

# THE STRUCTURE OF THE ECONOMY AND SOCIETY IN THE EARLY BRONZE AGE IN LITHUANIA

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## Abstract

The Early Bronze Age in Lithuania, and especially the final part, saw the most important changes in the structure of the production economy and society. Unlike in Central or Western Europe, the Neolithic Revolution, as Vere Gordon Childe understood it, was taking place in the east Baltic region at exactly that time, that is, the first half of the second millennium BC. The communities which inhabited individual regions in Lithuania in the Early Bronze Age gave rise to a unique method of economic management that to a large extent influenced the development of the structure of individual communities. In this article, on the basis of archaeological, palynological and zooarchaeological material, we discuss the economic and social structures of two distinct territorial community groups, one that lived at Šventoji on the Baltic coast, and one that lived inland by Lake Kretuonas.

Key words: Lithuania, Early Bronze Age, economy, society, Kretuonas, Šventoji.

## Archaeological sources and the data from their research

Archaeological, palynological and zooarchaeological material from two micro-regions in Lithuania is used in this article about the economy and society in the Early Bronze Age, from Šventoji in western Lithuania, and from the area around Lake Kretuonas in eastern Lithuania. In the west Lithuanian region, the Šventoji 23 and Šventoji 9 settlements were excavated, and in eastern Lithuania, research was carried out at the Kretuonas 1C and Kretuonas 1D settlements (Fig. 1).

The Šventoji 23 settlement was excavated in 1970 and 1971 (Rimantienė 2005, p.421). A cultural layer was found at a depth of 0.7 to one metre. There are two distinctly intense areas of the cultural layer in the excavated part of the settlement: the eastern area and the western area (Fig. 2). The cultural layer of the settlement was formed at different times. This fact is proven by radiocarbon dates: the settlement was inhabited during the period from 2623 to 1984 BC. Furthermore, its cultural layer contained flat-bottomed pots attributed to Narva culture pottery, the fabric of which contained mineral inclusions. The latter is related to the latest stage in the formation of the cultural layer of the settlement. Palynological research was carried out (Rimantienė 1979, p.12; 2005, p.424), and the zooarchaeological material was analysed (Daugnora, Girininkas, 2004, p.116) in the cultural layer of the settlement.

The Šventoji 9 settlement was excavated in 1971, 1972 and 1997 (Rimantienė 2005, p.407). Stakes from a barrier intended for fishing were dated to the period from

2149 to 1965 BC. Other finds from the settlement include a pot attributed to Trzciniec culture (Rimantienė, Ostrauskas 1998, pp.203-215), and dated to the period from 1963 (1865) to 1732 BC, and a flat-bottomed pot with a striped surface and S-shaped profiled walls, which might belong to a later period.

The Kretuonas 1C settlement was excavated from 1987 to 1992. The cultural layer of the settlement and the artefacts found have been dated to the first quarter of the second millennium BC (Girininkas 2009, p.257). A cultural layer up to one metre thick was found at the settlement, and palynological and zooarchaeological research was carried out (Fig. 3) (Daugnora, Girininkas 2004, pp.233-250).

The Kretuonas 1D settlement was excavated in 1994 and 1995. The cultural layer is up to 40 centimetres thick, and the finds discovered have also been dated to the first quarter of the second millennium BC (Girininkas 2009, p.257). Palynological and zooarchaeological research data was obtained from the cultural layer (Daugnora, Girininkas 2004, pp.178-179; Girininkas 2008, pp.15-32).

## The Early Bronze Age economy on the coast and in inland Lithuania

In the first quarter of the second millennium BC, the climate of the Sub-Boreal Period created conditions for the population of the Lithuanian coastal area to engage in fishing, hunting, gathering, livestock farming and growing crops. The tree species that grew around the Šventoji 23 and Šventoji 9 settlements included both



Fig. 1. Early Bronze Age resources mentioned in the article (map by A. Girininkas).

deciduous (elm, lime, hornbeam, oak, and to a lesser extent beech and ash) and coniferous trees (pine and fir). Alder thrived on the banks of the River Šventoji and on the shores of the lagoons. According to archaeological research data, fishing was the most important branch of the economy. Species of both freshwater and sea fish were found in the cultural layers of the Šventoji 23 and Šventoji 9 settlements (Stančikaitė *et al.* 2009, p.124). After fishing, other important branches of the economy were seal hunting and amber gathering and processing. The surviving zooarchaeological material indicates that during the period of the transition to the Early Bronze Age, seal hunting was the most important occupation in the Šventoji 23 settlement (Daugnorė, Girininkas 2004, p.174). Judging by the surviving osteological material from the settlement, the animals that were hunted were aurochs (*Bos primigenius*) and seal (*Phocidae*), which were dated to the period from 3790±80 BP (2396-2054 cal BC) (Ki-9458) to 3730±70 BP (2271-1984 cal BC) (Ki-9459). They constituted an important source of food and materials such as skin and fat. Seal bones made up 40% of the total bones found (Fig. 4). However, only a single bone each of a cow (*Bos bovis*) and a goat/sheep (*Ovis aries/Capra hircus*) were found. This fact indicates that during the period of the transition to the Early Bronze

Age, livestock farming in the environs of Šventoji was in the initial stages of its formation. The pollen of cannabis (*Cannabis*) and possibly proso millet (*Panicum miliaceum*) was detected in the area of the settlements.

