

FRESHWATER ARCHAEOLOGY IN LITHUANIA: INVESTIGATIONS AND PROSPECTS

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Abstract

The survey and research of underwater archaeological objects in Lithuania is already in its third decade; therefore, it would be inaccurate to say that the field is new. This article discusses objects that have been found and investigated in inland waters in Lithuania. It is devoted to a discussion of the beginnings of this branch of science, and the stages in its development; and also to a presentation of the main tendencies in underwater research and the results of completed surveys.

Key words: underwater archaeology in Lithuania, inland waters, underwater objects, research, prospects.

Introduction

The term 'underwater archaeology' is usually associated with seas and oceans, and in particular with the mysterious remains of sunken ships and their cargoes. The archaeological heritage of inland waters (lakes and rivers) is not well known, although its contribution to the knowledge of history is no less significant. From the earliest times, the shores of lakes and the confluences of rivers were inhabited, because of the easy access they provided to water and food resources, safety, communication and trade routes. There are objects that lie at the bottoms of these lakes and rivers which, over time, either fell there or were lost by accident. Water was also a place where offerings were made and bodies were buried. As a result of the exceptional qualities of water and silt in conserving objects, they can survive up to the present day.

In Lithuania, the systematic survey and investigation of underwater archaeological objects is now in its third decade, so it can hardly be considered to be a new field of science. Although there are references made to and speculation concerning objects and finds lying in Lithuanian waters that can be traced to the 19th century, investigations were not carried out until the 1980s. The slow evolution (or beginning) of underwater archaeology in Lithuania was conditioned by various factors. First of all, by factors which may be related to the limitations of the technical possibilities that were available, and to a lack of knowledge. The wide-scale underwater archaeological investigations that have been conducted in Lithuania during the last few decades, and the discoveries of new underwater archaeological objects, however, have proven that the inland waters of Lithuania are rich in a heritage that has yet to be discovered.

This article deals with underwater archaeology, but will not cover marine archaeology. As a result, it is only

objects which at the moment are still under water, and which are to be surveyed or investigated by underwater archaeology methods, which will be mentioned. The article does not aspire to be an in-depth analysis of the underwater heritage of Lithuania. Its aim is to discuss the beginning of the field and the stages of its evolution, and to present the basic tendencies in underwater exploration, accompanied by the results and prospects gained from completed surveys of new objects.

The evolution of underwater archaeology in Lithuania

The history of underwater archaeological exploration is rather short, and since it is based on material which has been collected so far, the most appropriate approach would be to divide its evolution into two stages: from the first mention of the likelihood of the existence of underwater objects in writing until the beginning of underwater archaeological exploration, and from those first investigations up to the present day. The scattered information that was available in various literary and periodical sources was gathered together, with the aim of tracing the development of underwater archaeology and its beginnings. This information bears witness to the fact that the subject of underwater objects and finds is a great source of interest to both researchers and lovers of history.

Information about objects under water or stray finds can be traced back to the 19th century. For instance, in 1836, A. Jucevičius (Ludwik Adam Jucewicz 1813–1846) mentions stone deities that remained under water, while E. Tiškevičius (Eustachy Tyszkiewicz 1814–1873) proposed a riverbed search for stone pagan idols that were included in a list of archaeological objects (Tyszkiewicz 1850, pp.81-82). One exceptional example of information relating to the underwater

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archaeological heritage of Lithuania is provided in archaeological maps of the Vilnius, Hrodna and Kaunas provinces by F. Pokrovski (Pokrovski 1893; 1895; 1899). On these maps, the locations of underwater objects, or objects lying partially submerged, are clearly marked. These markings were probably based on locations where solitary finds had previously been discovered. As completed surveys or discovered objects do not exist from this period, we must unfortunately presume that the information provided in these maps was confined to speculation.

Interest in underwater archaeological objects began to develop from the beginning of the 20th century. This was related to the investigations of the remains of lake dwellings discovered by F. Keller in Switzerland in 1854, and to 'the fever of lake settlements' which spread throughout Europe at that time (Ruoff 2004, pp.9-10). Information on the unique objects found in Lake Zurich and the Alps region reached Lithuania after more than 40 years had passed since their discovery. In an article published in a periodical in 1891, the finds from Lake Zurich were described in detail as evidence of an unheard-of and slightly 'strange' way of living over water (Andriulaitis 1891, p.93ff). In this way, a few lake dwellings were marked on the archaeological maps compiled by F. Pokrovski, and the remains of a settlement discovered in Lake Rybnica (now in Belarus) were distinguished by a most impressive description (Pokrovski 1893, pp.47-48).

The earliest reference to the search for lake settlements in Lithuania is to be found at the beginning of the 20th century. The literature from this period calls them *trobos ant svajų* (houses on piles) or 'houses of beam construction'. In an article in the daily *Lietuvos žinios* (Lithuanian News) in 1914, it was written that no lake dwellings had been discovered yet in Lithuania, although it speculated that people had lived in such dwellings in the Stone Age, and, on the grounds of the investigations conducted by F. Keller, that they could also have existed in Lithuania (Jurkūnas 1914, p.2). With the aim of discovering underwater objects of this type in Lithuania, scientific discussions concerning the peculiarities of lake dwellings developed in the 1920s (Paunksnis 1931, p.503). Although by the mid-20th century, investigations had yet to take place, archaeologists and interested parties had no doubt that such a peculiar mode of construction over water had existed in Lithuania, and made efforts to pinpoint places, by referring to ethnographic sources and archaeological finds discovered near water.

