

Autoriaus nuomone, šios vystymosi paralelės, aptiktos tokiose toli vienas nuo kito nutolusiuose šiaurės Europos taškuose, gali būti mokslinio bendradarbiavimo pagrindas. Atsisakius vietinės perspektyvos ir pritaikius paribio analizės metodą, galima nagrinėti bendras Piltuvėlinės ir Virvelinės keramikos kultūrų apraiškas Europoje. Kol kas klausimas remiasi pagrindinės paplitimo zonos principu, nekreipiant dėmesio į šių neolito kultūrų ideologinių bei socialinių-ekonominių sistemų funkcionavimą paribio zonose ir sąveiką bei integraciją su medžiotojų-rinkėjų bendruomenėmis. Požiūris į Lietuvos ir Vakarų Norvegijos neolito visuomenes, kaip paribio sferas, šiame plačiame kontekste galbūt leistų geriau suprasti šių kultūrų dinamiką ir prigimtį, taip pat Šiaurės Europos neolitizacijos procesus.

Norint pademonstruoti paribio zonų analizės metodo svarbą, Virvelinės keramikos kultūros migracijos hipotezė vertinama lyginant šios kultūros pagrindinio paplitimo zoną pietų Skandinavijoje su Lietuvos/Vakarų Norvegijos paribio zona. Parodoma, kad Pietų Skandinavijoje buvo ryški skiriamoji linija tarp Piltuvėlinių taurių ir Virvelinės keramikos kultūrų; tuo tarpu nebuvo jokios skiriamosios linijos paribio paplitimo zonoje. Tiek Vakarų Norvegijoje, tiek Lietuvoje pastebimas tam tikras buvusių kultūrų tęstinumas, plintant Virvelinės keramikos kultūrai. Šios skirtingos Virvelinės keramikos kultūros paplitimo formos šiaurėje ir pietuose kol kas nebuvo traktuojamos kaip dalis bendros visai Europai Virvelinės kultūros migracijos. Paribio zonų tyrimo metodas atskleidžia erdvinę koreliaciją Pietų Skandinavijoje tarp vietinės Piltuvėlinės keramikos žemdirbių bendruomenės paplitimo zonos ir teritorijos, kur šią kultūrą pakeitė vėlyvesnės žemdirbių bendruomenės Virvelinės keramikos kultūra. Šis metodas taip pat leidžia logiškiau paaiškinti šią kultūrų kaitą kaip žemdirbių ideologinių pažiūrų transformaciją, suvokiant bei priimant naują socialinę ir religinę struktūrą, kuri skatino kultūrinis pokyčius, greitai paplito socialinėje ekonominėje srityje.

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## The "Stone Age in South Lithuania" Project

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#### Introduction

After receiving independence, Lithuania lived through a period of great political and economic change. Naturally, this had an impact on archaeology and all other sciences. Today, there are more opportunities to become familiar with the work and techniques of archaeologists in Western countries. There is, however, a dearth of funds available for archaeological research in Lithuania. This creates a frustrating situation where Lithuanian archaeologists know what questions they would like to address, and what equipment and methods of investigation they would like to use, but they cannot carry out the work due to the lack of financial resources. Generally, there are enough funds to carry out field work, but insufficient resources for post-excavation work, such as scientific investigation of the recovered material. This is a particular problem for research institutions and museums. In this paper, I would like to present one attempt to solve these problems which has been supported by the Lithuanian State Science and Study Foundation.

The Lithuanian State Science and Study Foundation was established in 1994. Every year it awards money in support of scientific programs. Given the vast number of programs in need of funding, one way to attempt to meet the demand is through cross-disciplinary collaboration. In 1994, the Foundation decided to support a program titled "Stone Age in South Lithuania" and carried out by four separate institutions: the National Museum of Lithuania, the Lithuanian Institute of History, the Institute of Lithuanian Geology, and the Department of Geology and Mineralogy at Vilnius University.

#### Archaeological and Geological Background, and the Aims of the Research

South Lithuania is not *tabula rasa* on the Lithuanian archaeological map. It is especially rich in Stone Age sites and finds (Rimantienė 1974). Stone Age studies in Southern Lithuania began in the 19th century, when amateur archaeologists began

to collect surface artefacts and register sites (Szukiewicz 1901; Gloger 1903). After the Second World War, a new stage of investigation began, characterized by the excavation of Stone Age settlements (Bernotaitė 1958). The majority of this work was done by R. Rimantienė. Between 1966 and 1982, R. Rimantienė excavated several Palaeolithic-Early Bronze Age settlements east of the Nemunas River (Jablonskytė-Rimantienė 1966; 1966a; 1969; Rimantienė 1985; 1985a; 1992). She has placed the main archaeological data from the excavated sites in South Lithuania in the context of the chronological and cultural developments of the Lithuanian Stone Age (Rimantienė 1984; 1994). In recent years, excavations of Neolithic-Early Bronze Age settlements have been undertaken in the western part of South Lithuania (Juodagalvis 1992; 1994; 1994a).

