ŠVENTOJI REVISITED – THE JOINT LITHUANIAN-NORWEGIAN PROJECT

VYGANDAS JUODAGALVIS, DAVID NEIL SIMPSON

BACKGROUND AND GOALS

Representatives of the University of Bergen initiated the collaboration, which led to the excavation in the Stone Age settlement area of Šventoji, in 1992. The co-operation has since then been formally established through the signing several co-operative agreements between the University of Bergen and the Vilnius University and the Institute of Lithuanian History. The co-operation has resulted in a wide interdisciplinary contact network between researchers of the two countries, the exchange of literature and laboratory services, the participation of Lithuanian field researchers in Norwegian excavation projects and the realization of a Bergen-Lithuanian archaeological/ interdisciplinary conference in April 1996, which papers were published in the third volume of the Lithuanian magazine *Archaeologica Baltica.*

The Šventoji excavation was a constructive next step in the cooperative process. Our contributions are aimed particularly at interdisciplinary cultural research and education, involving the natural sciences of botany and zoology (in this context paleobotany and paleozoology). The plans for the 1997 Šventoji investigations were originally divided into a one-month period of excavation and a follow up period of analysis and publication in the autumn. This would have to involve 20 researchers from both countries participating in the excavation and a post excavation programme based on the exchange of 6 researchers representing the disciplines of archaeology, paleobotany and paleozoology. However, only 3 weeks before the start of the planned fieldwork it became clear that the funds, which we expected, would be not received. Since a cancellation of the excavation would threaten the future of the cooperation, alternative sources of funding had to be found. After a short period of intensive replanning it was secured sufficient funding from sources of the University of Bergen to undertake a 2-week program of excavation at Šventoji. Apart from the organizational difficulties, Management of National Museum of Lithuania refused to sign the agreement of co-operation without reasonable explanation. Although we succeeded in engaging a good interdisciplinary crew for the excavation, reduction of the time frame did not allow time for more than a preliminary investigation.

The 1997 excavation, undertaken in the period of June 29 to July 10, involved 10 Lithuanian and 7 Norwegian participants representing archaeology (8 in field, 2 in conservation), paleobotany (3), paleozoology (3) and quaternary geology (1). Leading the excavations were Vygandas Juodagalvis, National Museum of Lithuania (from 1998 employed at Institute of Lithuanian History) and Asle Bruen Olsen, University of Bergen, Department of Archaeology. David Simpson and Trond Klungseth Lødøen, both employed at the Department of Archaeology, University of Bergen, functioned as operative field leaders. Unfortunately, Rimutė Rimantienė couldn't take part in the field works of 1997. However, a few consultations and a visit of Šventoji region were organized and the prospective works discussed beforehand.

Šventoji is situated in Palanga district in the northern part of Lithuania. The prehistoric settlements were located along the shores of a coastal lagoon, which became the Pajūris bog during the end of the Neolithic (Fig. 1). The sites where first discovered in 1966 during the draining of the bog, and a total of 42 sites have been identified to date. It is noted that some of these where completely destroyed by the draining programme and agriculture. From 1966 to 1972 and between 1982 and 1995 survey and excavation was carried out in the area by Lithuanian teams, leading by Rimutė Rimantienė. These surveys and investigations revealed that the archaeological sites located in the area are important culture-historical sources, containing unique information about prehistory (Rimantiene 1979; 1980; 1992; 1995; 1996 a, b, c; 1998). The sites represent Late Stone Age settlements

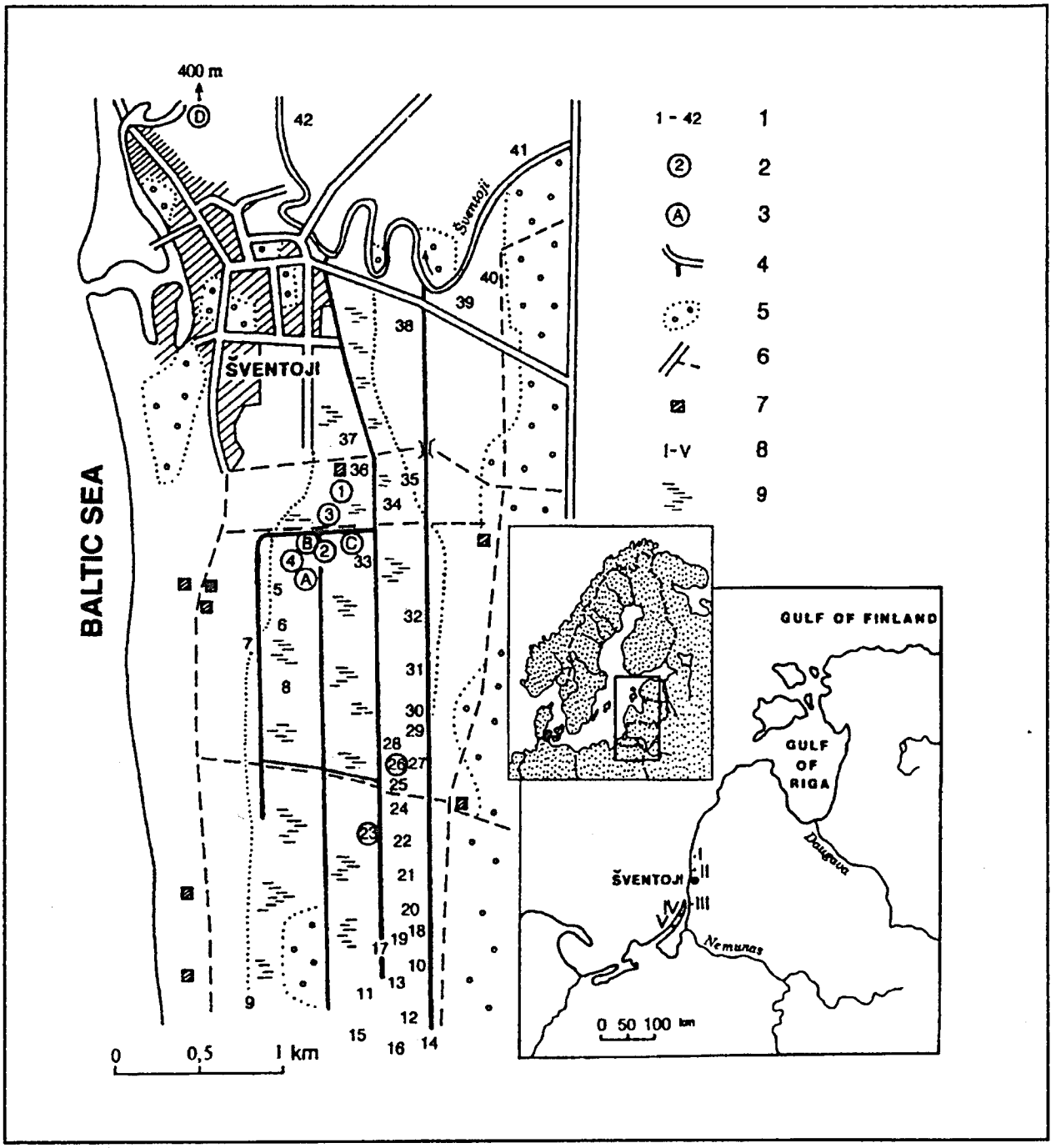

Fig. 1. Orientation map of Šventoji settlement and studied sites. 1) Archaeological sites, 2) archaeological sites with pollen data, 3) sites with pollen and diatom data from cored section, 4) river and canals, 5) forests, 6) roads and paths, 7) farmsteads, 8) sites with diatom characteristic of the Litorina coastal zone, 9) the bog Pajūris. (After M. Kabailienė and R. Rimantienė, 1998).

of importance for the interpretation of the latest hunter-gatherer society and the emergence of agriculture in the Baltic region. The Šventoji sites are localities with optimal conditions for the preservation of organic remains related to economic, ritual and social activities among the settlers of the area in prehistory. The preservation conditions make the Šventoji sites ideal objects for interdisciplinary research.