In the Early Bronze Age settlements of Kretuonas 1C and Kretuonas 1D in eastern Lithuania, being next to large bodies of water, fishing and hunting remained significant branches of the economy. However, the rapid rise of a production economy can be seen as a much more significant development of the time. This rise is reflected very distinctly in an analysis of the settlement's osteological and palynological material, as well as metallurgy. The amount of osteological material (estimated as the minimum number of individuals, or MNI) in the settlements around Lake Kretuonas saw a sudden rise from 10% at the end of the Late Neolithic, to 18% during the period from 2000 to 1700/1650 BC (Fig. 5). Furthermore, palynological research data indicates the presence of meadows and small fields around the Kretuonas 1C settlement, where crop plants were grown (Girininkas 2008, p.29).

This data shows that in eastern Lithuania rapid development in the production economy was taking place on an economic level in communities at that time; whereas in the eastern part of the Baltic Sea coastal area,



Fig. 2. The excavated area of the Šventoji 23 settlement (after Rimantienė 2005, p.425).

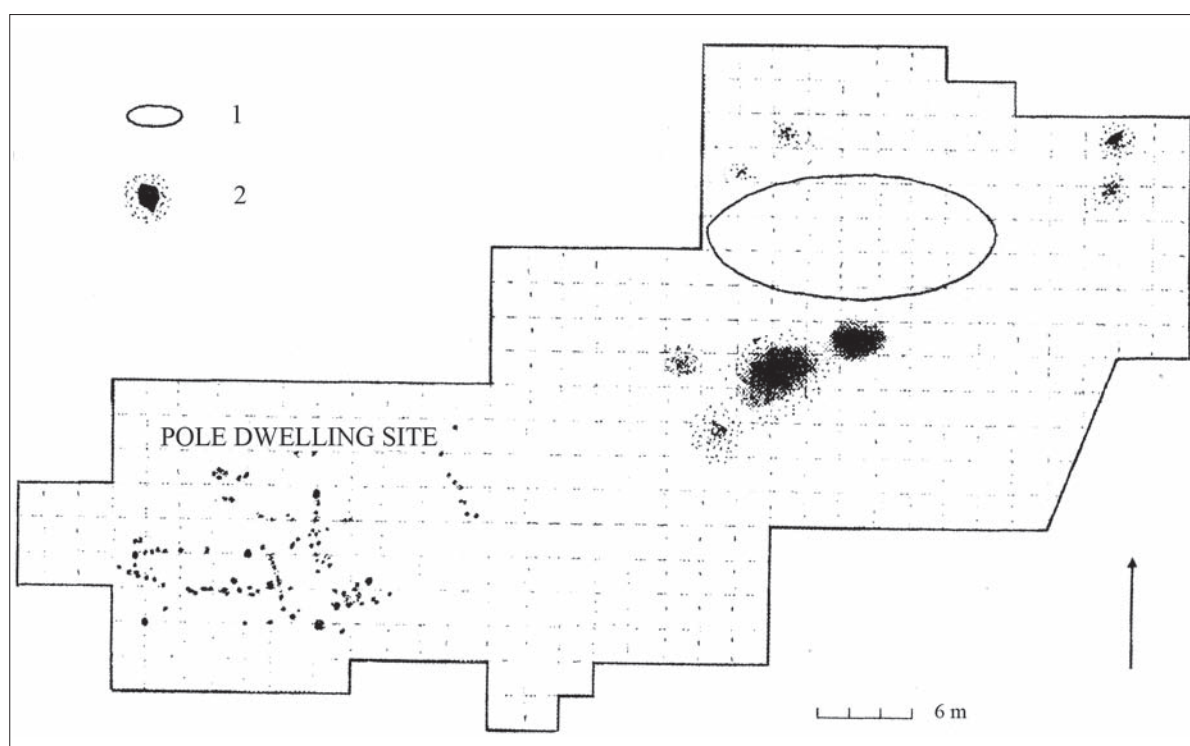


Fig. 3. The excavated area of the Kretuonas 1C settlement (after A. Girininkas).

the production economy remained at its level during the Late Neolithic. What could be the causes of this phenomenon?

One of them is natural/ecological. Due to the formation processes of the Baltic Sea, its transgressions and regressions, at the beginning of the Bronze Age, from about 2000 to 1700 BC, underwater currents might have brought no amber from the Sambian Peninsula (Bliujienė 2007, p.204). The amount and the quality of the amber was no longer enough for traders in the raw material, the population of Corded Ware culture, and its buyers in Central Europe and the Mediterranean region. Therefore, attention was focused on the Jutland Peninsula, where raw amber was available. The newly formed Ūnėtice culture assumed the role of mediator between Jutland and the Mediterranean Sea. Traders of Corded Ware culture in the east Baltic region were deprived of amber, their most important raw material. This might have been one of the reasons why Corded Ware culture in the east Baltic region went into decline (Girininkas 2011, p.157), and its trade relations with Central Europe were disrupted.

Another cause might have been the profitable resources of food and traded goods, seal fat and skins, available to the communities inhabiting the Lithuanian coastal area. These resources ensured quite a high standard of living, without engaging in other branches of the economy. It has been noted that in Baltic Sea coastal settlements, members of the communities which were

engaged in seal hunting were not involved much in other branches of the economy, including the production economy, except for fishing (Lōugas 1997, pp.37-65). Meanwhile, as has already been mentioned, members of the community of the Šventoji 23 settlement were mostly engaged in seal hunting.