The excavation of Stone Age sites has revealed the complexity of cultural development in South Lithuania, particularly during the Neolithic. In the Early and Middle Neolithic, the Nemunas culture existed in close proximity to the Funnel Beaker and Globular Amphora cultures. The nature of the relationship between these cultures awaits more extensive study. Previously, the Corded Ware culture was believed to be the only culture present during the Late Neolithic. However, new archaeological data indicate the presence of several cultures of local origin which existed alongside the Corded Ware Culture. The examination of contemporaneous assemblages from south Lithuanian sites shows a diversity in the degree of penetration of the Corded Ware culture (Rimantienė 1984:219-224). The origin, development and duration of the Nemunas culture, its relationship with other Neolithic cultures, and its role in the development of the Baltic culture are the main questions which need to be addressed. The culture-chronological interpretation of the archaeological data is hampered by absence of radiocarbon dates.

As for the earliest human settlement of the region, the results of recent geological, paleobotanical and geochronological research indicate that during the last glacial, South-eastern Lithuania was not covered by ice during the Grūda stage (24 000-17 000 years ago) or the Baltic stage (16 000-12 800 years ago). Geologists maintain that climatic conditions would have supported human life at this time. While there is no archaeological data to corroborate human presence during this period, it is a theoretical possibility.

Three main lines of investigation have been defined for the project: 1) the initial settlement of South Lithuania and the environment during the Late Pleistocene and Holocene, influence of global and regional natural occurrences on the living conditions of the first inhabitants; 2) settlement pattern analysis and reconstruction of geological and geomorphologic features; 3) evolution of local archaeological cultures. The geological part of program involves ascertaining the structure and formation of Pleistocene and Holocene sediment, studying geological-geomorphologic surface features and their stages of development, describing morphometric, morphological and paleogeographic features, and determining the chronology of the formation of river terraces. Paleobotanical investigation includes the reconstruction of human living conditions and the character of economic activity, as well as pollen and diatom analysis of sediment from lake and river terraces.

The plan of the Program involves fieldwork which will be conducted in 1997. Though several preliminary articles have been published, the final results of the investigations, including a joint archaeological-geological atlas, will be published later in a separate edition. A selection of the archaeological discoveries will be described below.

## Implementation of the Program, Limitations and Preliminary Results

The Institute of Geology was responsible for proposing the collaboration and it co-ordinates the project. The Institute of Geology has taken part in similar projects in the past, and has organizational experience. Given these circumstances, the Program is more geological than archaeological, though its title is purely archaeological. In this paper I will not discuss the work of the geologists and palynologists in any depth, and will refer only to aspects of our collaboration. No problems have arisen in co-operating with the palynologists since there is a tradition of collaboration between this field and archaeology. Further, this co-operation had more personal character, and now occurs on the cross-institution level. The Project marked the first collaboration between archaeologists and the Institute of Geology. It is only natural that problems of conflicting interests arise occasionally. For example, the geologists are interested in geological processes that occurred much earlier than is relevant for archaeologists.

The archaeological part of the Program is based on a close collaboration between the National Museum of Lithuania and the Lithuanian Institute of History. These institutions have divided the various chronological periods between themselves, trying to cover the entire Stone Age, with special attention to the transitional periods. The work was begun in 1994. Initially, it involved the study of old collections and archives. The location and more accurate definition of sites mentioned in earlier records was not always successful since the landscape has often been altered by human activity. The construction of hydro-electric power stations caused water levels to rise, and lake-shores and riverbeds have changed as a result. The following year, the Lithuanian Institute of History organized a fieldwalking survey and test excavations in the Merkys and Varėnė river basins in an attempt to locate more potential sites for archaeological excavations. At the same time, material from R. Rimantienė's former excavations at the sites Barzdīs forest, Dubičiai and Margiai was being prepared for publication. In 1995-1996, T. Ostrauskas led a group of archaeologists who excavated several sites with cultural deposits dating from the Late Palaeolithic to Early Bronze Age: Kabeliai 2, Varėnė 2, and Kašėtos 1 and 2. Another group, led by R. Rimantienė, began excavations at the Middle Neolithic settlement of Grūda 3 in 1996. Archaeologists from the National Museum of Lithuania, led by me, continued earlier investigations of the Neolithic-Early Bronze Age settlements Zapsė 1, Zapsė 5 and Dusia 8 to the west of the Nemunas River. In 1996, this group began excavations at the Varėnė 5 site, with deposits from the Early Mesolithic and Neolithic (Fig. 1).