Two key sites, Šventoji 4 and 6 (Fig. 2), were selected for interdisciplinary investigation. In these sites

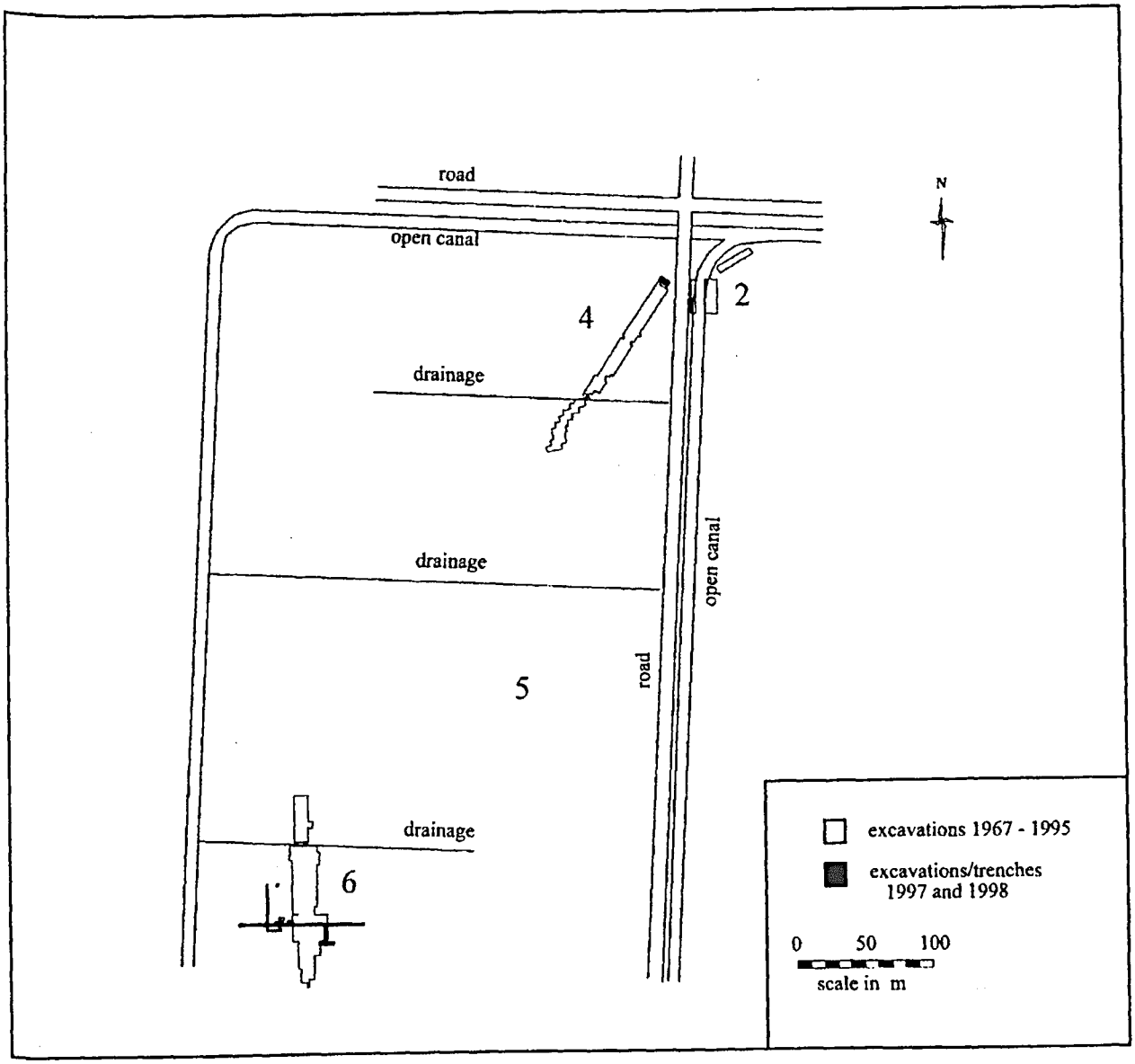

Fig. 2. Location of Šventoji 2, 4, 5 and 6 in relation to drainage canals. Excavated areas outlined (drawing of V. Juodagalvis and D.N. Simpson).

we succeeded in locating contexts suited to an integrated and stratigraphically controlled documentation of artifacts, bones, palynological data and diatom data.

In 1998 we continued the excavations at Šventoji 4 that were initiated in 1997. This fieldwork took place from August 3 to August 13, and was run parallel and in co-operation with excavations directed by Rimutė Rimantienė at Šventoji 9.

The main strategy for the investigations of Šventoji 4 and 6 was to define undisturbed archaeological situations and excavate and correlate archaeological remains with the sampling of paleobotanical, diatom, and osteological data with the aim of reconstructing patterns of prehistoric geotopography, vegetation and zoology.

INVESTIGATIONS AT ŠVENTOJI 6

The archeological investigations at Šventoji 6 were carried out by trenching through the previously excavated area by the use of a backhoe, in order to identify undisturbed areas of the locality (Fig. 3, 4:1). The deep trench profiles fixed the stratigraphical position of the settlement horizon (Fig. 4: 2,5) and also served as the