The third cause was the natural environment, which did not change the living conditions of the population in the second half of the Sub-Boreal Period. The soil close to the ever-changing estuary of the River Šventoji was not suitable for growing crops or cultivating meadows where livestock could be reared. This is proven by the palynological research carried out in the environs of the Šventoji settlements (Stančikaitė *et al.* 2009, p.126), which indicates that a small amount of crop plant pollen would reach the settlements of Šventoji together with grain in bundles or containers, in which traded grain was brought from inland, and not by growing it locally.

The fact that the communities of eastern Lithuania which were engaged in hunting were able to adapt more easily to the development of livestock farming, unlike fishermen who inhabited a narrow coastal strip, may be seen as the fourth cause. Furthermore, an important factor accounting for the more rapid development of livestock farming among the communities of eastern Lithuania in the Early Bronze Age is the contacts of the population of this territory with the communities of the higher and middle reaches of the River

BONE UNIT SPECIES	Cornus	Cranium	Dentes	Mandibula	Columna vertebralis	Scapula	Humerus	Ossa antebrachii	Carpus	Metacarpus	Ossa coxae	Femur	Ossacurris	Tarsus	Metatarsus	Phalangx	Total	Percentage	MNI
Aurochs ( <i>Bos primigenius</i> )	2		11	1	3	1	1	4		3		1		3	2	22	54	16,17	4
Elk ( <i>Alces alces</i> )		2	6	1		1	1	2			1		1	3	1	10	29	8,68	3
Red deer ( <i>Cervus elaphus</i> )	6		2	1	1		1	1									12	3,59	3
Roe deer ( <i>Capreolus capreolus</i> )								1				1		1		1	4	1,20	1
Wild pig ( <i>Sus scrofa</i> )		1	11	2	2	1	2	3				2					24	7,19	3
Wild pig/ pig ( <i>Sus scrofa</i> / <i>Sus suis</i> )			6				1	1		6				2		6	22	6,58	3
Seal ( <i>Phocidae</i> )		8	8	3	31	13	12	18		14	7	9	5	1		5	134	40,12	8
Bear ( <i>Ursus arctos</i> )			1							1			1	2	1	1	7	2,09	2
Beaver ( <i>Castor fiber</i> )		1	13	3	2		7				1	4	1				32	9,58	4
Otter ( <i>Lutra lutra</i> )					1			3									4	1,20	1
Badger ( <i>Meles meles</i> )				3	1												4	1,20	2
Polecat ( <i>Mustela L.</i> )		1															1	0,30	1
Marten ( <i>Martes martes</i> )				1													1	0,30	1
Hare ( <i>Lepus europaeus</i> )											1						1	0,30	1
Fox ( <i>Vulpes vulpes</i> )				1			1	1		1		1					5	1,50	1
Total:	8	13	58	16	41	16	26	34		25	10	18	8	12	4	45	334	100.0	
Unidentified fragments		7			12	3	3	2				4	4	1	3				
Cattle ( <i>Bos bovis</i> )?									1								1		1
Sheep/goat ( <i>Ovis aries</i> / <i>Capra hircus</i> )						1											1		1
Dog ( <i>Canis familiaris</i> )		1	5	6								1					13		4

Fig. 4. The research data of the osteological material from the Šventoji 23 settlement (after L. Daugnora).



Dnieper and Trzciniec culture, which was undergoing its formation at the time (Girininkas 2002, pp.187-196; 2011, p.179).

## The social structure in the Late Neolithic and Early Bronze Age

Issues of the social structure in Lithuania in the Early Bronze Age can be discussed on the basis of features of burials, the structure of settlements, individual finds, and the development of the economy.

In analysing features of the social structure which underwent change during the period of transition from the Late Neolithic to the Early Bronze Age, we will first discuss the social structure of the final part of the Late Neolithic, and compare it to the way of life of Early Bronze Age society.

Archaeological, zooarchaeological and palynological research shows that a noticeable change in the economy and the social structure in the east Baltic region began in the Middle and Late Neolithic. On the basis of outdated information on economic changes in the east Baltic region, West European archaeologists and other researchers date this process to the Late Neolithic, and associate all changes of an economic nature with the development of Corded Ware and Globular Amphora cultures in the east Baltic region (Milisauskas, Kruk 2002, pp.193-245). M. Gimbutienė defines the society of Corded Ware culture of that time as a patrilineal society led by a patriarch-warrior, who would demonstrate his role in society solely in emergencies, when a large group of people needed to be rallied (Gimbutienė 1996, p.288).

It seems that the emergence of Corded Ware and Globular Amphora cultures in Lithuania was not peaceful. The Forest Neolithic settlements in that period were fenced in and defended. This might have been why the territories of individual settlements became smaller. The Šventoji 1A settlement of Corded Ware culture and the Žemaitiškė 1 settlement (in the area around Lake Kretuonas) of Late Narva culture were protected from the dry land side, too.