The majority of known Stone Age sites are situated on high sandy terraces of rivers and lakes. Usually the cultural layers and features are eroded by wind or disturbed by human activity and tree roots. In many cases, areas selected for excavation were surrounded by trees (Fig. 2). The work at the south Lithuanian sites also has a rescue character because some of settlements selected for excavation may soon be destroyed. Varėnė 5, for example, is situated on an eroded riverbank (Fig. 3).

The investigation of Neolithic sites indicates the complexity of economic development in South Lithuania. The short-term use of Neolithic sites for specific activities is suggested by the low intensity of cultural deposits, the small habitation

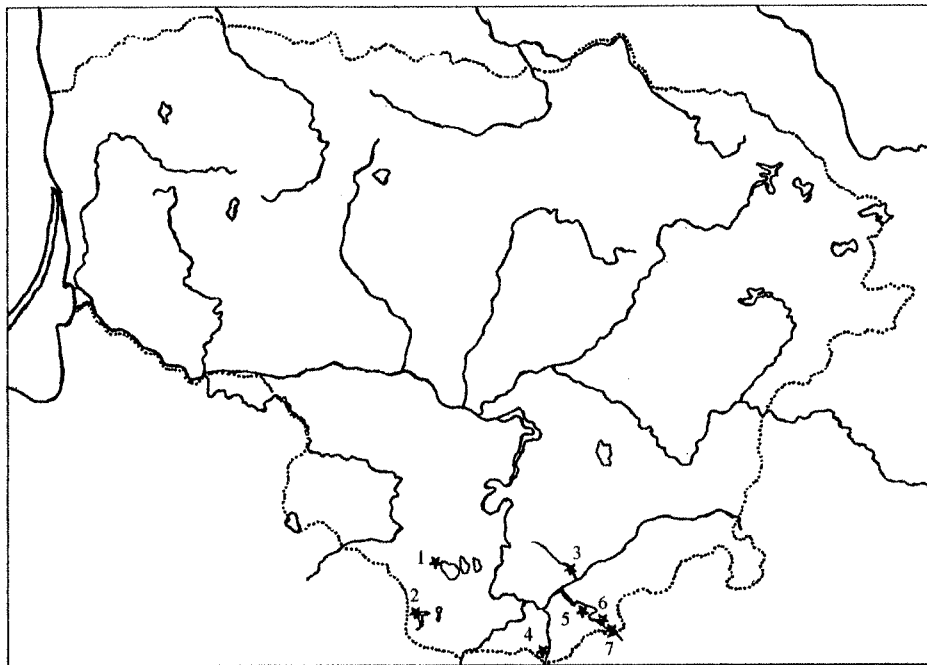


Fig. 1. Map of sites mentioned in the text: 1-Dusia 8, 2-Zapsė 1, 5, 3-Varėnė 2, 5, 4-Grūda 3, 5-Kašėtos 1, 2, 6-Barzdis forest, Margiai, 7-Dubičiai



Fig. 2. Stone Age site Zapsė 5. View of excavations in 1996



Fig. 3. General view of Stone Age site Varėnė 5

areas, the character of the dwellings and the artefact types of this period. Hunting and gathering was the main economic activity until the beginning of Bronze Age. The Neolithic hunter-gatherers continued the traditions of the Mesolithic flint industry, such as pressure and micro-burin techniques. The Neolithic types of flint tools that appeared through the influence of neighbouring cultures were unable to supplant the old ones. Ground-stone technology was known but very rarely used.

The question of geometric microliths and micro-burin technique in the Neolithic and Early Bronze Age is problematic. It becomes even more so when discussing it with archaeologists from countries where microliths are not found in Neolithic settlements. Generally, they regard microliths found in Neolithic contexts as intrusive. Of course this possibility cannot be dismissed (Fig. 4, 5), but microliths and micro-burin technique are found in all of the investigated Neolithic sites in South Lithuania.

The artefact assemblage from the Early Bronze age settlement of Dusia 8 (Figure 3) is thus very important. The flint material from the site is typical of the Bronze Age: arrowheads, microliths, micro-burins, burins, knives, unpolished axes etc. (Fig. 6). A combination of old and new techniques is clearly illustrated on some trapezes made by micro-burin technique and edged with flat Neolithic retouch (Fig. 6:10). The ceramics are characteristic of the Brushed Pottery culture. In this case, I must reject the possibility that the deposits are mixed because pollen-dating and geological data indicate that the terrace on which the site was situated dates to the second part of the Atlantic period, when it was a shallow lake. In addition, the palynological diagrams show traces of human activity during the second half of the Subboreal period.