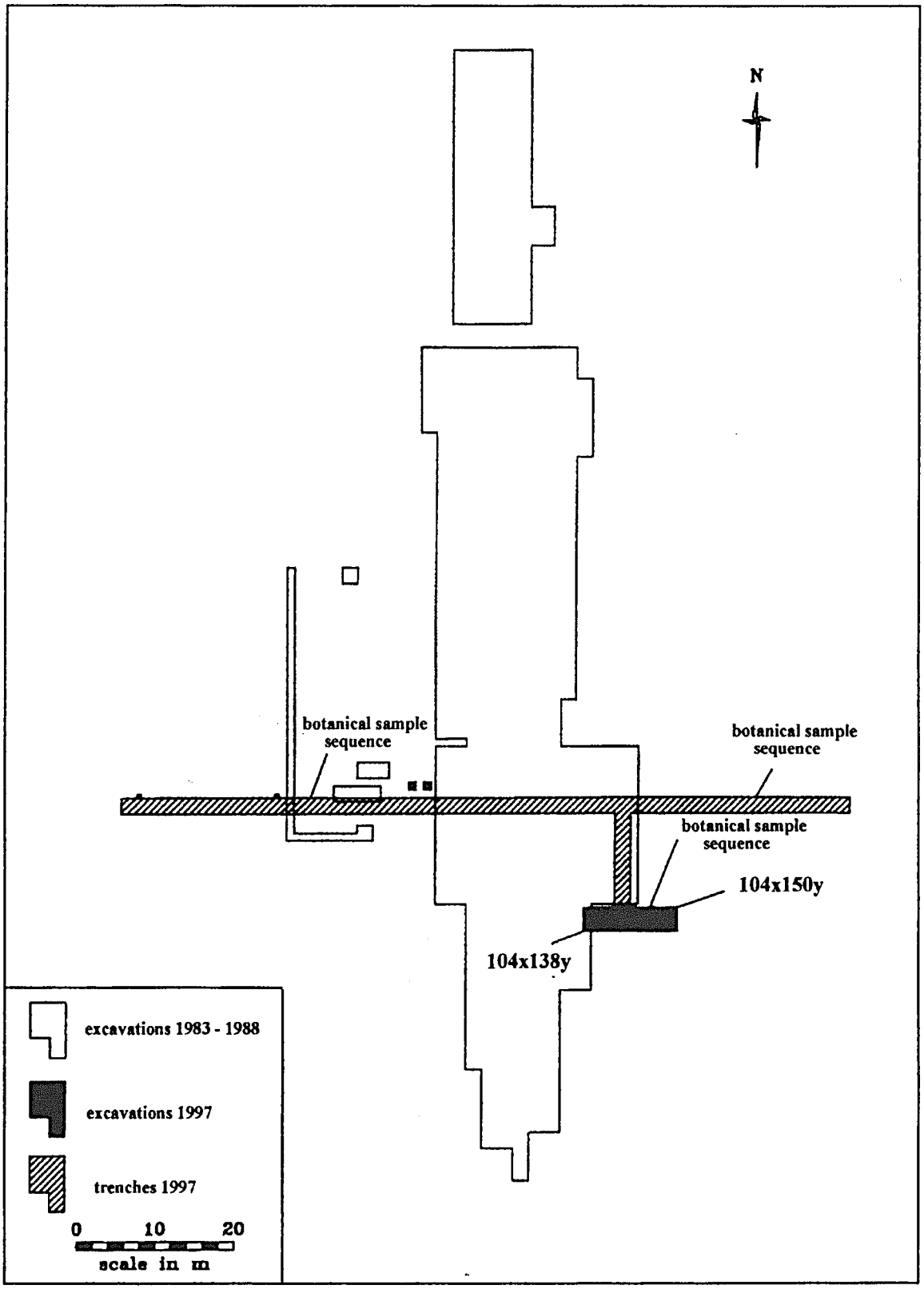

Fig. 3. Excavated area of Šventoji 6 (drawing of V. Juodagalvis and D.N. Simpson).

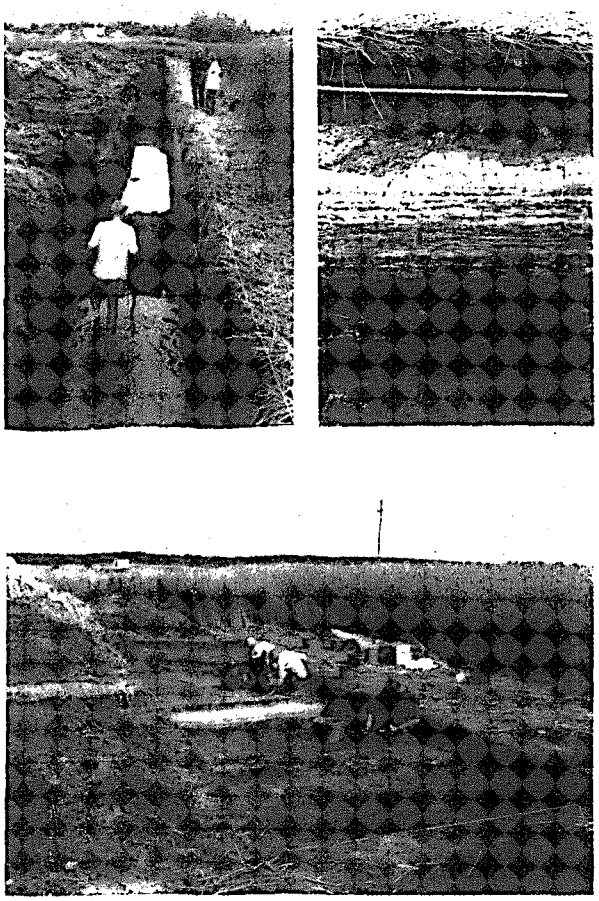

Fig. 4. Šventoji 6 during the 1997 excavation. 1) Main trench, 2) profile of the main trench at 118x102y, 3) main area of the excavation (photo of T.K. Lødøen, montage of V. Juodagalvis).

main context for pollen and diatom investigations aimed at reconstructing the local long term environmental development and the cultural impact on this caused by the settlement activity. On Šventoji 6 the aims of the paleobotanical investigation were to obtain diatom samples for an analysis, which will investigate changes in the salinity of the lagoon waters through time and provide detailed information about the environment. Samples were collected from the trench profile wall along 118x. Approximately 220 pollen/diatom samples were taken from Šventoji 6.

The 1997 excavation area was established southeast of the earlier excavated area, where an area of 3 by 7 m was opened (Fig. 3, 4:3). Vertical control on the site was maintained through a combination of mechanical and stratigraphic excavation. Five cm thick mechanical levels were excavated within the stratigraphically distinct layers. Excavated soil was water screened with 4 mm mesh and the horizontal provenience of all artifacts recovered was related to the coordinate system of the site. It must be mentioned that the water screening which was applied so successfully at the sites with sandy soil (Juodagalvis 1998), at Šventoji 6 did not obtain results that were expected.

Archaeological material was mainly recovered from a gytja layer beneath the topsoil and in the top of an immediately subsequent sand layer (layers 2 and 3 from surface respectively in fig. 5). The radiocarbon date which was obtained on palynologycal samples (presence of barley) from these layers 65 cm beneath the surface:

T-13525a 4530±75 bp/cal 3365-3380 BC

The excavation revealed a situation with a high proportion of pottery together with a few artifacts of flint and amber from area of 36 m^2 (Fig. 6). The collection of finds from Šventoji 6 consist of: 833 sherds of ceramics of Narva and Globular Amphora Cultures, 35 peaces of amber, 5 fire cracked stones, 3 stone net sinkers, 1 flake and 1 core of flint, 1 wooden stick with worked end. According to the archaeological material the site likely represents two phases of occupation, but it has not been possible to distinguish these stratigraphically. The radiocarbon date of wooden stick from excavated area follows:

Ta 2638 3780±100 bp/cal 2855-2460 BC

In addition, post-holes and well preserved wooden posts where identified penetrating the deeper strata of the subsoil. The distribution and location of the posts indicate that they were part of a construction, possibly one or more dwelling structures which were built above the surface. Our interpretation of these posts seems therefore to support preliminary results from the diatom analysis, which suggest that the sites where in fact situated on wet marsh land, as opposed to having been built on dry land and subsequently flooded by a transgression as has been previously interpreted. Hearths and big pits were typical for the Stone Age sites, which were situated on the dry land. However, none of these objects were found during the previous extensive excavations.