Most likely, a unique feature of the economy and defence of the Late Neolithic population was the construction of pile buildings and dwellings in wetlands very close to water, or even in bodies of water over the surface. The fact that buildings were raised above ground level is proven by the material from the Žemaitiškė 2, Šarnelė, Šventoji 4, Usviaty IVB and Usviaty IVA settlements (Girininkas 2004, pp.26-32; 2005, pp.33-45). There are none of the fireplaces or household pits that are typical of Middle and Late Neolithic dry land

settlements. This tradition of putting up pile structures and settlements in wet areas persisted in the Bronze Age, too. Remains have been found in Lake Luokesai (in the Molėtai district) (Menotti *et al.* 2005, pp.381-403). In addition to pile dwellings and quadrangular dwellings, pole-structured long and rectangular or, less commonly, oval-shaped dwellings, with a porch, that were slightly recessed into the ground were also built during this period. Such dwellings have been found in the Kubilėliai (in the Šakiai district) settlement (Juodagalvis 1994, p.34).

The buildings of the settlements of that time were arranged in groups numbering three (Kubilėliai) to 12 buildings (Pribrezhnoye, in the Kaliningrad region, Nida in Lithuania, Lagaža in Latvia, and other settlements). The buildings are of two types, in terms of their shape: long quadrangular, mostly rectangular (up to 16 metres long) with several partitions; and small quadrangular (up to eight metres long), and nearly square in shape. Most likely, newly married individual families would build extensions to the existing dwellings, or they would build new dwellings, whereas some buildings might have been used for household purposes. This data indicates that Late Neolithic forest dwellers were not nomadic hunters. They would stay in one place for a period, because labour in the forests, even for the construction of temporary dwellings, was scarce. The places that were convenient from a natural and a geographical point of view were inhabited permanently. This fact is indicated by settlements containing pottery of several types (Jara 1, Kretuonas 1, Šarnelė, etc), which is not always separated stratigraphically or planigraphically. It can be assumed that people who applied new forms of economy and developed trade between communities living in the forest steppes and the forest zone (those of Globular Amphora and Corded Ware cultures) could even temporarily settle in the same dwellings where Forest Neolithic people were living.

In the east Baltic region in the Late Neolithic, a local Forest Neolithic community of related people already had a strictly defined territory, where the importance of the economic unit, the farmstead, and the ownership of economic objects, such as fields, pastures, forests, fishing sites and bodies of water, was becoming more and more prominent.

On the basis of research into Globular Amphora culture in Poland, the spatial structure of settlements of this culture has been reconstructed. In the opinion of researchers, the structure consisted of three levels: a village (a farmstead), a micro-regional group, and a regional group. A village consisted of one to three families. Several villages constituted a micro-region-

## I

EARLY METAL AGE SOCIETIES: FROM A THEORETICAL ASSESSMENT TO THEIR ECONOMY, INTERREGIONAL CONTACTS AND RITUALS

[illegible]

BONE UNIT SPECIES	Cornus	Cranium	Dentes	Mandibula	Vertebrae	Scapula	Humerus	Ossa ante- brachii	Carpus	Metacarpus	Ossa coxae	Femur	Patella	Ossa cruris	Tarsus	Metatarsus	Phalanges	Total	Percentage	MNI (Casteel R. 1977)	MNI (White T. 1955)
White-tailed eagle / <i>Haliaetus albicilla</i>																	1	1	0.03		1
Mallard / <i>Anas platyrhynchos</i>							8	3										11	0.37		6
<i>Galliformes</i>																		5	0.16		
Unidentified bird fragments																		15	0.50		
<b>Total bird fragments</b>																		<b>32</b>	<b>1.06</b>		
<b>Total</b>																		<b>3399</b>			
<b>Fishes (Pisces)</b>																					
Pike / <i>Esox lucius</i>	-	38	-	-	491	-	-	-	-	-	-	-	-	-	-	-	-	529	66.0		
Catfish / <i>Silurus glanis</i>	-	-	-	-	80	-	-	-	-	-	-	-	-	-	-	-	-	80	9	92	
Pike-perch / <i>Lucioperca lucioperca</i>	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	12	1.48		
<i>Cyprinidae</i>	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	0.12		
Unidentified fish bones																			22.8		
<b>Total fish bones</b>																		<b>806</b>			
Unidentified fish fragments																		264			
Total excavated bones in Kretuonas I C																		<b>4478</b>			

Fig. 5. The research data of the osteological material from the Kretuonas I C settlement (after L. Daugnora).



al group, the main point of attraction of which was a megalithic burial site. This centre of a micro-regional group was related to matters of the community's spiritual and economic life (Szmyt 1999, pp.189-205). It is believed that the role of men was increasing in these communities, which is characteristic of a society of livestock farmers, whereas their mobile way of life made close communication among communities possible. Therefore, a characteristic feature of the population of Globular Amphora culture is the uniformity of their cultural traditions throughout the entire area of the distribution of the culture. It is very likely that in Lithuania, as in other woodlands, Globular Amphora culture groups were small. Their relations with the Forest Neolithic population were rather weak, and they were slightly closer only in the area of the extraction of natural resources (amber, flint) (Szmyt 1999, p.197). A comparison of the livestock farming structure of communities of Globular Amphora and Corded Ware cultures on the one hand, and that of Forest Neolithic and Narva communities on the other hand, shows that the structure was different. The livestock farmers of Globular Amphora culture were nomadic and mobile, and they grazed their livestock in forest-steppe areas; whereas Forest Neolithic livestock farmers led a more settled way of life, they developed livestock farming in the same place by felling and burning forests to expand meadow areas. This form of livestock farming was adopted by Early Bronze Age communities in Lithuania. It can be seen very clearly in the Kretuonas 1C settlement (Girininkas 2008, p.29).