The sandy soils of the excavated sites do not provide favourable conditions for the preservation of ceramics. Nonetheless, the small and poorly preserved

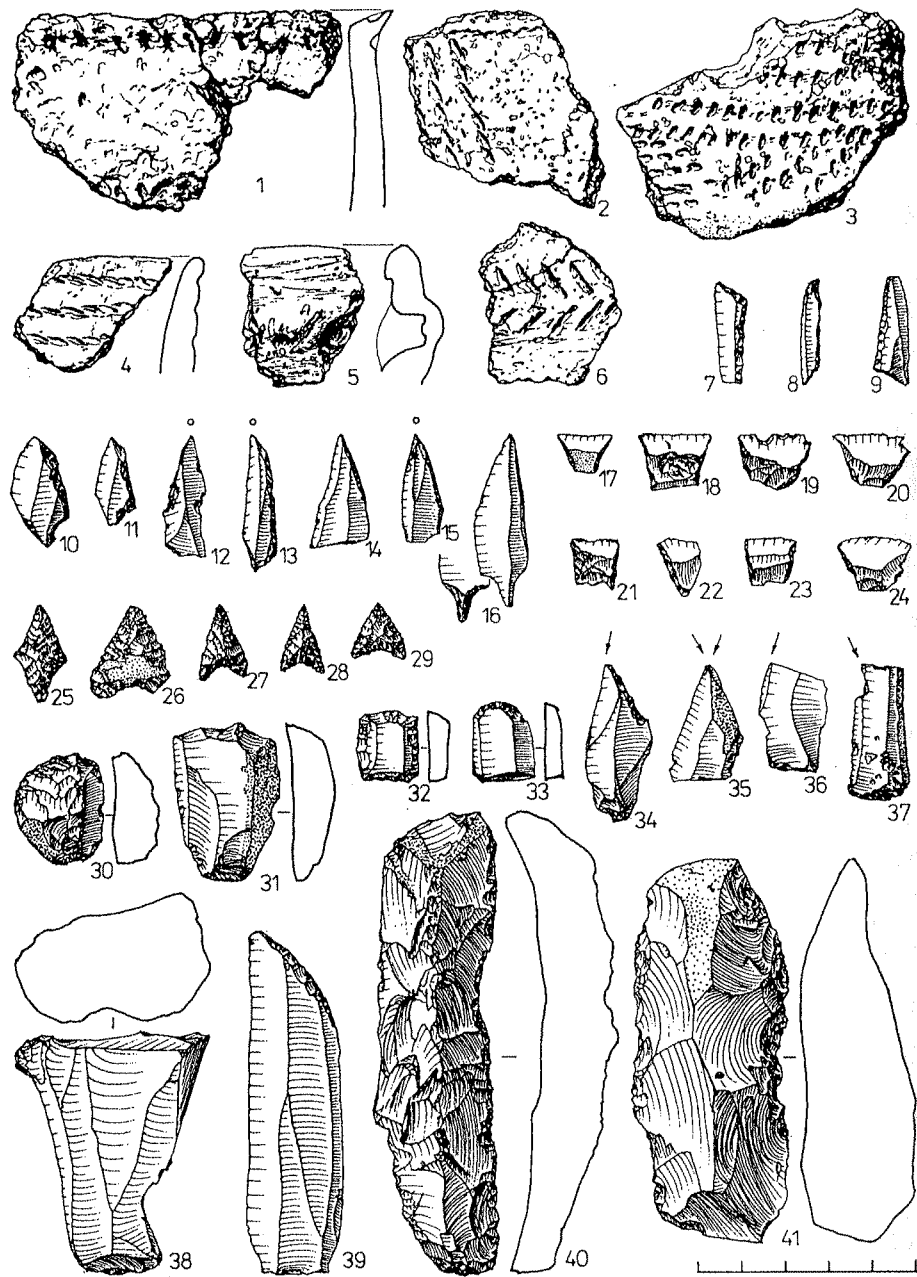


