Kultūros muziejaus metraštis*, Kaunas, 28–42.

Roman reflects in Scandinavia. 1996.

Sb. Prussia. 1892. Litauische Graberfelder: Das Graberfeld bei Schernen. In: *Sitzungsberichte der Altertumsgesellschaft Prussia* 17, 141–168

Spreckelsen, A. 1907. Ausgrabungen in Saage, Kirchsp. Jegelecht, Estland. In: *Beitrage zur Kunde Est-, Liv- und Kurlands* VI/4.

Szirmai, K. 1994. Eine Pferdegeschirr-Gattung mit Lunulaverzierung aus Aquincum. In: *Akten der 10. Internationalen Tagung über antike Bronzen*, Freiburg 1988. Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Würtemberg 45 (Stuttgart), 405–409

Šimėnas, V. 1994. Pajūrio, Nemuno žemupio ir Vidurio Lietuvos kapinynai. In: *Vidurio Lietuvos archeologija*, Vilnius, 10–21

Šnore, E. 1939. Dignājas pilskalns. In: *Senatne un Māksla* 4.

Šnore, E. 1993. Agrā dzelzs laikmeta uzkalniņi Latvijas austrumu daļā, Rīga.

Vaitkunskienė, L. 1999. Žvilių kapinynas. In: *Lietuvos archeologija* 17.

Varnas, A. 1984. III–V a. Vaitiekūnų (Radviliškio raj.) pilkapynas. In: *Lietuvos TSR Mokslų Akademijos Darbai*. Serija A 2 (87), 24–38.

Vasks, A., Vaska B., Grāvere R. 1997. Latvijas aizvēsture (8500. g. pr. Kr. – 1200. g. pēc Kr.), Rīga.

Volkaitė-Kulikauskienė, R., Jankauskas, K. 1992. Iš senosios lietuvių amatininkystės istorijos (alavas senuosiuose lietuvių papuošaluose) In: *Lietuvos archeologija* 8, Vilnius, 135–170.

Waterbolk, H. T., Butler, J. J. 1965. Comments on the use of metallurgical analysis in prehistoric studies. In: *Helinium*, 227–251.

Дайга, И. В. 1960. К вопросу о литейных формах и литейном депе на территории Латвии. In: *Советская археология* 3, 78–92.

Гороховский, Е. Л. 1982. Хронопогия украшений с выемчатой эмалью среднего Поднепровья. In: *Материалы по хронологии археологических памятников Украины*, Киев, 125–140.

Сваране, Д. 1985. Моделирование и применение каменных формочек на территории Латвии в IX–XVII в.в. Проблемы истории Латвийской ССР 2, Рига, 49–53.

Фролов, И. К. 1980. Лунницы с выемчатой эмалью. In: *Из древнейшей истории балтских народов*. По данным археологии и антропологии, Рига, 111–124

Черных, Е. Н., Хоферте, Д. Б., Барцева, Т. Б. 1969. Металлургические группы цветного металла 1 тысячелетия н. э. из Прибалтики. In: *Краткие сообщения института археологии* 119, 109–120.

Abbreviations

AI – Archaeological collections of the Institute of History in Tallinn
b.m. – burial mound
BKM – Regional museum "Sėla" of Biržai
GEG – Gelehrten Estnischen Gessellschaft (collections in Tallinn)

gr. – grave
grp. – group
Jelg M – Museum of Art and History of Jelgava
HNM – National Museum in Helsinki.
KKM – Regional museum of Kretinga
LII RS – Institute of Lithuanian History, Department of Manuscripts
LNM – National Museum of Lithuania in Vilnius
LVI – Institute of History of Latvia
LVM – History Museum of Latvia in Riga.
MLIM – Museum of Minor Lithuania History
MNM – Museum of Art and History of Madonas
neg. – negative
PMA – State Archaeological Museum in Poland, Warszawa
RKM – Regional museum of Rokiškis
Saarema M – Saarema Museum
ŠAM – Museum of Šiauliai "Aušra"
TrlM – Museum of history Trakai
VDKM – War Museum of Vytautas the Great
VE – The Hermitage