As noted earlier, Šventoji 6 was excavated using mechanical 5 cm mechanical levels. Systematic soil-samples for osteology analysis were collected from each level of each square meter that was excavated. The samples were taken from the southwest corner of the northeast quadrant of each 1 m square grid unit. Each sample consisted of an l4xl4 cm by 5 cm thick block (ca. 1000 cm^3). These were cut from the sediments as opposed to being scraped in order to avoid damaging the bones being recovered. All bones found in the course of excavation were also collected. In addition to 69 systematic samples (69 liters) 10 samples from a variety of other contexts were collected.

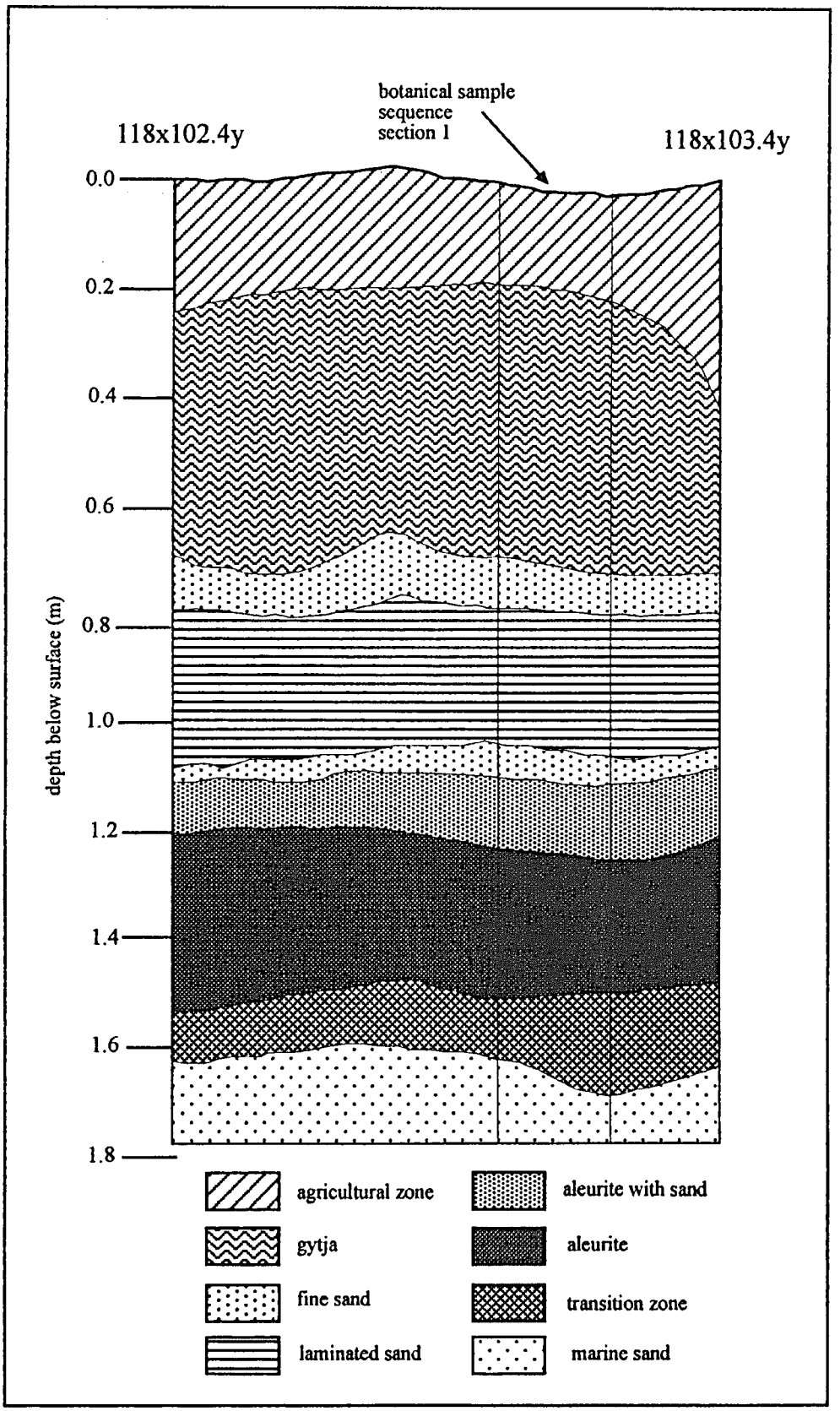

Fig. 5. The stratigrapfy of the main trench (drawing of V. Juodagalvis).