The largest amount of information available relating to separate underwater objects that were mentioned before the Second World War in Lithuania can be found

in the files of the State Archaeological Commission. In those files, references to bridges, scattered solitary finds, settlements and logboats can be found. The files are also evidence of the first attempt made to conduct an investigation into underwater archaeological objects. Professor E. Volteris, writing to the minister of education, appealed for funds so that he might mount an investigation of the settlement on Lake Dobilė (KPCA, F.1, Ap.I, b.84, p.75). Unfortunately, information on whether the investigation was carried out has not been found. Work discussing separate types of objects appeared in the 1920s. In L. Kšivickis' *Žemaičių senovėje* (In the Old Age of the Samogitians), information was presented concerning *kūlgrindas* (secret underwater stone roads across swamps and swampy areas) and bridges (Kšivickis 1928). J. Basanavičius, referring to historical sources and scattered solitary archaeological finds, described the bridges and means of water transport used by the Balts (Basanavičius 1970, p.109ff). P. Tarasenko, in his 'Lithuanian Archaeological Material', identified a separate group of objects, fords and ancient roads, and categorised them as yet undiscovered, and thus at that time hypothetical underwater objects and solitary finds according to the knowledge of the day (Tarasenko 1928).

Until the mid-20th century, the process of underwater archaeology consisted simply of the recovery and collection of objects from lakes, without any supplementary registration, due to the inability to breathe and thus move freely under water. Various methods were created for the extraction of finds: a member of the party, connected to a boat by a hose which provided air, would, by using an iron hoe with a long handle, collect finds into a basket (Hafner 2004, p.178). Tongs or a small rake with a long handle would also be used. With the aid of these instruments, the sediment of the lake would be raked into a pile, which was then sifted through in the search for ceramic and metal finds (Kola, Wilke 1985, p.26). Under the auspices of the German archaeologist J. Heydeck, investigations of pile-settlements had already been carried out in the 19th century (1895) in the Masurian Lake District in the former territory of East Prussia (Gackowski, 2000, p.10ff). The methods of investigation were similar to those mentioned above: a cultural layer was dragged out on to the surface, and then investigated. The usage of caissons can be considered as the first attempts to conduct a scientific investigation, i.e. by sucking the water from the area under investigation, and then performing a typical archaeological investigation afterwards. Such experiments were also conducted in Lake Zurich under the guidance of Schwab in the late 19th century, and by Vougo in the 1910s and 1920s (Kola, Wilke 1985, p.27).



Fig. 1. The Lake Plateliai underwater survey (1986–1987) (photograph by expedition members).

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We can only speculate as to why such inventive underwater archaeological methods of investigation were not adopted in Lithuania, and why objects were not investigated, even though their existence was beyond question. However, we may rejoice at the fact that, in the case of Lithuania, the immense desire for knowledge, and the curiosity of the investigators of the past, did not destroy the heritage through non-methodical (according to the present-day understanding) investigations.

A completely new stage in the field of underwater archaeology started in 1943, when the oceanologist J. Cousteau and engineer E. Gagnan invented an autonomous apparatus that enabled underwater breathing by way of the adjustment of a pressure regulator attached to a cylinder of compressed air. This apparatus allowed a person to move with relative ease under water, and made archaeological investigations much less difficult. It also meant that methods of underwater archaeological investigation could be more closely aligned with the more common methods of archaeological investigation on dry land.

In Lithuania, the first underwater exploration to be aided by aqualung was attempted only in 1959. Under the initiative of Trakai Museum, hired professional divers surveyed the shores of Lake Galvė. The explorations

were unsuccessful, and this is why they were discontinued for a time (Ušinskas 1981, p.4).

Underwater investigation was then taken up some time later by the archaeologist V. Ušinskas, who also initiated the founding of *Agaras*, an underwater archaeologists' club (Valatka 1984, p.6). Under the guidance of Ušinskas, diving was carried out in various east Lithuanian lakes from 1978. An archaeological survey expedition was organised in the Telšiai, Alytus and Lazdijai districts in 1980, in order to find new underwater archaeological sites. During this expedition, special attention was paid to the search for lake settlements. Unfortunately, due to both a lack of knowledge and a lack of a sufficient technical basis, the survey did not yield any results (Ušinskas 1981, p.4).

The investigation of the water burial site that was discovered at a depth of one metre in Lake Obeliai (in the Ukmergė district) can be considered as one more attempt to conduct underwater exploration (Urbanavičius, Urbanavičienė 1988). Although this was a unique attempt in terms of its intention to be both a methodical and a systematic underwater investigation, because of the small depth and the rather limited visibility of the lake, and for a variety of other reasons, the underwater investigation did not take place.



Fig. 2. The Lake Plateliai underwater survey (1986–1987) (photograph by expedition members).