The economic changes in the period should be seen as one, and apparently the main, cause of the changes in the spiritual culture of the Late Neolithic. A review of the material available on the spiritual culture of Lithuania's Late Neolithic (Girininkas 2009, pp.239-247) indicates that a characteristic feature of the spiritual culture is its diversity, which was to a large extent influenced by the economy of that period. What is characteristic of the period? First and foremost, these were times of a transition from a subsistence economy to a production economy, when communities of hunters, fishermen, gatherers, livestock farmers and early arable farmers communicated simultaneously. The diversity of their spiritual culture must necessarily have been different, and during the period of transition from the Late Neolithic to the Early Bronze Age it was mixed. We see this in Forest Neolithic communities which had notions associated with the chthonic world (Girininkas 2009, pp.239-247), and in the agrarian Neolithic symbols associated with celestial bodies (Butrimas, Ostrauskienė 2004, p.140). This is why it is difficult at present to analyse the spiritual culture of the communities of the Late Neolithic and the Early

Bronze Age as an integral process, because it was in that period that the confrontation of northern and southern Indo-European ideologies was taking place. However, the period already saw the formation of unique features of the spiritual culture, which are reflected in the burial methods of the Early Bronze Age. If we compare the development of the spiritual culture of the northern and the southern Indo-Europeans during the period of transition from the Late Neolithic to the Early Bronze Age, we can see that the northern Indo-Europeans continued the traditions of their spiritual culture. Notions of the chthonic world remained relevant to them. No instances have been observed of the northern Indo-Europeans' adoption and keeping to rites characteristic of the southern Indo-Europeans, or the use of the latter's symbols during the Early Bronze Age after the disappearance of Corded Ware culture. During the period of transition to the Early Bronze Age, customs changed among the northern Indo-Europeans, such as the method of burial (only human heads were buried, which might be associated with the cult of ancestors, a feature of which is the fact that the skulls of ancestors had to be kept next to living fellow tribesmen, as in the Kretuonas 1C and Šventoji 23 settlements). The method of burial was related not to the influence of Corded Ware culture, but rather to economic changes, that is, the transition to livestock farming, the melting down of metal, and arable farming. Ground-surface flint axes from the Late Neolithic and the Early Bronze Age which were intended for offerings are quite common finds in Lithuania. It seems that they were brought by people of Globular Amphora and Corded Ware cultures. However, it is very difficult as yet to attribute such axes definitely to the northern or southern Indo-European communities, because not a single find of this kind has been found in settlements belonging to the former or the latter, with the exception of two burials of Corded Ware culture, in which such axes have been found. Therefore, it is difficult to answer the question as to who practised the offering of axes: the people of Globular Amphora and Corded Ware cultures, or the northern Indo-Europeans who acquired these artefacts through trade.

Based on the available archaeological research data, we can assert that the Late Neolithic and Early Bronze Age communities in the east Baltic region did not adopt or start worshipping new symbols or gods when Globular Amphora and Corded Ware cultures arrived in the east Baltic region, as M. Gimbutienė (Gimbutienė 1996, pp.289-293) insists. Up to the second quarter of the second millennium BC, the aforementioned communities continued worshipping the gods of their chthonic world: reptiles, fish and water.



Fig. 6. Bone pendants imitating human faces: the burial site of the Kretuonas 1C settlement (photograph by A. Girininkas).

The aforementioned spiritual culture material does not indicate that any significant changes might have taken place in the Early Bronze Age social structure related to the spiritual world. Just as in the Late Neolithic, in an Early Bronze Age community there were people who took care of the spiritual life and rites, and who might have been ordinary members of the community in everyday life. The fact of the existence of senior individuals in charge of rites within a community can be proven by offerings discovered which are often called hoards. In Lithuania, offering an intact axe in water might have been a practice, as suggested, for example, by the circumstances of the discovery of an axe in Gripiškės (in the Prienai district), and axes in Užnemunė (the Trans-Nemunas region). Offerings to various gods were thought to ensure the fertility of livestock, and to assist when hunting and fishing, and fighting enemies. Similar offerings in bodies of water have been found in southern Scandinavia (Ebbesen 1993, p.123).

Differences in the social structure can only be seen among people who are honoured, respected or have already gained power. This is obvious in the burial site of the Kretuonas 1C settlement, where the heads of some people with images of a human face were found buried next to the fireplace inside a building (Fig. 6). They might have been community chiefs or family members, but not ordinary members of the community. The pieces of skulls of three individuals found in

the Šventoji 23 settlement (Rimantienė 2005, p.454), might also have been exclusive members of the community. Individual finds also show that an elite stratum was beginning to take shape in Early Bronze Age communities, such as exceptionally large flint daggers and other artefacts discovered in 15 locations in Lithuania, including the Kretuonas 1C settlement (Fig. 7).

In the Late Neolithic, the role of the family as a separate economic unit increased, although not to such an extent that a single family could manage its farm independently. A group of buildings and several families dwelling in a farmstead serve as an indication that such an aggregate of related families which belonged to a single family community constituted an indivisible economic and social association, a patronymy.