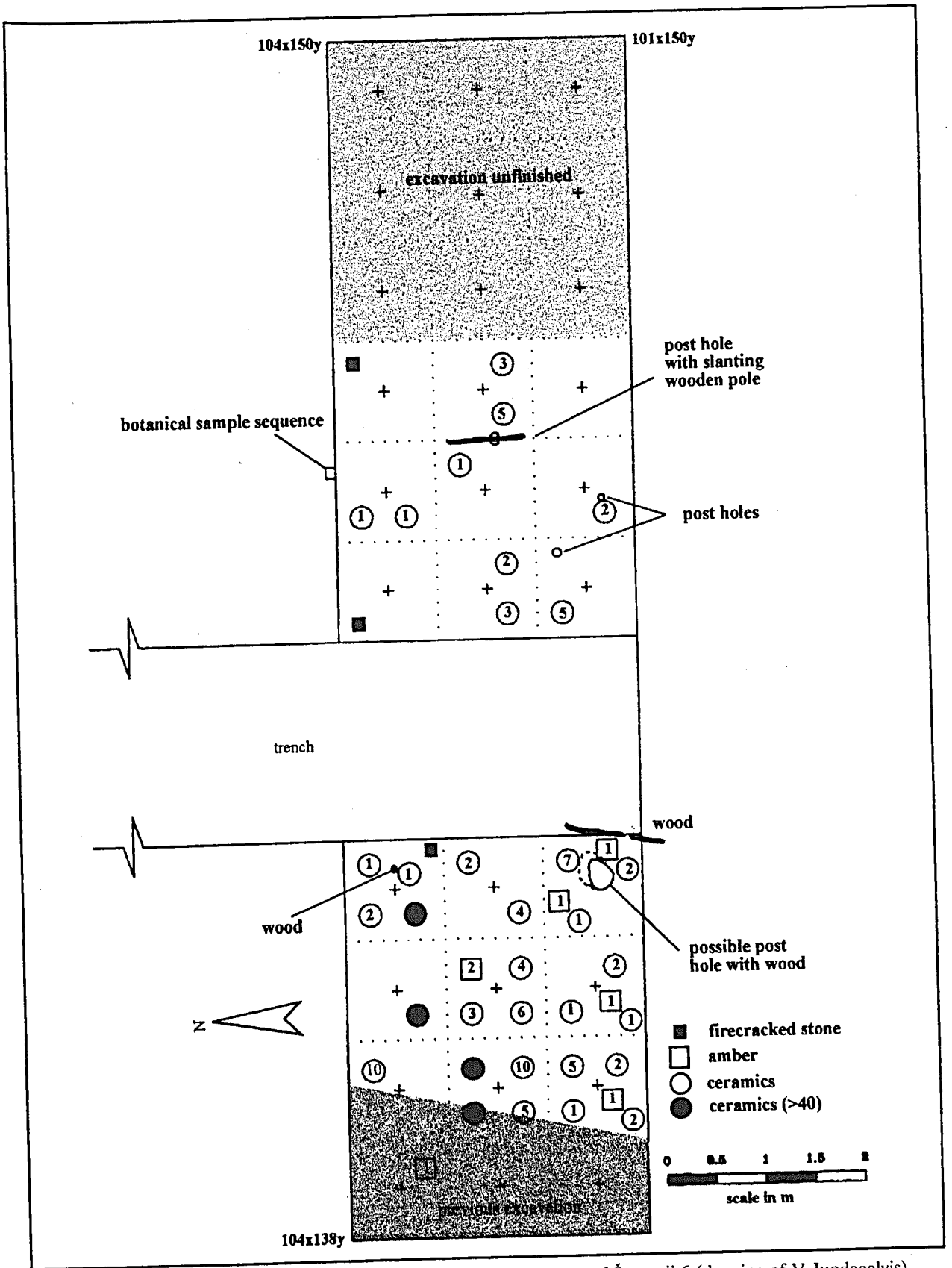

Fig. 6. Distribution of structures and artifacts in the 1997 excavated area of Šventoji 6 (drawing of V. Juodagalvis).

INVESTIGATIONS AT ŠVENTOJI 4

In 1997 at Šventoji 4 a co-ordinate system was established and an area of 2 by 8 m (Fig. 7: 10) adjacent to the earlier excavation's northeast limit was opened for excavation (Fig. 2). The goals of the excavation in 1998 were to 1) complete the excavation of a 2x2 m^2 area along the shore of the lagoon that remained unfinished at the end of the 1997 season, 2) to open and excavate to completion a new area along the lagoon's shoreline, as well as 3) to excavate a series of test units farther inland from the shoreline. These goals were achieved, resulting in a 4x8 m^2 area excavated to completion at the lagoon shoreline as well as a series of seven 1 m^2 test units 20 to 30 m north-west of the shoreline (Fig. 7: 2).

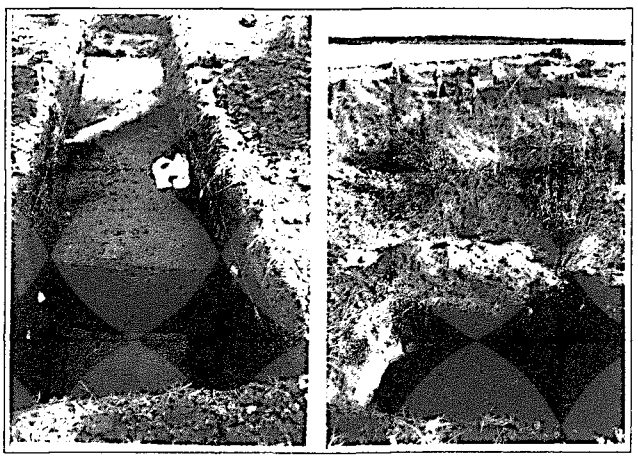

Fig. 8. Northwestern profile in the 1998 excavated area of Šventoji 4 (photo of D.N. Simpson).

Due to time restrictions and the thickness and nature of the culture bearing deposits a different excavation methodology than that applied at Šventoji 6 was used. Here the methods employed by the earlier Lithuanian investigations at Šventoji were used and were supplemented by systematic paleozoological and paleobotanical sampling. Horizontal provenience of the material recovered was documented in accordance with the co-ordinate system established in 1997, where the northernmost corner of R. Rimantiene's earlier excavations was defined as 100x50y with x increasing to the north-east along the axis used in the early excavations and y increasing to the southeast. Vertical control was maintained via a combination of stratigraphic excavation and three-dimensional piece plotting. All elevations were recorded in relation to the fix point employed during R. Rimantiene's previous excavations at Šventoji 4. The fix point was assumed to be 2 meters above sea level.

As with the 1997 excavations along the shore of the lagoon, the agricultural zone and underlying old turf were removed and the artifact bearing gytja was carefully shoveled out. The "inland" test units were excavated by trowel. All artifacts and samples that were recovered were assigned field identification numbers. As presented in the site plan (Fig. 9), the 1997 field identification numbers are preceded by "7." and the 1998 field identification numbers are preceded by "8."

On the basis of the 1997 and 1998 excavations at Šventoji 4 we interpret the material from excavation along the shoreline of the prehistoric lagoon to represent an offshore midden (Fig. 8). The 1998 excavations confirmed the previous seasons, as well as R. Rimanteine's, observations regarding the existence of two separate cultural horizons in the gytja sediment that fills the lagoon basin. The upper horizon relates to the succeeding Globular Amphora culture. The lower horizon represents the local hunter-gatherer Narva culture. The radiocarbon date which was obtained on palynologycal samples from this layer follows:

T-13524a 4930±55 bp/cal 3765-3665 BC

Above this layer there were found a few grains of barley (*hordium*) and wheat.

In as much as cataloguing/analysis of the material is on going it is premature to provide a fully developed discussion of the cultural historical implications of the locality's stratigraphy. However, on the basis of field observations it can be stated that the horizons can be clearly distinguished. In the east most 3 meters of the excavated area (that is to say, farthest from the shore into the lagoon sediment) ceramics of Globular Amphora culture were recovered from ca 1.25 meters below surface (at absolute depths of 25 to 30 cm below the current sea level) while Narva culture ceramics were recovered from ca 2 meters below surface (at absolute depths ranging from 97 to 125 cm below the current sea level. it is noted that due to the slope of the lagoon's bed closer to the shore, and consequently the slope of the two horizons, there is less separation between the horizons closer to the shoreline. It is also observed that some of the Narva ceramics were recovered from within the bone layer at the bottom of gytja (Fig. 8).

The 7 "inland" tests units were excavated in an attempt to localize a settlement area that could be related to the offshore midden deposits. Unfortunately, the results were not conclusive. While a charcoal rich horizon in the gytja was identified, and fragments of amber and flint were recovered, no clear artifacts or features were identified.