The first successful underwater investigation was undertaken by a group led by the archaeologist V. Žulkus in Lake Plateliai (in the Plungė district) in 1987. In this lake, the remains of a bridge and a logboat were discovered (Žulkus 1988, pp.187-189). From 1995, a systematic investigation of the Lake Plateliai bridge was carried out (Žulkus 1996, p.296; 2003). V. Žulkus, the archaeologist in charge of these expeditions, can, without any doubt, be called the father of underwater archaeology in Lithuania (Figs. 1, 2).

In 1997, an investigation of the eastern lakes of Lithuania and accompanying underwater surveys was begun. The ruins of the Lake Galvė bridges were explored in collaboration with Toruń University (Baubonis 1997, p.256ff). Together with his team, Z. Baubonis, the initiator of these explorations, began a new stage in underwater archaeology in inland waters of east Lithuania.

The first underwater objects were discovered in the 1980s. The improvement of technical means and the personal initiatives of those involved determined the beginning of underwater archaeology in Lithuania.

Underwater research in Lithuania

Underwater research using not only methods for inventoring objects but also methods of excavation with the use of an ejector has been completed in four sites in

Lithuania: in lakes Plateliai and Galvė, where bridges were found, and the site of the Merkinė boat and in the settlements of Lake Luokesai.

The first underwater archaeological explorations were begun in Lake Plateliai under the guidance of V. Žulkus. Between 1986 and 1988, the remains of a bridge dating back to the 16th or 17th centuries were discovered in the lake, and subsequently inventorised (Žulkus 1988, p.188). This almost 300-metre-long bridge is thought to have been located between the Šventorkalnis peninsula and Castle Island. In 1995, a systematic investigation of the bridge and its environs was begun in collaboration with Toruń University. This investigation continued until 2003, while the survey of the lake has continued until now, with more and more underwater objects being discovered (Žulkus, 2007, p.503). By adapting exploratory methods from neighbouring countries and employing the latest sonar equipment, a methodology for underwater archaeological research was developed during the investigation of the Plateliai bridge (Žulkus 2005, pp.319-230). These explorations not only laid the foundations for the methodology of underwater archaeology in Lithuania; they were also of great importance in terms of training: students and young specialists received their first basic instruction there on how to carry out underwater research. Almost all underwater archaeologists working today in Lithuania trained at the 'Lake Plateliai school'.



Fig. 3. The process of removing the Merkinė boat (photograph by W. Szulta).

A further investigation of bridges inspired by the results of the research in Plateliai was conducted in Lake Galvė, which surrounds the castle at Trakai. For a long time, what we knew about the bridges of Trakai Castle had been based on iconographical evidence (an engraving by T. Makowski). However, an underwater survey led by Z. Baubonis alongside the same Toruń University team which had previously worked at Plateliai found different evidence. During research conducted between 1997 and 1999, the remains of three bridges which used to connect the castle and Karaite Island, Karaite and Little Church islands, and Karaite Island with the shore, were discovered. A preliminary dating of the bridges dates them to the 16th century (Baubonis *et al.* 1999, pp.553-554). In the environment of the bridges, a more thorough study was conducted using a water pump. The finds discovered during this study confirmed that there had been extensive human activity in and around the castle. This archaeological material was also complemented by solitary finds that were also discovered, which appeared to have fallen into the water accidentally.

Underwater research in the River Nemunas was undertaken between 2000 and 2001, after the discovery of the wreck of a wooden boat. The boat was called the Merkinė boat (WM-1) (Baubonis 2001, pp.231-232). The remains of the boat were first excavated, and then inventoried. This work was again carried out with the assistance of Toruń University. With the aim of protecting the find from decaying, the boat was taken out of the river and preserved (Fig. 3). At present, its remains

can be viewed in Panemuniai Regional Park. According to the most recent data, the boat can be dated to the 18th century.

One further exploration, of Lake Luokesai, which began in 2000 and is still continuing today, has so far uncovered two lake dwellings which have been dated to the Late Bronze Age or Early Iron Age. Since 2004, research has been conducted in association with foreign scientists (from Switzerland and the United Kingdom). The remains of the settlements in Lake Luokesai were found in the shoals of the lake at a depth of 1.5 to two metres, and were located on opposite shores of the lake (Baubonis *et al.* 2001, pp.228-231) (Fig. 4). The first settlement in the northern part of the lake was composed of a quadrangular complex of dwellings, covering an almost 900-square-metre area, and was surrounded by two defensive bowed fences. The second settlement differed significantly in its structure from the first settlement: it was formed from a solid platform of about 190 square metres in area, and is presumed to have been connected to the shore by a bridge. During the underwater investigation of the first settlement, a 40 to 95-centimetre-thick cultural layer was discovered. This settlement was formed of a horizontal wooden construction, arranged in seven to eight layers, and by approximately 350 vertical piles, and the various archaeological finds discovered at the site suggest that the area was densely inhabited (Baubonis *et al.* 2002, pp.268-270; Baubonis *et al.* 2009, pp.519-521). The remains of the second settlement consist of the remains of a horizontal wooden platform arranged