Fig. 4. Finds from Stone Age site Zapsé 5

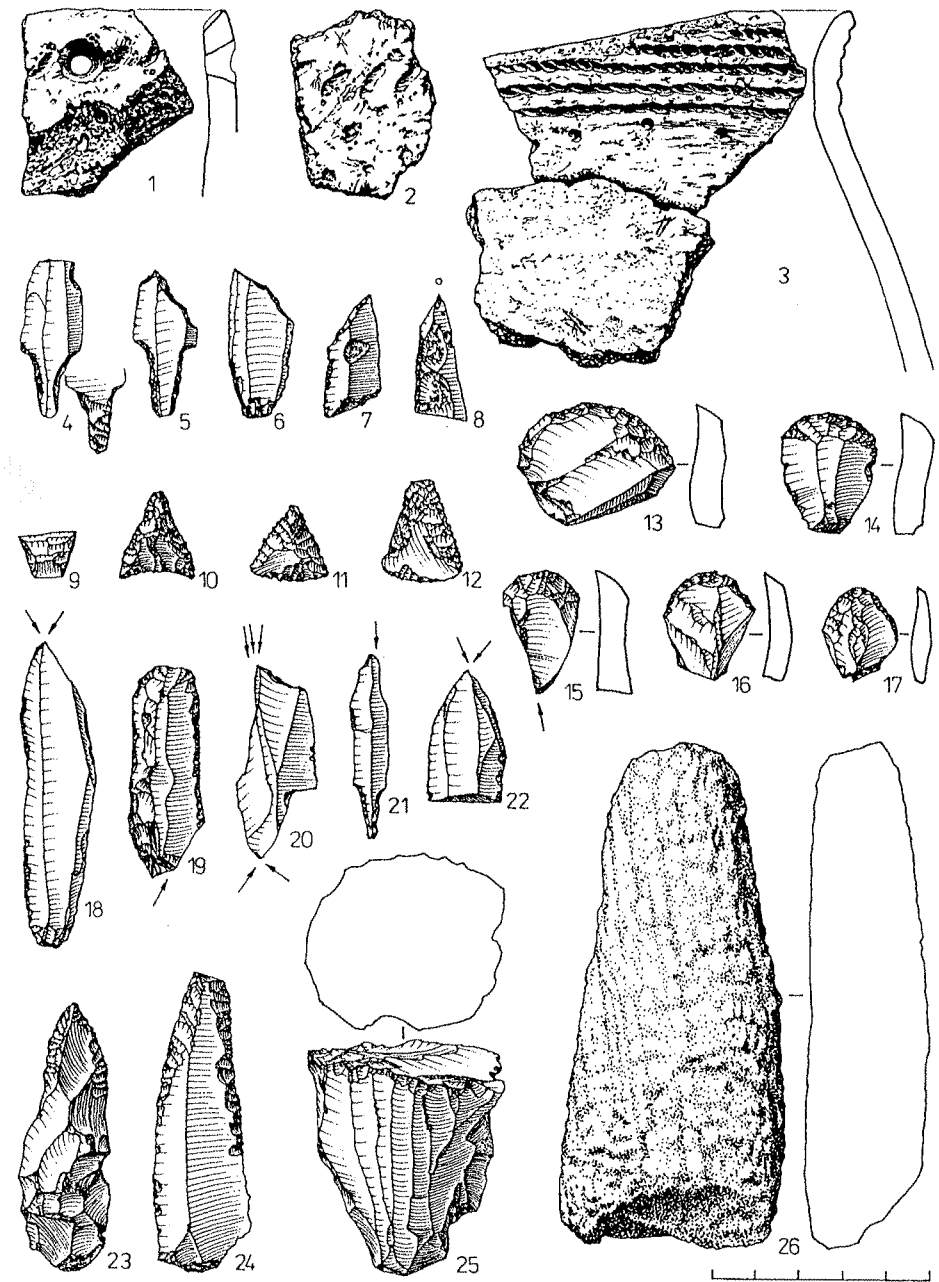


Fig. 5. Finds from Stone Age site Varéné 5

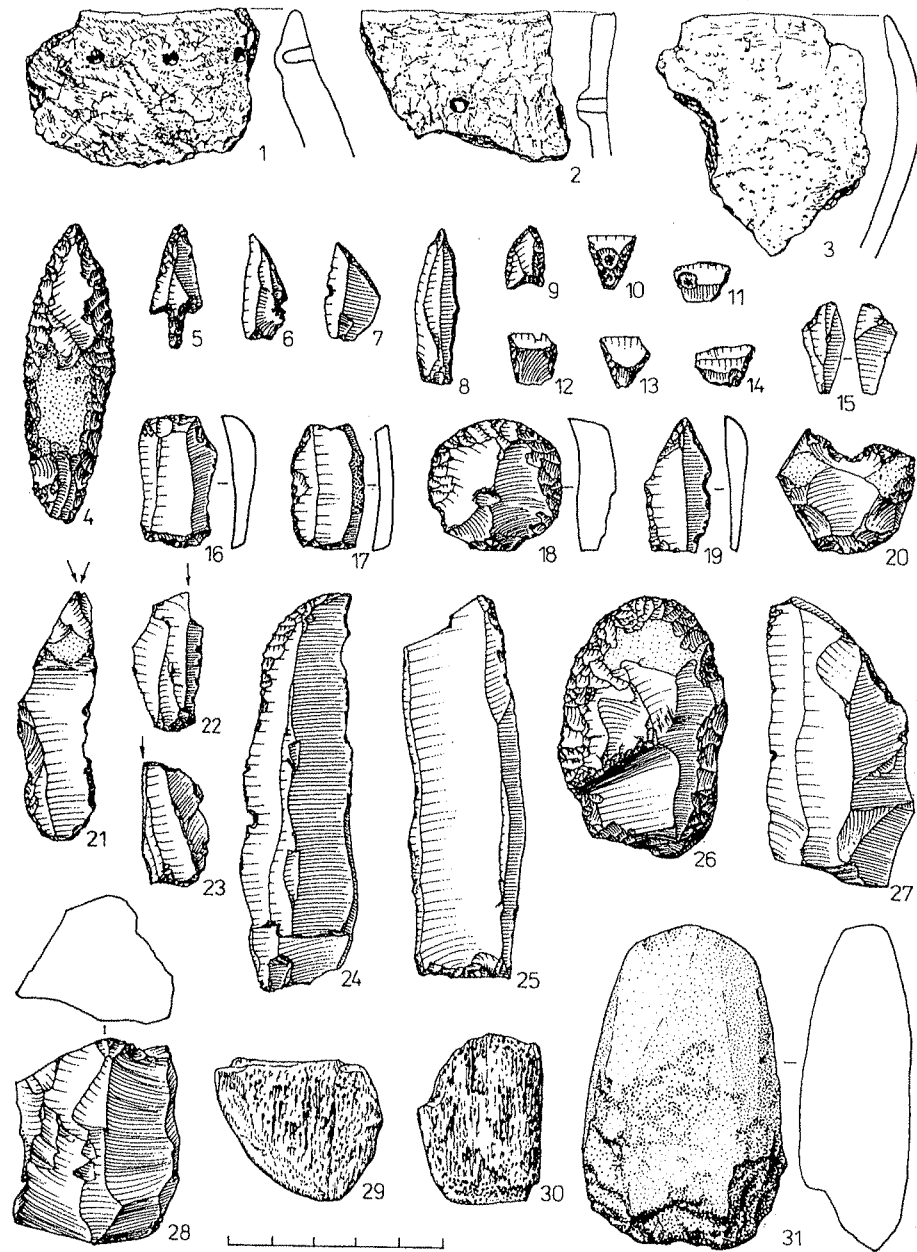