Romėniškojo periodo pusmėnulio formos kabučiai su ataugėlėmis Rytų Pabaltijyje

ANDRA SIMNIŠKYTĖ

Santrauka

Romos imperijos epochos viduryje – 2 pusėje Rytų Pabaltijyje paplito mada įvairių rūšių papuošalus puošti nedidelėmis ataugėlėmis. Ypač daug rasta pusmėnulio formos kabučių. Rytų Pabaltijyje nuo Nemuno žemupio pietvakariuose iki Suomijos pietvakarinių krantų šiaurėje išaiškinta 70 radimviečių, kur rasti 409 kabučiai. Ypač daug jų Lietuvos ir Latvijos teritorijose; nemažai Estijoje, keletas – Suomijoje. Dar kelios kabučiais puoštos antkaklės rastos Baltarusijos ir Lenkijos teritorijoje (1 žml.). Literatūroje pusmėnuliai su ataugėlėmis sutartinai priskiriami baltiškų dirbinių ratui ir datuojami III–IV a.

Šie kabučiai dažniausiai randami kapuose, beveik išimtinai moterų, keli aptikti piliakalniuose. Pilkapių su akmenų vainikais kultūros srityje ypač populiarūs iš kabučių ir įvijėlių (1, 2: 2,3 pav.), kartais įvairios formos stiklo ir žalvario karoliukų suverti kaklo vėriniai. Vakarų Lietuvoje, ypač Nemuno žemupyje kabučiais puošdavo antkakles (3 pav.). Kartais juos kabindavo prie antsmilkinių (2: 1 pav.), smeigtukų, segių, kitų krūtinės papuošalų.

Straipsnio tikslas – apžvelgti Rytų Pabaltijo pusmėnulio formos kabučius su ataugėlėmis, juos suklasifikuoti, aptarti kai kuriuos gamybos aspektus, patikslinti chronologiją ir išsiaiškinti kabučių kilmę.

Klasifikacija. Pagrindinis kriterijus kabučių klasifikacijoje buvo dirbinių lankelis. Variantai išskirti atsižvelgiant į ataugėlių formas (1 lentelė). Kabučių klasifikacijoje išskirti 2 potipiai (A ir B) ir 7 variantai. 16-oje paminklų rasti 69

ažūriniai kabučiai (A p o t i p i s) koncentruojasi Lietuvos vakarinėje dalyje. Daugiausiai rasta kabučių su „rėmeline" lankelio konstrukcija. Jie paplitę siaurame Lietuvos pajūrio ruože, ypač Šilutės-Klaipėdos srityje. Panašių kabučių grupė aptinkama ir Centrinėje Lietuvoje. Trečios grupės kabučių su nedideliais ažūriniais trikampiukais geografija kiek platesnė. Neažūriniai, paprastieji B p o t i p i o kabučiai (339 vnt.) rasti 54 paminkluose. B potipio kabučiai randami visame aptariamų papuošalų paplitimo areale. Vakarinėje Lietuvos dalyje jų buvo santykinai mažiau. Populiariausi jie istorinėse žiemgalių ir sėlių žemėse.

Abiejų potipių kabučių galuose buvo nuo 2 iki 5 ataugėlių, pagal kurių formas išskirti 7 variantai. Chaotiškas kabučių galų puošimas nevienodu skaičiumi vienos ar kitos formos atšakėlėmis buvo neatsitiktinis. A potipio kabučiai, itin paplitę Lietuvos pajūryje, dažniausiai sutinkami su 1 ir 2 variantais (5 pav.). Jie sudarė atitinkamai 42% ir 32% visų ažūrinių kabučių. Kitos ataugėlių formos pasitaiko retai arba iš viso nesutinkamos. Tuo tarpu tarp B potipio egzempliorių dažniausiai sutinkami B2, B5 ir B7 kabučiai (atitinkamai 16%, 32% ir 23%). Kabučių identifikacinių požymių pasikartojimas atskleidžia nuoseklią jų stilistikos kaitą: slenkant iš PV į Š–ŠR, ažūrinį lankelį keitė paprastas; ilgosios ataugėlės apvalėjo, trumpėjo, plokštėjo, o jų skaičius mažėjo.