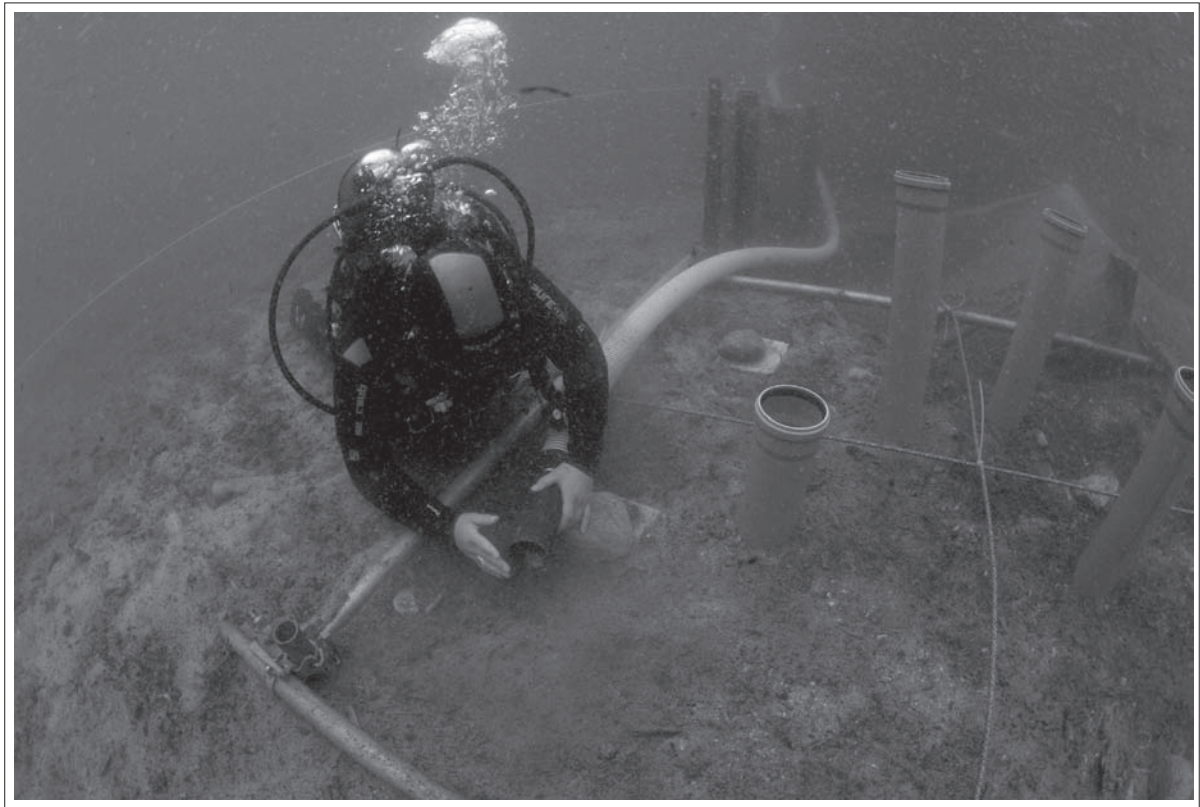


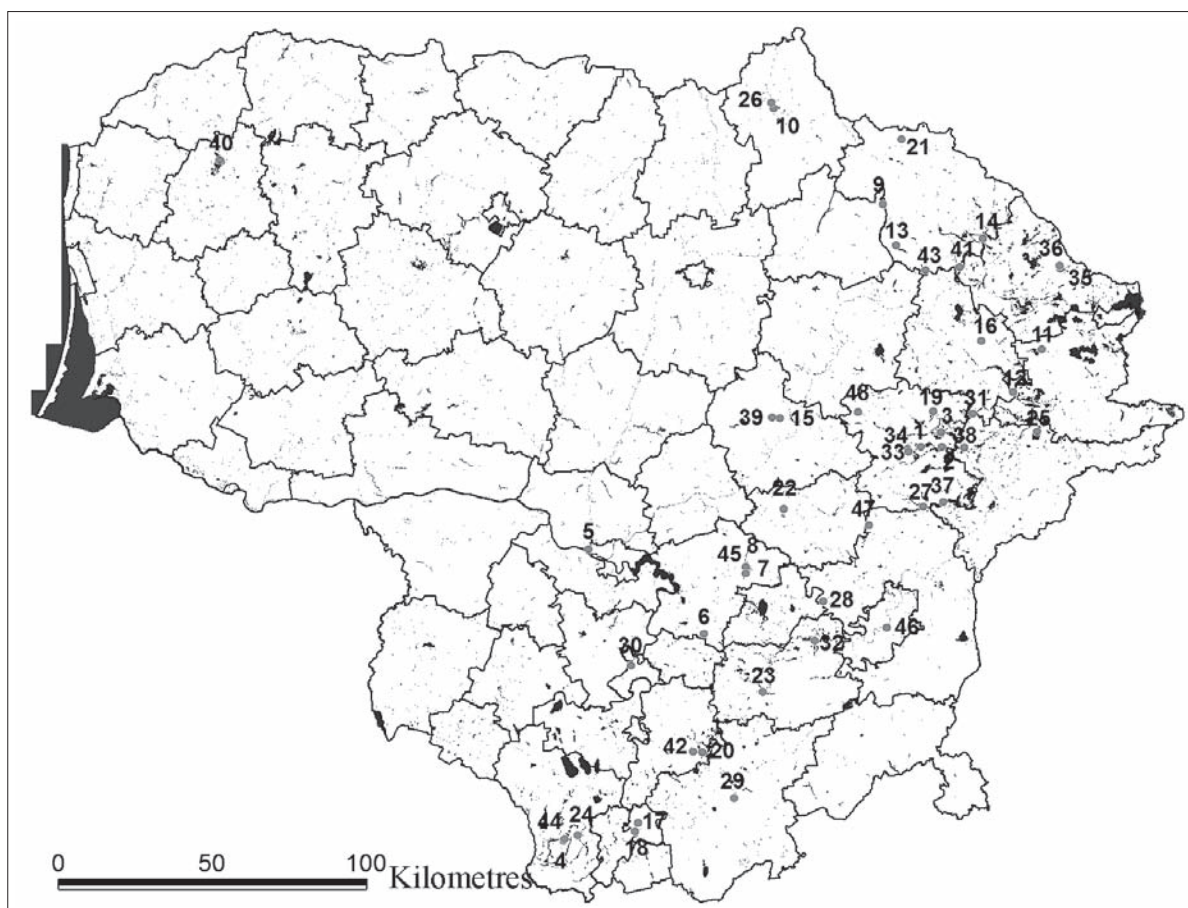
Fig. 4. The excavation of the Lake Luokesai dwelling (photograph by G. Krakauskas).