Fig. 6. Finds from Early Bronze Age site Dusia 8

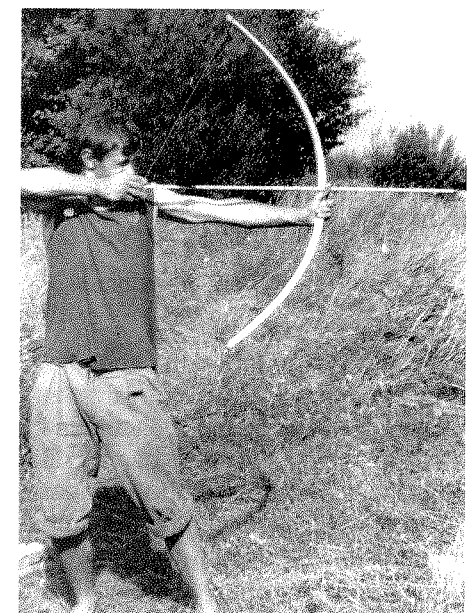
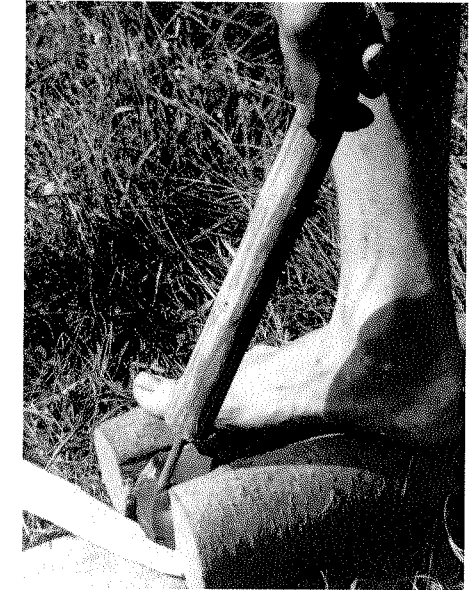
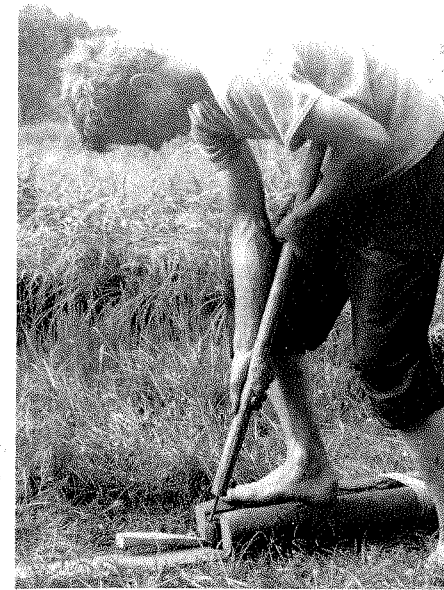