A patronymy consisted of pairing families, the economic foundation of which was based on the division of labour according to gender and age. Within a settlement, food had to be distributed according to an egalitarian principle, because the economy (hunting, fishing, livestock farming and arable farming) required the efforts of members of more than a single family. Exogamy compelled people to maintain more flexible relations with other communities in competing over territories, natural resources, and so on. A common economic interest, that is, natural resources, rearing livestock and security, united the entire population of a settlement. There must have been ideological unity

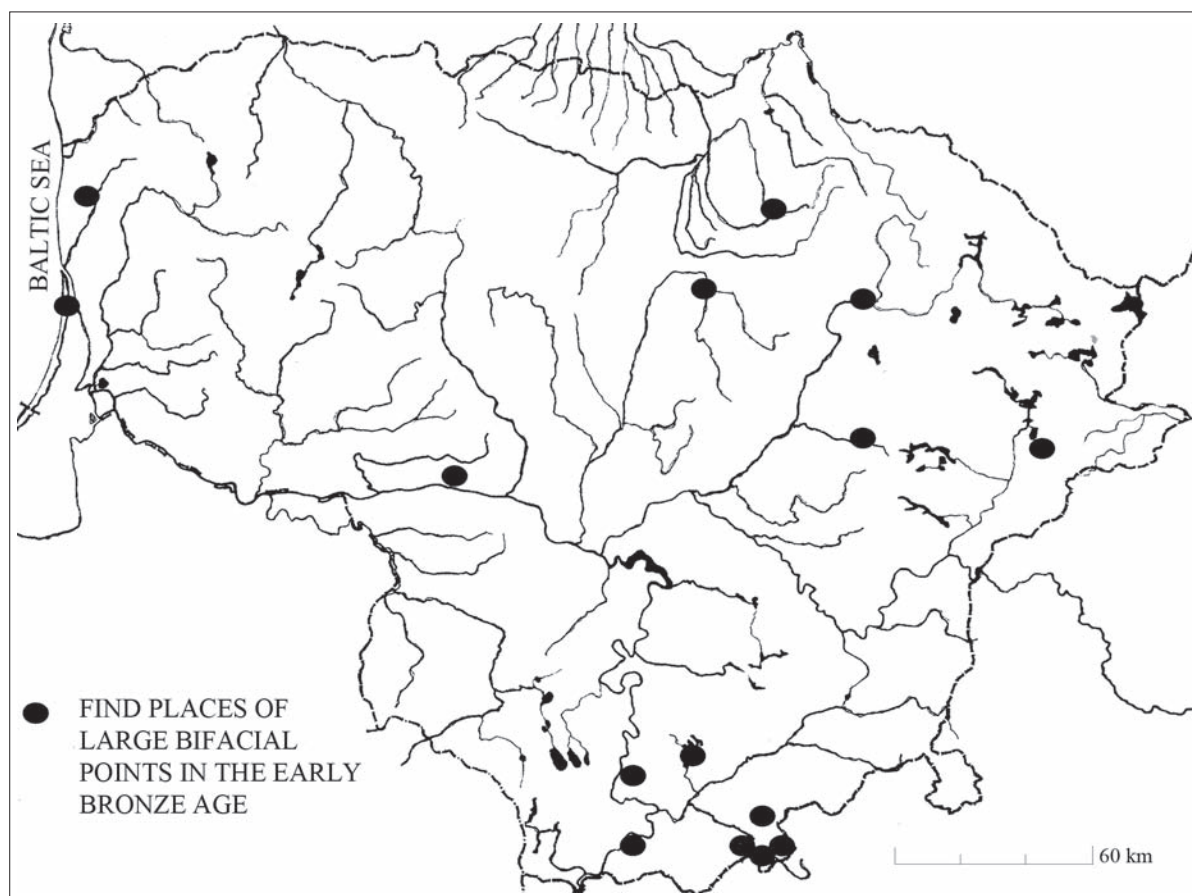


Fig. 7. Biface artefacts found in Lithuania (by A. Girininkas).

among community members: everybody perceived himself or herself as a descendant of a single progenitor through the male line.

In the Late Neolithic, in the second half of the third millennium BC, five cultures might have co-existed simultaneously in the east Baltic region, those of Narva, Neman, Globular Amphora, Pit-Comb Ware and Corded Ware, each with its unique socio-economic system. It is believed that there was no common socio-economic structure in the Late Neolithic. In most instances, researchers question the emergence of Corded Ware culture in the east Baltic region and its productive-economic influence on the populations of Neman and Narva cultures. According to data from research into archaeological and zooarchaeological material, they could not have shared a common socio-economic system. Archaeological excavations of settlements confirm this claim. The population of Narva and Bay Coast cultures of western Lithuania (according to the excavations of the Šventoji 6 settlement) could be attributed to the socio-economic system of fishermen-hunter-gatherers, with elements of arable farming and livestock farming under formation. The people of Neman culture (according to excavations at Karaviškė 6, Katra 1, and other settlements) could be

attributed to the system of fishermen-hunter-gatherers, with elements of livestock farming under formation; whereas the communities of both Globular Amphora and Corded Ware cultures (according to the data from Šventoji 6, Jara 1, Kretuonas 1, and other settlements) can be attributed to the economic group of livestock farmers, who traded by travelling along rivers and running-water lakes, and buried their dead on river banks and lake shores. The people of Pit-Comb Ware culture of northeast Lithuania belonged to the economic system of fishermen-hunters, who apparently gradually adopted elements of livestock farming. No data to support this assumption has yet been found in Lithuania; however, in the Late Neolithic settlements of Pit-Comb Ware culture of eastern Latvia and northern Belarus, the bones of domestic animals have been found (Loze 1988, p.115).