With regard to the artifacts recovered in 1998, in as much as work on the material is ongoing, it is not

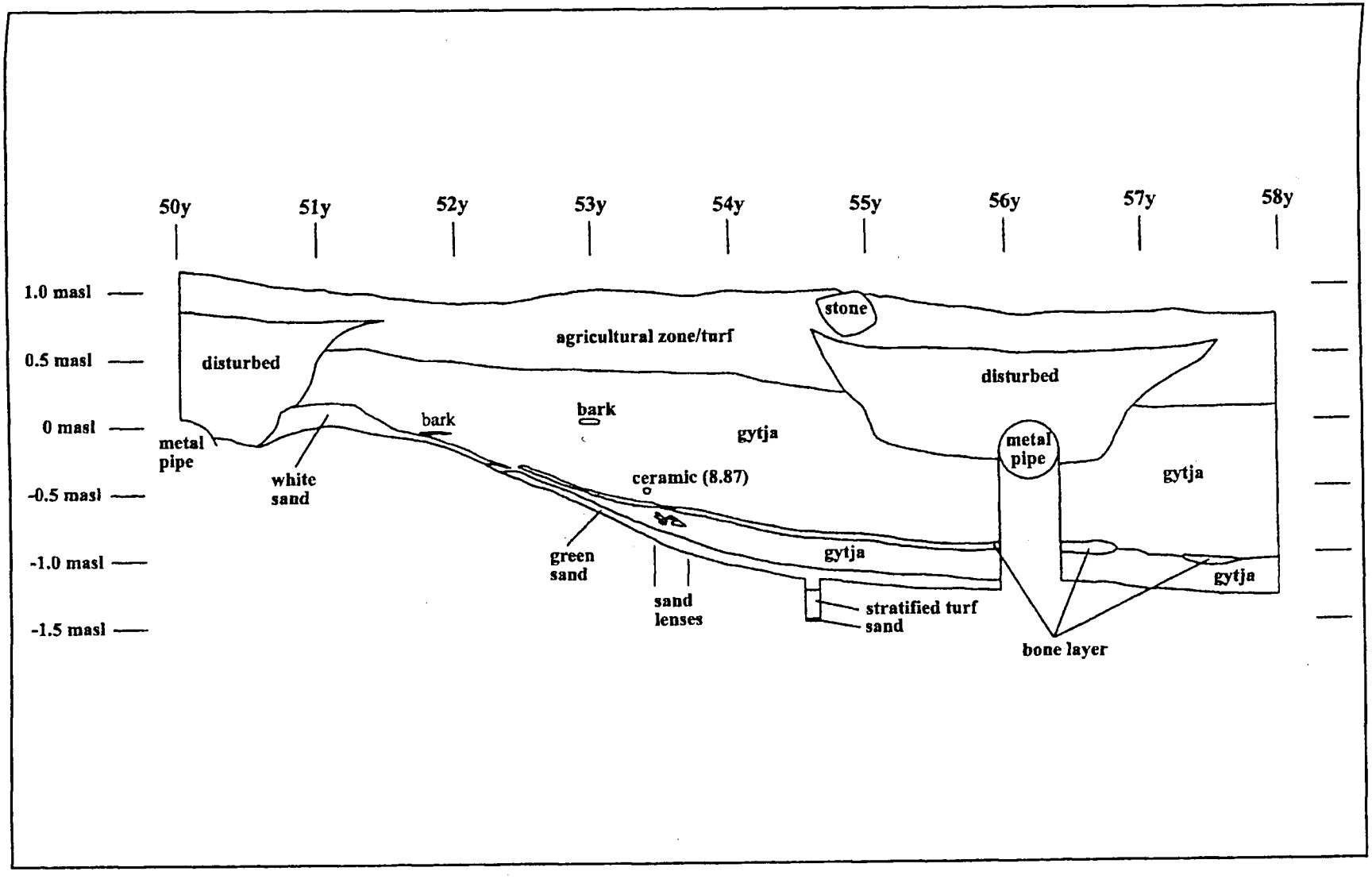

Fig. 8. Northwestern profile in the 1998 excavated area of Šventoji 4 (drawing of V. Juodagalvis and D.N. Simpson).

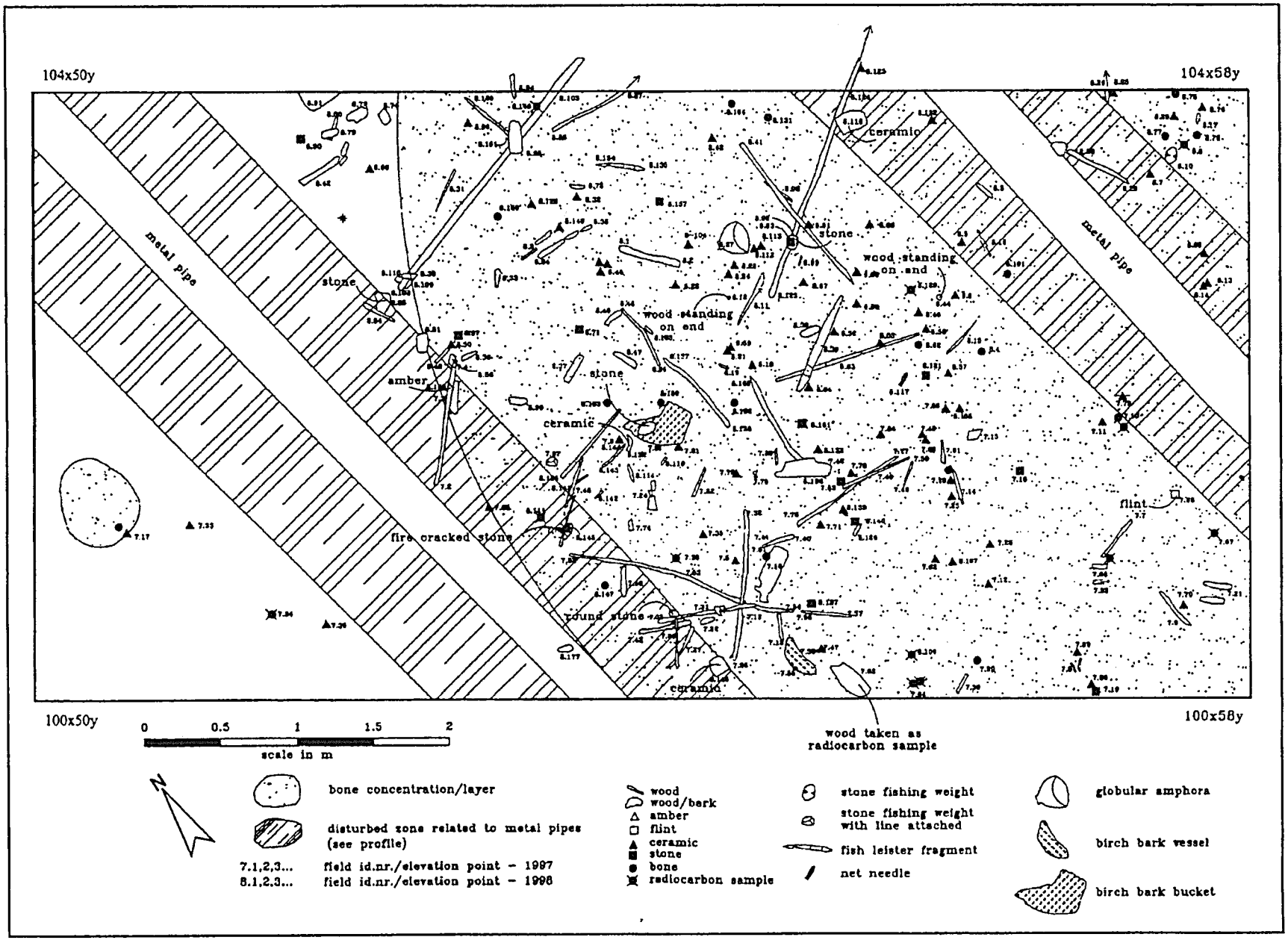

Fig. 9. Plan of the 1997–1998 excavated area of Šventoji 4 (drawing of V. Juodagalvis and D.N. Simpson).