in one layer, and about 300 vertical piles (Menotti *et al.* 2005). During these ten years of investigations, a particular methodology has been used and perfected based on the experience of other countries. The study of the dwellings of Lake Luokesai has required a complex inter-disciplinary approach, as thorough research of the lake dwellings would be unimaginable without dendrochronology, sedimentology, archaeobotany, micromorphology, palynology, and other branches of science.

All of the objects under investigation are of different types (bridges, boats, settlements); and the sites (river, lake) and the depth of their discovery (from 2m to 13m) are also different. To investigate them, different methods were developed and adapted. Aside from the settlements at Luokesai, which date from prehistoric times, the majority of the objects date from the Middle Ages or the modern era. It is worth emphasising once more the importance of experience and influence, and also the help provided by researchers from foreign countries, during these underwater archaeological investigations. As has already been mentioned, none of the investigations were conducted without the contribution of scientists from other countries.

The search for new underwater objects and the results

One of the main aims of Lithuanian underwater archaeology is to locate and inventorise new finds. Such lake-bound surveys have been under way since 1998. The locations for these surveys were chosen on the basis of various sources, such as folklore, ethnographic and mythological material, and knowledge gained from studies of local lore or encyclopedias. Since 2001, these surveys have also been made by referring to orthophotography (using, as an example, the lake settlements discovered in Lake Luokesai). A large amount of information was gained from the files of the State Archaeological Commission and the Index of Lithuanian Land. Water reservoirs, next to which may have existed archaeological objects (hill-forts, ancient settlements, estates and other objects), were also surveyed. Information concerning the existence of underwater objects has also been provided by private persons and members of diving clubs. These surveys were initially conducted at the request of state institutions (the Centre for the Lithuanian Cultural Heritage), and also at the initiative of museums (Kaišiadorys Museum), although many of the surveys were accomplished thanks to personal initiatives. So far, one particular method has prevailed: most of the investigations have been



Map 1. Lakes where underwater archaeological surveys have been conducted:

1 Lake Siesartis (Molėtai district); 2 Lake Baltieji Lakajai (Molėtai district); 3 Lake Stirniai (Molėtai district); 4 Lake Ančia (Lazdijai district); 5 the River Nevėžis (Kaunas district); 6 Lake Gabys (Kaišiadorys district); 7 Lake Liminas (Kaišiadorys district); 8 Lake Statkūniškės (Kaišiadorys district); 9 Lake Daugiškiai (Kupiškis district); 10 Lake Širvėna (Biržai district); 11 Lake Sagardas (Ignalina district); 12 Lake Ūkojas (Ignalina district); 13 Lake Dviragis (Rokiškis district); 14. Lake Sartai (Rokiškis district); 15 Lake Kurėnų (Ukmergė district); 16 Lake Vaikesas (Utena district); 17 Lake Bedugnis (Varėna district); 18 Lake Liškiavos (Varėna district); 19 Lake Želva (Molėtai district); 20 Lake Daugai (Alytus district); 21 Lake Čedasai (Rokiškis district); 22 Lake Gelvanė (Širvintos district); 23 Lake Vilkokšnis (Trakai district); 24 Lake Snaigynas (Lazdijai district); 25 Lake Kretuonas (Švenčionys district); 26 Lake Janava (Biržai district); 27 Lake Asveja (Molėtai district); 28 Lake Dumblukas (Vilnius district); 29 Lake Mergežeris (Varėna district); 30 the River Nemunas (Varėna district); 31 Lake Aisetas (Švenčionys district); 32 Lake Galvė (Trakai district); 33 Lake Luokesai (Molėtai district); 34 Lake Luokesaitis (Molėtai district); 35 Lake Zarasas (Zarasai district); 36 Lake Baltas (Zarasai district); 37 Lake Jagomantas (Švenčionys district); 38 Lake Rašia (Švenčionys district); 39 Lake Obeliai (Ukmergė district); 40 Lake Plateliai (Plungė district); 41 Lake Liminas, the River Šventoji (Rokiškis district); 42 Lake Suvingis (Alytus district); 43 Lake Uosintas (Rokiškis district); 44 Lake Vainežeris (Lazdijai district); 45 Lake Žašliai (Kaišiadorys district); 46 the River Neris (Vilnius district); 47 Lake Širvis (Vilnius district); 48 Lake Perkaliai (Molėtai district).