Fig. 7. Making and using flint tools

shards testify to a variety of ceramics. Corded Ware designs found on shards with plant (Fig. 5:4) or quartzite (Fig. 5:2) temper are characteristic of the Nemunas culture. In other cases, shards with sand and crushed granite temper, typical of the Globular Amphora and Corded Ware cultures, are found with characteristic Nemunas culture decoration (Fig. 5:5).

The use of flint tool typology as a chronological indicator must be applied with caution, given specificity of the development of the south Lithuanian flint



Fig. 8. Screening of excavated soil at Bronze Age site Dusia 8

Lithuania (Fig. 8). This method is particularly effective in the excavation of settlements with dense and wet cultural deposits. The efficiency of water screening is clearly illustrated in the diagram (Fig. 9).

## Conclusion

The "Stone Age in South Lithuania" Project will continue. The execution of the Project has had many positive results, the most important of which is the collaboration between the various institutions. The experience gained and the relationships established can be used to organize further projects in the future. The financial support of the Foundation enabled the Project to approach modern standards of research, and to purchase a minimum of indispensable equipment necessary when applying the new methods of investigation.

Too short a time has been allotted for the execution of the Project. The work which has already been done, and which continues at present, is merely the beginning of the long and serious investigation outlined by the "Stone Age in South Lithuania" Project.

industry. Thus, the study of the technological aspects of the flint industry is very important. Since 1992, the Department of Archaeology at the National Museum of Lithuania has carried out an experimental archaeology project involving the making and use of flint tools. Over the last three years, numerous tools have been made using percussion, indirect percussion, pressure and micro-burin techniques (Fig. 7).

New methods were applied in the excavations at Dusia 8, Zapsė 1 and Varėnė 5 as a result of co-operation between Norwegian and Lithuanian archaeologists. In the spring of 1995, Bergen University and the Bergen Museum invited me to participate in the Skatestraumen project. I took a part in the excavation of the Haukedal 1 site. After this visit, the water screening method practised by Norwegian archaeologist was used successfully in