yet possible to present a comprehensive catalogue. However, it can be stated that the range of spectacularly well-preserved artifacts recovered in 1997 was matched if not exceeded in 1998. The assemblage resulting from the 1997 excavations (including worked flint, ceramic sherds, fire cracked stones, bones, sharpened sticks, wooden fish trap fragments, a stone sinker with line attached and bark bucket (Fig. 10: 1) and birch bark vessel (Fig. 10: 5), has now been supplemented by the recovery of not only additional flint, ceramics (Fig. 10: 4), fire cracked stones, worked wood, stone sinkers and bone, but also by a bone fish leister fragment (Fig. 10: 3), a bone net needle (Fig. 10: 2) and a complete Globular amphora vessel (Fig. 11). The birch bark vessel (Fig.10:5) which was found in 1997 worthy of exhaustive comment. The artefact was taken out together with gytja inside. Before the conservation while cleaning it from gytja the fragments of dog's claw wrist were found inside. The date of which follows:

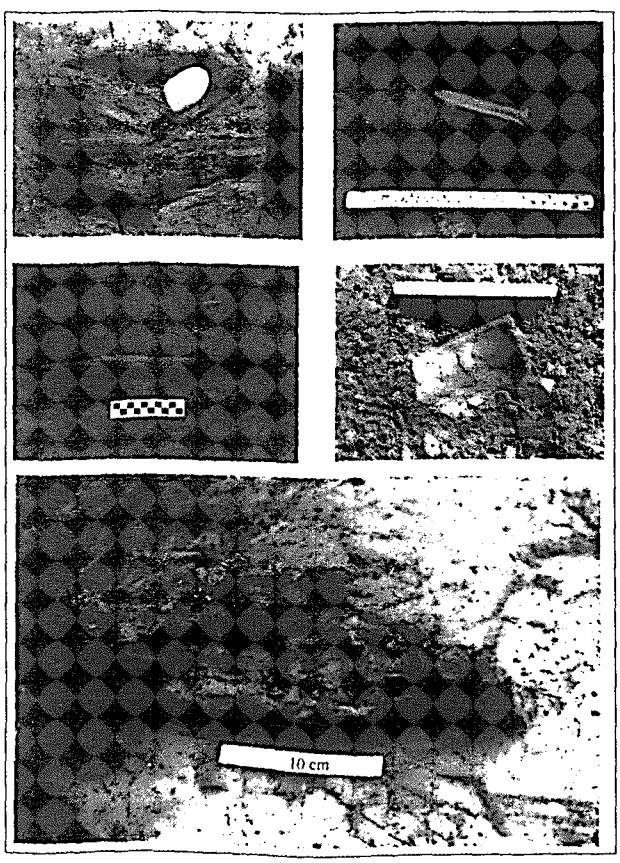

Fig. 10. Finds *in situ* in the 1997–1998 excavated area of Šventoji 4. 1) Bark bucket with stone, 2) net needle, 3) fish leister fragment, 4) rim sherd of Narva Culture vessel, 5) birch bark vessel with the dog bone inside (photo of G. Grižas (1), D.N. Simpson (2–5), montage of V. Juodagalvis).

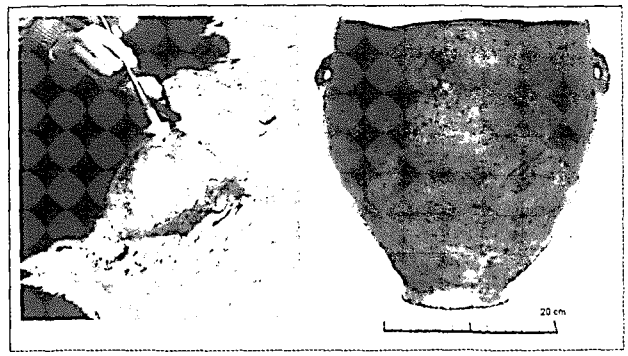

Fig. 11. Globular amphora *in situ* and after conservation (photo of D.N. Simpson, montage of V. Juodagalvis).

Tua-2075 4530±65 bp/cal 3355-3095 BC

Šventoji 4 also yielded large amounts of bone that provides valuable insights into the range of species, which were exploited. In addition to the recovery of isolated bone specimens throughout the gytja deposit, a concentration of bone was found on the upper slope of the lagoon edge, and a dense "bone bed" comprised predominantly of fish bone was identified farther into the lagoon basin at a depth of ca. 1.8 m below the present surface. The radiocarbon date of freshwater fishbone from this layer follows:

Tua-2076 4875±65 bp/cal 3705-3635 BC

At *Šventoji 4 soil samples* were collected where concentrations of bones were observed, and most of the osteological material found during the excavation was plotted on the site plan and the depth recorded. Systematic samples were collected from three columns at the deep end of the excavated area. Each soil sample was 4 cm thick, 25 cm wide and extended 10 cm into the profile (ca. 1000 cm^2). These were cut out of the deposits to prevent destroying the bones in the soil. The samples were collected at every 8th cm through most of the columns' extents. Where the layers had large amounts of osteological material, the samples were collected at every 4th cm. In areas where the amount of osteological material in the sediment was noted to be exceptionally high during excavation, whole quadrants comprising 10 liters of soil were collected in addition to the systematic profile samples. A total of 93 paleozoological samples were collected from Šventoji 4, of these, 62 were systematic samples (62 liters) and 31 were from other contexts, yielding a volume of 127.5 liters.

As a supplement to the zoological samples collected in 1997, a series of osteological samples were taken in 1998. These consisted of 14 systematic samples from the bone bed in the lower portion of the gytja, 2 larger, non-systematic, samples from the

bone bed, as well as a variety of bones from above, below and within the bone bed that were encountered during excavation.

At Šventoji 4 samples taken for both paleobotanical and paleozoological investigations provide an opportunity to investigate the economy of the prehistoric inhabitants of the site. The primary aim of the pollen investigation was to investigate any changes in the human impact (especially regarding agriculture) in the two different phases of settlement during the Neolithic. A continuous section of pollen samples (94 samples) were taken from the profile wall.

CONCLUSION

The excavation in 1997–1997 was concentrated on integrated archaeological, paleobotanical and paleozoological investigations in limited, undisturbed parts of the previously excavated sites of Šventoji 4 and 6. Although the analysis of the natural scientific samples is not yet complete and ready for presentation and evaluation at this stage, it can be stated that the sampling procedures were carried out as planned in undisturbed site contexts that appear to be optimal for interdisciplinary investigation.