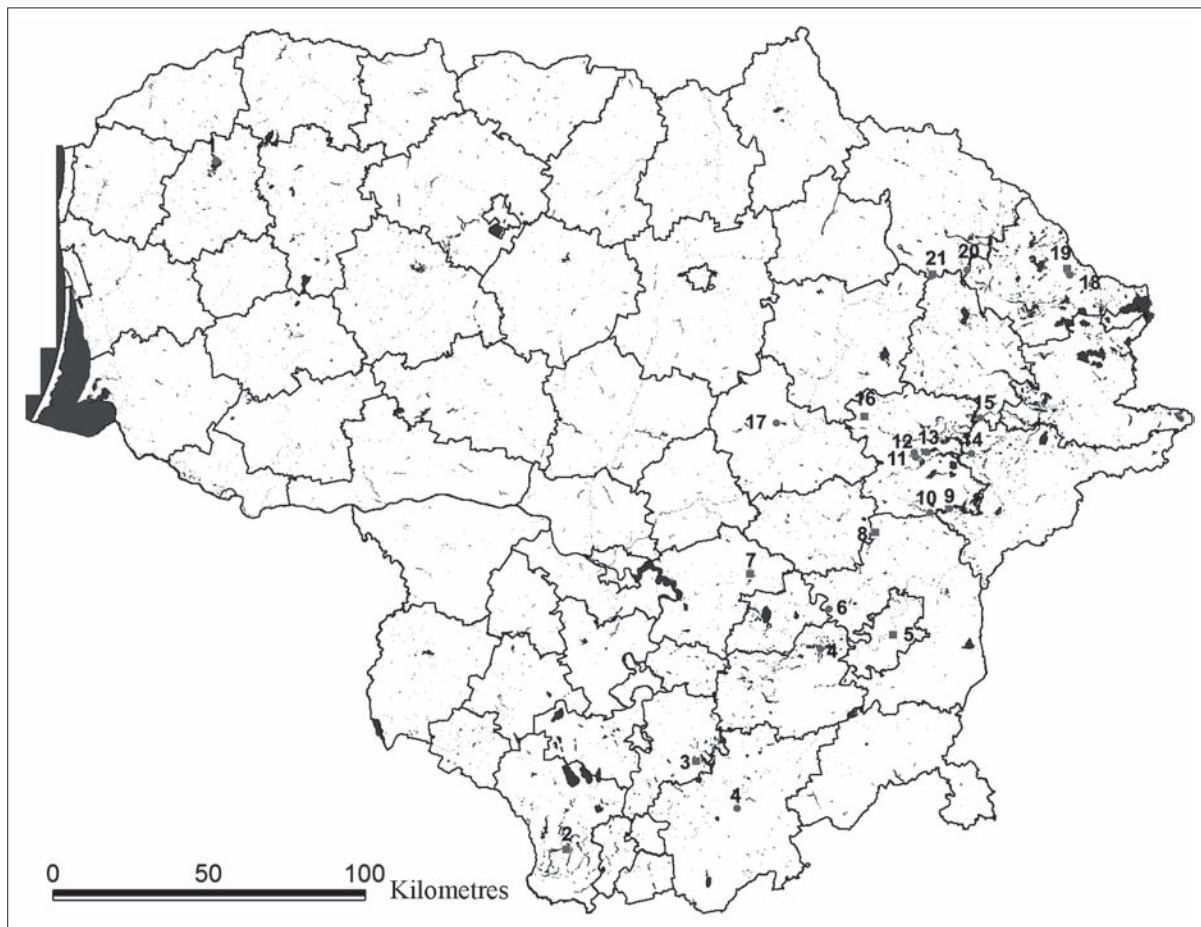
carried out by diving and visually surveying the bottom of a lake.

From 1998 until 2010 (with short breaks), 44 lakes and sections of four rivers were surveyed (Map 1). In 13 of the locations, new archaeological objects were discovered, while in eight of the sites, single archaeological finds were discovered (Map 2).

By examining the results of the completed underwater investigations, we can affirm that the most reliable information has been provided by private divers. In all inland waters in which the existence of unknown objects was indicated by divers, archaeological artefacts have been discovered. Through the search for

new archaeological objects, and with reference to the ethnographic material collected by the State Archaeological Commission, a few problems arose. First of all, it became obvious that it is quite difficult to establish the exact location of a previously inventorised object, due to the frequency of name changes in the areas studied. Secondly, land reclamation work that took place during the Soviet period changed the landscape: many lakes became boggy, with the result that there was zero visibility in them.