Gamyba. Nors kabučių gamybos pėdsakų Rytų Pabaltijyje nerasta, tačiau remiantis dirbinių formų paprastumu, galima spėti, jog ji buvo ne itin sudėtinga. Dauguma kabučių išlieti daugkartinėse sudėtinėse formose, pagamintose pagal modelius iš kietos medžiagos. Formelės greičiausiai buvo molinės, nors neatmestina galimybė, jog būta ir akmeninių. Vieno papuošalo kabučiai formaliai identiški. Matyt, vienos apvaros papuošalo detales liedavo pagal vieną modelį. Pagaminus apvarą modelis ir forma buvo išmetami. Tuo galima paaiškinti faktą, kodėl nėra rasta 2 apvarų su identiškais kabučiais. Dirbinių originalumas patvirtina spėjimą apie užsakomosios gamybos egzistavimą Romėniškame periode. Tačiau nors papuošalai vienetiniai, vargu ar jie buvo atskirų bendruomenių juvelyrų kūriniai. To meto sąlygos (žaliavos stoka, maža perkamoji galia ir pan.) dar nesudarė galimybių juvelyro amato išsiskyrimui kiekvienoje bendruomenėje ir neužtikrino pragyvenimą iš jo.

Nepaisant dirbinių formų paprastumo, jų gamybai reikėjo tam tikrų žinių, kurias galėjo įgyti tik žmogus, nuolat dirbantis tą darbą. Tiek vizualiniai pastebėjimai, tiek lydinių mikroanalizė patvirtina, kad kabučiai gaminti labai gerai žinant metalo fizines savybes. Todėl spėjama, jog juos sukūrė keliaujantys meistrai profesionalai, aptarnavę tam tikrą regioną, kurį galima būtų sutapatinti su vieno varianto kabučių paplitimu. Teoriškai įmanomas ir tam tikros sudėties metalo naudojimas tam tikro varianto kabučių gamybai. Pabandžius nustatyti ryšį tarp kabučių variantų ir lydinių sudėties, prielaida pasiteisino tik iš dalies. Pagrindinė priežastis – metalo žaliavos stoka.

Chronologija. Atsiradę III a. pradžioje ar net II a. pabaigoje pusmėnulio formos kabučiai su ataugėlėmis populiariausi buvo III a. (apie 95% visų dirbinių). IV a. pradžioje jie tapo nebemadingi ir IV a. viduryje išnyko. Didelio chronologinio skirtumo tarp dirbinių potipių ir variantų nebuvo. Kiek anksčiau kabučiai masiškai išplito Lietuvos pajūryje, kur ypač populiarūs A potipio ažūriniai kabučiai. Nuo jūros nutolusiuose regionuose pavieniai dirbiniai galėjo atsirasti kiek anksčiau, nei prasidėjo masinė jų gamyba III a. viduryje. Ugrofinų srityse paplitę kabučiai Lietuvoje jau žinomi nuo III a. pradžios. Ilgiausiai jų gamybos tradicijos išsilaikė Centrinėje Lietuvoje.

Kilmė. Romėniško pavyzdžio dirbiniai neabejotinai skatino šios formos papuošalų gamybą Rytų Pabaltijyje. Tačiau romėniškų provincijų prototipai ir aptariami kabučiai buvo skirtingos formos ir paskirties. Chronologiškai dirbinukų kilmės problematika turėtų būti susijusi visų pirma su ažūriniais kabučiais, o formaliai – su puošimo ataugėlėmis stilistika. Abu kriterijus atitinka emaliuoti pusmėnulio formos kabučiai. Todėl darbe keliama hipotezė, jog pusmėnulio formos kabučių su ataugėlėmis idėja gimė būtent Mozūrų areale. Tarpininkaujant vakarinių Lietuvos sričių bendruomenėms (mažiau tikėtinas tiesioginis kontaktas su Mozūrų ežerynu) ažūriniai kabučiai paplito ir Centrinėje Lietuvoje. Š–ŠR gyvenusioms bendruomenėms priimtinesnis buvo B potipis, kurį jie visuotinai perėmė ir savaip modifikavo. Tačiau papuošalų tobulinimo galimybėmis pernelyg nesidomėta. Gal dėlto šie paprastos konstrukcijos kabučiai nesudomino tolimesnių kraštų, kur tuo metu buvo paplitę puošnūs emaliuoti ažūriniai kabučiai.

Andra Simniškytė
Archaeology Department
Lithuanian Institute of History
Kražių str. 5
Vilnius LT-2001
Lithuania