The main scientific goal of the joint project in terms of generating new knowledge is to use interdisciplinary methods and strategies to create a new framework for the reconstruction of the environmental and culture-historical development in the Šventoji area in the Late Stone Age. Achievement of this goal will undoubtedly also have important implications for the study of the Late Stone Age development in the whole Baltic region. The 1997–1998 excavation has secured important data, particularly when compared to the short time invested in fieldwork. However, the Šventoji sites comprise a chronological, topographical and functional variety of contexts, and more of these contexts have to be investigated in order to provide sufficient background for the elaboration of a solid interdisciplinary data framework.

The co-operation was useful both for the students and for researchers as well. The qualities and the shortcomings of different archeological schools were exposed during the field works more then ever.

The investigations of Šventoji indicated non-excavated areas between and within sites, which must to be researched. Though Šventoji sites are inserted to Register of Heritage it, don't guarantee a real protection. The intensive agriculture at Šventoji 6 (Fig. 4:3) clear corroborates that.

It is considered that the archaeological data will provide a good basis on which to continue to characterize the culture history of the Šventoji region. Beyond this, setting the archaeological data into the context of the ongoing zoological and botanical studies being undertaken as part of the Joint Lithuanian-Norwegian Excavation Project in Šventoji it is expected that significant new insights will be revealed and that important contributions will be made not only to the developing understanding of the Late Stone Age of Šventoji specifically but also to that of Lithuania and the Baltic region generally.

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SUGRĮŽIMAS Į ŠVENTĄJĄ – BENDRAS LIETUVOS-NORVEGIJOS PROJEKTAS

Vygandas Juodagalvis, David Neil Simpson

Santrauka

Bendras Lietuvos-Bergeno (Vakarų Norvegija) projektas Šventojoje – viena iš tarptautinio bendradarbiavimo, užsimezgusio dar 1992 m., pakopų. Projektas apima archeologinius kasinėjimus bei sukauptos medžiagos studijavimą, glaudžiai bendradarbiaujant su gamtos mokslų specialistais.

Archeologiniai kasinėjimai vyko 1997 m. liepos ir 1998 m. rugpjūčio mėn. Šventosios 4 ir 6 akmens amžiaus gyvenvietėse. Ekspedicijoje dalyvavo archeologai, paleobotanikai bei paleozoologai, atstovaujantys Lietuvos ir Bergeno mokslinėms institucijoms.

Kasinėjimų metu sukaupta gausi paleobotaninė ir paleoosteologinė medžiaga, kurios dalis jau ištirta, dalis tiriama Lietuvos ir Norvegijos laboratorijose. Radiniai iš Šventosios gausiai papildė kaupiamą etaloninę paleoosteologinę kolekciją. Aptikta Narvos ir Rutulinių Amforų kultūrų keramikos, kaulinių, gintarinių, medinių, titnaginių dirbinių, iš kurių išsiskiria tošinis kibirėlis, beržo tošies indas su šuns letenos kaulais viduje bei visiškai sveikas Rutulinių Amforų kultūros puodas.

Bendradarbiavimas buvo naudingas abiejoms pusėms – išryškėjo skirtingų archeologinių mokyklų privalumai ir trūkumai, kurie labiausiai atsiskleidžia lauko darbų metu. Projekto metu atlikti archeologiniai kasinėjimai parodė, jog būtina toliau tęsti Šventosios tyrinėjimus, nes tarp ankstesniais metais tyrinėtų gyvenviečių ir radimviečių liko nemažai neištirtų plotų. Esantis Šventosios akmens amžiaus gyvenviečių apsaugos režimas yra nepakankamas.

Bendras Lietuvos-Bergeno projektas tęsiasi. Atlikus visus projekte numatytus darbus, bus parengta išsami tyrinėjimų duomenų publikacija.

ILIUSTRACIJŲ SĄRAŠAS

Pav. 1. Orientacinis Šventosios ir tyrinėtų senovės gyvenviečių planas (pagal M. Kabailienę ir R. Rimantienę).

Pav. 2. Šventosios 2, 4, 5 ir 6 gyvenviečių situacija su pažymėtais tirtais plotais.

Pav. 3. Kasinėjimų plotas Šventosios 6 gyvenvietėje.

Pav. 4. Šventosios 6 gyvenvietė 1997 m. tyrinėjimų metu. 1) pagrindinė tranšėja, 2) pagrindinės tranšėjos pjūvis, 3) pagrindinis kasinėjimų plotas.

Pav. 5. Pagrindinės tranšėjos stratigrafija.

Pav. 6. 1997 m. Šventosios 6 gyvenvietės tyrinėto ploto planas.

Pav. 7. Šventoji 4. 1)1997 m. tyrinėtas plotas, 2) vaizdas nuo bandomosios perkasos į pagrindinį tyrinėjimų plotą 1998 m.

Pav. 8. Šiaurės vakarinė 1998 m. tyrinėto ploto sienelė Šventosios 4 radimvietėje.

Pav. 9. 1997–1998 m. tyrinėto ploto planas Šventosios 4 radimvietėje.

Pav. 10. Radiniai *in situ* 1997–1998 m. tyrinėtame plote Šventosios 4 radimvietėje.

Pav. 11. Rutulinė amfora *in situ* ir po konservavimo.

ВНОВЬ В ШВЯНТОЙИ – СОВМЕСТНЫЙ ЛИТОВСКО-НОРВЕЖСКИЙ ПРОЕКТ

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Резюме

Совместный литовско-норвежский проект археологических исследований в Швянтойи является одной из ступеней международного сотрудничества между археологами Литвы и Бергена (Западная Норвегия). Проект включает в себя археологические расскопки и последующую работу над выявленными данными при непосредственном сотрудничестве с учеными естественных наук.

Археологические раскопки проводились в 1987 и 1988 гг. на поселениях каменного века в Швянтойи 4 и 6. В экспедиции принимали участие археологи, палеозоологи и палеоботаники из литовских и бергенских научных учреждении.

Во время археологических раскопок поступил обширный палеозоологичекий и палеоботанический материал, часть которого исследованна, а часть исследуется в лабораториях Литвы и Норвегии.

Комплекс археологических находок составляют фрагменты керамики Нарвской и культуры шаровидных амфор, костяные, деревянные и кремневые изделия, янтарь. Выделяется два сосуда, изготовленные из коры – в одном из них были обнаружены кости собачей лапы. Найден также горшок культуры шаровидных амфор, полностью сохранившийся.

Сотрудничество было взаимовыгодным – во время полевых работ особенно четко выявляются недостатки и приимущества различных археологических школ. Археологические раскопки показали, что дальнейшие исследования поселении Швянтойи обязательны, так как существующая охрана памятника его сохранности необеспечивает.

Работа по совместному проекту продолжается. После окончания работ намечается широкая публикация результатов исследований.

СПИСОК ИЛЛЮСТРАЦИЙ

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