At present, we can distinguish a few groups of underwater archaeological material which need to be studied:



Map 2. Lakes where underwater archaeological objects or archaeological artefacts have been found.

□ - rare archaeological artefacts

○ - archaeological objects (including logboats)

1 Lake Plateliai (Plungė district); 2 Lake Vainežeris (Lazdijai district); 3 Lake Sovingis (Alytus district); 4 Lake Mergežeris (Varėna district); 5 the River Neris (Vilnius district); 6 Lake Dumblukas (Vilnius district); 7 Lake Žašliai (Kaišiadorys district); 8 Lake Širvis (Vilnius district); 9 Lake Jagomantas (Švenčionys district); 10 Lake Asveja (Molėtai district); 11 Lake Luokesai (Molėtai district); 12 Lake Luokesaitis (Molėtai district); 13 Lake Siesartis (Molėtai district); 14 Lake Rašia (Švenčionys district); 15 Lake Aisetas (Švenčionys district); 16 Lake Perkaliai (Molėtai district); 17 Lake Obeliai (Ukmergė district); 18 Lake Zarasas (Zarasai district); 19 Lake Baltas (Zarasai district); 20 Lake Liminas, the River Šventoji (Rokiškis district); 21 Lake Uosintas (Rokiškis district).

1. bridges
2. dwelling places
3. burial places, offerings, treasures
4. vessels
5. harbours, jetties
6. fishing equipment

Bridges make up one of the most abundant groups (Szulta 2007, p.115ff). The remains of bridges have been located in lakes Aisetas (Baubonis *et al.* 2009, p.522ff), Asveja (Fig. 7, see Plate II), Zarasas (Baubonis, Kraniauskas, 1999, pp.555-560), and Plateliai (Žulkus 1988, p.187ff); while the remains of three bridges have been discovered in Lake Galvė (Baubonis 1997; 1999).

The dwelling places group consists of the two lake dwellings discovered in Lake Luokesai, and a dwelling

place discovered in the River Šventoji (Baubonis *et al.* 2009, p.522ff).

Vessels, which consist of logboats and boats, are the most numerous group, in relation to the number of finds. Until now, there have been the following discoveries: two boats in Lake Asveja, one boat in Lake Rašia (Fig. 5), and the already mentioned Merkinė boat, which was found in the River Nemunas and removed and conserved (Baubonis *et al.* 2002, pp.270-271). Logboats constitute the largest group of water vessels found in Lithuania, and date from a range of historical periods. Overall, more than 20 logboats have been found. The majority of them are kept in museums, while others decorate farmsteads or still remain underwater. More than ten logboats were found during underwater surveys (Fig. 6, see Plate II).



Fig. 5. The Rašia boat (photograph by G. Krakauskas).

The burial ground at Lake Obeliai is the only object which has been attributed to the burial places group, while the area of Merkinė harbour and the four jetties discovered in the River Merkys (Baubonis *et al.* 2001, pp.231-232) have been attributed to the harbours and jetties group. A find relating to fishing which was attached to a sunken island in Lake Luokesai has been attributed to the fishing equipment group (Baubonis *et al.* 2006, p.416-419).

One more object, of which there are two types, should be mentioned: a *kūlgrindas* is a secret stone road across a swamp or a swampy area; and a *medgrindas* is a similar secret road made primarily of wood and earth. As the most frequently mentioned locations of these objects are swamps and damp places (in rare cases lakes), they can be ascribed to wetland archaeology, but investigated by applying methods of land-based archaeology.

The majority of underwater archaeological objects discovered date from the medieval and modern eras. The number of objects ascribed to other periods is, unfortunately, fairly insubstantial. The lake district of eastern Lithuania, which constitutes the largest concentration of lakes in the country, is, unsurprisingly, the area most abundant in finds. As the amount of information concerning the lakes of western Lithuania is still small,

the surveys that have been conducted in that area are rather limited.

This extensive palette of object types shows once more the abundance and variety of underwater archaeological finds in the inland waters of Lithuania. The majority of the objects have not yet been thoroughly investigated, and not all the information on them has so far been gathered.

During these surveys, not only underwater archaeological objects but also solitary archaeological finds were discovered, and these finds confirm that certain water-related activities took place during the prehistoric period.

Problems and prospects of underwater archaeology

The finds gathered from the underwater work that began in the 1980s have enriched the country's archaeological material. Although underwater archaeological exploration came late to Lithuania, it has accelerated rapidly in recent years. Projects that have been conducted together with foreign researchers from institutions that have a large body of knowledge have contributed significantly to the development of methods for underwater exploration, and the technical basis of these methods is of sufficiently high quality to allow methodical research to be conducted here.

One of the most important factors that has benefitted the development and successful completion of archaeological surveys is the level of water visibility, which distinguishes Lithuania from its Baltic neighbours (Ilves 2010).