Early Bronze Age communities were related by kinship. A community was made up of several families, several communities were related by kinship, and thus they formed bloodline communities. These had their own territory in the wider sense, and individual communities had their own territory in a narrow sense. The territory of a settlement was an economic unit, consisting of several production and extraction objects. The



main production objects of the Šventoji 23 settlement were fishing and seal hunting areas, and coastal forests in which the people hunted. The raw material extraction area was the coast and the lagoons, where people searched for amber deposits. The division of labour within a community was based on age and gender. A separate group of individuals, tradesmen, maintained relations (they imported raw flint and shale, and artefacts made from these minerals) with closer or more remote inland communities. A community consisting of several families had a chief or a senior community member, who could also be a prophet. The structure of the Early Bronze Age Šventoji community did not differ much from the structure of the egalitarian society of the Late Neolithic.

In the community of the Kretuonas 1C settlement, the main production objects were the surrounding lakes and rivers, forests, meadows and small plots of arable land that had been reclaimed from the forests and resembled vegetable gardens, a metal foundry, a livestock and wild animal slaughterhouse, fishing barriers, workshops for processing fur/skins, bone/horn and stone/flint, a pottery production area, and a sacred place. The community was large, and consisted of a dozen or so families. Its activities and interests covered the entire basin of Lake Kretuonas, about 160 square kilometres. The community was beyond doubt headed by a chief, and a division of labour between genders and different age groups prevailed (melting down metal, livestock and arable farming, hunting, fishing, the production of tools and weapons). In the community of the settlement, besides the chief, a separate group of people, probably an individual family of two men, a child and a woman (Jankauskas 2002, p.245), stands out whose skull parts were put into grave-pits already fragmented (in another place crushed). These individuals could have made up a family or part of a family, who were buried separately inside a building, next to the fireplace. In the family, the skulls of the males were buried with pendants made from bone that imitated the faces of the males. On the basis of anthropological data, it may be assumed that this burial of possibly a single family was not a primary burial. The deceased were buried first outside the settlement, and then their fragmented heads were reburied next to a fireplace inside a building. This archaeological and anthropological research indicates that in the community there must have been a prophet in charge of the rites performed, whereas the building in which the buried heads were discovered might have been a special place to the community, a sacred place. The burials of members of a separate family (genetic analysis in the future will be able to determine their kinship) indicate the rise of a separate family inside the community, the members

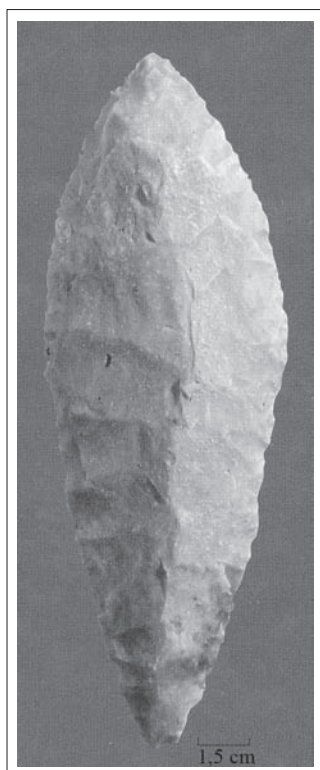


Fig. 8. A flint dagger: the Kretuonas 1C settlement (photograph by A. Girininkas).

of which enjoyed certain privileges even after death. Furthermore, the flint dagger (Fig. 8) and the zoomorphic pendants discovered in the settlement must have belonged to a separate chief's family, or to some other privileged person. There were also tradesmen in the community who brought metal, raw flint, amber and shale. The community of the Kretuonas 1C settlement was large, and in terms of its economy and power structure, it dominated quite a large area. The arrival of metal in the community of the Kretuonas 1C settlement, through trading and the melting down of metal at the site, socialised the community, made it more complex, and moved it towards differentiation.

## Discussion

Lithuanian researchers have written little about the formation of the economy and social structure of the Early Bronze Age. During the last decade, a few articles have been written about the social structure of the Bronze Age by A. Merkevičius (Merkevičius 2005, pp.39-52; 2007, pp.93-105; 2009, pp.59-69). The author discusses the process of the formation of Bronze Age communities, their social structure, and especially their economy in a very sketchy manner. Little is said about economic change during the Middle and Late Bronze Age. The formation of the social structure is vaguely related in these works to the development of the economy. It should be assumed that the determination of economic change serves as a mirror that reflects the social structure and its likely changes. K. Kristiansen