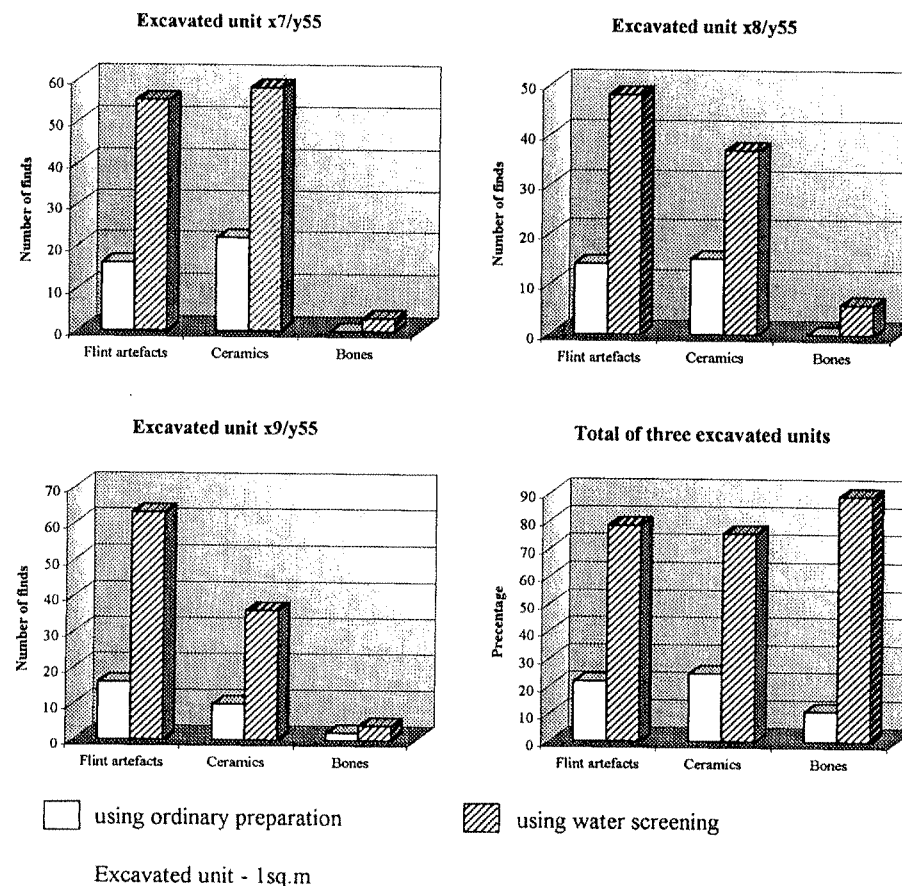


Fig. 9. Diagram of the efficiency of the water screening method at Bronze Age site Dusia 8

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## Programa „Akmens amžius Lietuvoje“

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### Santrauka

Nuo 1994 m. Lietuvos istorijos institutas, Lietuvos nacionalinis muziejus, Lietuvos geologijos institutas ir Vilniaus universiteto Gamtos fakulteto Geologijos ir mineralogijos katedra kartu vykdo mokslo tiriamuosius darbus, numatytus programoje „Akmens amžius Pietų Lietuvoje“. Programą remia Lietuvos valstybinis mokslo ir studijų fondas.

Programos turinį sudaro trys pagrindinės tyrinėjimų kryptys: 1) Pietų Lietuvos apgyvendinimas ir gamtinė aplinka vėlyvojo pleistoceno ir holoceno metu, globalinių bei regioninių gamtos reiškinių įtaka žmonių įsikūrimo ir gyvenimo sąlygoms; 2) akmens amžiaus stovyklaviečių ir gyvenviečių geologinės, geomorfologinės bei paleogeografinės sąlygos; 3) vietinių archeologinių kultūrų raida.

Archeologų ir gamtos bei tikslųjų mokslų specialistų bendradarbiavimas ypač svarbus tyrinėjant akmens amžiaus paminklus Pietų Lietuvoje, kur nesuklostė palankios sąlygos kultūriniais sluoksniams išlikti. Kasinėjant šios teritorijos paminklus, buvo įdiegtas norvegų archeologų plačiai naudojamas kultūrinių sluoksnių plovimo metodas.

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## Two hundred years of archaeological survey

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### Introduction

This article is based on a regional analysis of the Early Iron Age settlement pattern, in the Province of Vendsyssel, Northern Jutland (Diinhoff 1989). The Province of Vendsyssel is the northmost region of Denmark (Fig. 1).

### Archaeological Landscape Analysis

I define this type of study as “Landscape-Archaeology” – that is a mixture of traditional settlement archaeology and cultural geography. It is a rather comprehensive and time-consuming type of research, combining several levels of analysis and ideally involving the participation of scientists from different academic fields (Berglund 1991).

The main purpose of the project was to study the structures of settlement patterns in Pre Roman and Early Roman Iron Age (500 BC – 150/175) (Lund-Hansen 1987, Fig. 10) and to uncover the cultural and ecological variables that caused habitation to be located in certain topographical areas. That is in plain words, in what landscapes were the settlements located and why? The results of this analysis are no doubt interesting, but I shall mainly concentrate on presenting some of the methodological aspects.

### Research Area

The settlements cannot fully be understood, when treated as isolated objects (Trigger 1989:279). In prehistory as today the settlements are related and defined in cultural, political and economic networks. They form up an inter-settlement

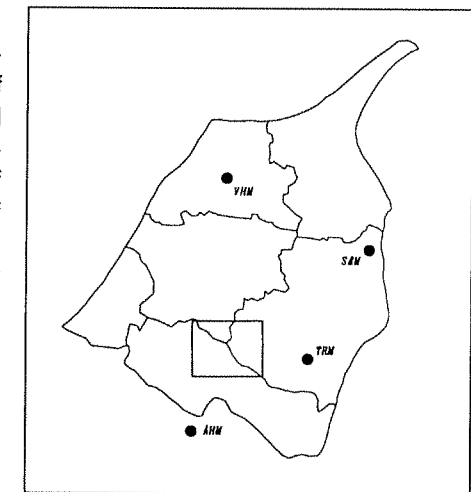


Fig. 1. The Province of Vendsyssel. Circles show position of museum in the region. In addition The National Museum of Denmark is situated in Copenhagen. The square in the southern part of Vendsyssel shows the selected sub-area selected as an example in this article.