(Kristiansen 1998, pp.98-111), K. Kristiansen and T.B. Larsson (Kristiansen, Larsson 2005, pp.108-141) and G. Bakker (Bakker 2006, pp.325-381) also emphasise this idea in their work. A. Merkevičius' claim that the first bronze artefacts emerged in Lithuania as a result of social rather than economic reasons (Merkevičius 2005, p.45) is not convincing. It should lead to the assumption that in a society which has not reached a corresponding level of economic development, institutions of a social structure that formed on another economic basis cannot emerge. A convincing example of this might be the twofold increase in the level of the production economy (an increase in the numbers of livestock) in eastern Lithuania in the first quarter of the second millennium BC (Girininkas 2005, pp.269-275). This already enabled the development of the secondary products revolution, as A. Sherratt (Sherratt 1994, pp.244-274) put it, in the community of the Kretuonas 1C settlement. The daily use of milk and various dairy products, as well as of fabric made from wool, increased the amount of food and reduced the need for hunting as a source for the production of clothing. Accordingly, this enabled an increase in the population of the community which, as new branches of the economy developed, needed an even larger labour force. These processes shaped changes in the structure of the settlement, and a need for the emergence of new branches of the economy, such as metallurgy. Communities which were economically weak were unable to adopt and shape such new forms of the economy. Only economically strong Late Neolithic communities formed large settlements with an expressive cultural layer in the Early Bronze Age, because during that period all economic activities were carried out in a centrally managed and socially differentiated area of the settlement. Therefore, if we compare the development of communities which continued the traditions of the Late Forest Neolithic, we can see that those who continued the traditions adopted the production economy, and during the Early Bronze Age lived in settlements which had a large territory and population. The populations of communities which did not belong to Corded Ware or Globular Amphora cultures were traders in the forest zone and did not form economically strong settlements. Only in communities which were strong and had a developed production economy did the emergence of metal socialise the community even more.

The emergence of metallurgy and local artefacts, which Lithuanian archaeologists have dated to O. Montelius Period III (Luchtanas, Sidrys 1999, p.20), is dated too late. In terms of the level of economic development, the community of the Kretuonas 1C settlement who lived around 2000 to 1650 BC were already able to develop remelting metallurgy and produce metal artefacts

for their needs. This is supported by the archaeological material found in the settlement (Girininkas 1994, pp.210-223; Daugnora, Girininkas 2004, pp.233-250) and the social structure of the community of the settlement. The metal that came into the possession of the settlement was not a toy (members of the community who practised the production economy were capable of understanding its importance), whereas close trade relations with members of the community of Trzciniec culture, which was then undergoing formation, enabled the former to comprehend the properties of metal instantly and learn to remelt it.

## Conclusions

On comparing two different yet simultaneous Early Bronze Age communities in Lithuania which lived in different natural environments, it has been established that:

1. The economies and social structures of Early Bronze Age communities in east Baltic coastal areas (Šventoji 23 and Šventoji 9) and further inland developed differently. This was influenced to a large extent by the natural environment, trade relations, and supplies of raw materials.
2. The development of the production economy and social features of communities of coastal areas of Lithuania related to the production economy were largely influenced by a reduction in the quantity of raw amber, and by the further development of profitable branches of the economy (fishing and seal hunting). The communities of the Early Bronze Age settlements in Šventoji continued the way of living of Late Neolithic communities, and from a social point of view no new features are observed among the members of the community.
3. In inland Lithuania (the settlements around Lake Kretuonas), the Early Bronze Age communities which continued the economic activities of Late Neolithic forest communities developed the production economy rapidly, and the social structure of these communities only underwent deep differentiation on the basis of it.
4. It was not only natural circumstances that influenced economic and social differences among communities which lived in Lithuania's coastal area and inland. In strong communities that had practised the production economy from the Late Neolithic, the emergence of metal in the Early Bronze Age brought even deeper differentiation into their internal social structure, as the nobles stood out: the chief, the prophet, or a single family who could represent the community. An example of such a community in inland Lithuania could be the Early Bronze Age Kretuonas 1C settlement.



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## LIETUVOS ANKSTYVOJO BRONZOS AMŽIAUS BENDRUOMENIŲ ŪKIS IR SOCIALINĖ STRUKTŪRA

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### Santrauka

Ankstyvajame bronzos amžiuje rytinės Baltijos jūros pakrančių gyventojų (Šventosios 23-ioji ir 9-oji gyvenvietės) ir kontinentinės dalies bendruomenių ūkis ir socialinė struktūra vystėsi skirtingai (1–8 pav.). Tam didelę įtaką darė gamtinė aplinka, prekybiniai ryšiai ir žaliavų ištekliai. Gamybinio ūkio ir su juo susijusių Lietuvos teritorijos pajūrio bendruomenių socialinių ypatumų raidai didelę reikšmę turėjo gintaro žaliavos sumažėjimas, rentabilių ūkio šakų (žvejybos, ruonių medžioklės) tolesnė raida. Šventosios ankstyvojo bronzos amžiaus gyvenviečių bendruomenės tęsė vėlyvojo neolito bendruomenių gyvenseną, socialiniu požiūriu naujų ypatumų tarp bendruomenininkų nepastebėta.

Kontinentinėje Lietuvos teritorijos dalyje (Kretuono apyežerės gyvenvietės) ankstyvojo bronzos amžiaus bendruomenės, tęsiančios vėlyvojo neolito miškų bendruomenių ūkinę veiklą, sparčiai vystė gamybinį ūkį, todėl šių bendruomenių socialinė sankloda stipriai diferencijavosi.

Šiuos Lietuvos pajūrio ir kontinentinės dalies bendruomenių ekonominius ir socialinius skirtumus lėmė ne vien gamtinės aplinkybės. Stiprių, gamybinį ūkininkavimą nuo vėlyvojo neolito praktikavusių bendruomenių vidinė socialinė struktūra ankstyvajame bronzos amžiuje, pasirodžius metalui, dar labiau diferencijavosi – išsiskyrė diduomenė: vadas, žynys, jos atstovai galėjo būti atskira šeima. Tokiu pavyzdžiu Lietuvos kontinentinėje dalyje gali būti ankstyvojo bronzos amžiaus Kretuono 1C gyvenvietės bendruomenė.