Not enough information has been gathered yet to justify the search for objects that we may reasonably assume to exist but, as yet, lie undiscovered. For this reason, special attention has to be given to the files of the State Archaeological Commission, material collected by local lore societies, finds housed in the collections of museums, and previously conducted investigations of ethnographic and mythological material.

A thorough analysis of sources and a reconstruction of the palaeogeographical situation, in addition to an investigation into changes in water levels, are extremely important when conducting surveys.

Regarding the present tendencies of non-destructive methods, and having analysed earlier underwater surveys, methodological improvements are of crucial importance in the continuation of underwater research.

Sonar surveys are especially important when aiming to pursue a more effective search: they allow for the

prospecting of large areas of water during a shorter period, and make it possible to conduct searches in conditions of poor visibility. A survey using an echo sounder during the summer season of 2009 was successfully tested. In both Western Europe and the Baltic States, this method has already been used for a couple of decades (Koponen, Grönhagen 1994, p.103; Ilves 2010).

With reference to the experience of foreign countries, in conditions of zero visibility, information can be gathered through the lifting of silt bores, which allows researchers to ascertain the traces of a cultural layer or human activity. The taking of samples allows for the establishment of preliminary or potential places for investigation, especially in locations where lake water levels and their environment have been altered by land reclamation.

Archaeological objects that have been discovered close to water require complex investigation (whether they are water or dry land finds). Archaeological objects of a similar nature are often investigated separately, because of the application of different methods; or they are analysed using specific criteria which artificially categorise the objects. Thanks to underwater investigations, information can be obtained about activities related to lakeside dwellings, such as fishing, hygiene and transport. As a result, complex investigations are more beneficial, as they provide more universal information about the lifestyle of communities of the past.

Underwater entertainment pursuits, such as fishing, as well as the growing number of divers, threaten underwater objects. Nonetheless, these pursuits also create an opportunity for the discovery and open sharing of information concerning objects that lie under water. Collaboration and constant contact with members of private diving clubs provides invaluable information, and at the same time assistance in regulating the divers diving near the locations of underwater objects.

One of the main factors preventing the development of underwater archaeology in Lithuania is the preparation of new specialists. At present, the only course devoted to this branch of science is taught at Klaipėda University. However, if we wish to aim for more active student interest in our underwater heritage, the systematic teaching, i.e. the establishment of a specialisation in the field, is necessary. The preparation of students at university level has been emphasised as an important necessary contribution to the development of underwater archaeology (Kola 1983, p.41; Urtans, Rains 2003, p.111).

Concluding remarks

The inland waters of Lithuania undoubtedly contain a large amount of undiscovered cultural heritage which has yet to be researched. Through the application of improved and more effective surveys, and by using the large number of sources that refer to underwater objects, as well as information gained from new and ongoing investigations of objects, research into prehistoric Lithuania and its connection with the common European historic heritage will be furthered.

Translated by Ignė Aidukaitė

Abbreviation

ATL – Archeologiniai tyrinėjimai Lietuvoje (Archaeological investigations in Lithuania). Vilnius, from 1967.

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VIDAUS VANDENŲ ARCHEOLOGIJA LIETUVOJE: TYRIMAI IR PERSPEKTYVOS

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Santrauka

Archeologinis vidaus vandenyse (ežeruose ir upėse) esantis paveldas yra ne taip gerai žinomas ir iširtas palyginti su jūriniu paveldu, nors tai anaipol ne mažiau svarbu istorijos pažinimo prasme. Ežerų pakrantėse ir upių santakose nuo pat ankstyviausių laikų apsigyvendavo žmonės dėl vandens ir maisto išteklių, saugumo, susisiekimo, prekybos kelių. Ežerų ir upių dugne glūdi ir atsitiktinai įkritisų ar pamestų daiktų. Vandenyje buvo aukojama ir laidojama. Išskirtinės vandens ir dumblo konservacinės savybės sudarė galimybes radiams ir objektams išlikti iki šių dienų.

Sisteminę povandeninių archeologinių objektų paiešką ir tyrimai Lietuvoje jau skaičiuoja trečią dešimtmetį, todėl nebūtų tikslu šią mokslo šaką vadinti vis dar nauja. Užuominų ir spėjimų apie Lietuvos

vandenyse esančius objektus ar radinius atsekama jau nuo XIX a., tačiau iki pat XX a. 9-ojo dešimtmečio jų tyrimai nebuvo atliekami. Lėtą povandeninės archeologijos raidą (ar jos pradžią) Lietuvoje lėmė įvairūs aspektai, pirmiausia, manytina, siejami su techninių galimybių ribotumu ir žinių stoka. Tačiau paskutiniiais dešimtmečiais Lietuvoje vykdomi plataus masto povandeniniai archeologiniai tyrimai ir atrandami vis nauji povandeniniai archeologiniai objektai įrodo, kad Lietuvos vidaus vandenys yra turtingi dar neatrasto paveldo.

Straipsnis skirtas povandeninei archeologijai, neįtraukiant jūrinės archeologijos aspekto. Jame minimi tik tie objektai, kurie šiuo metu yra po vandeniu, o jų paieškoms ar tyrimams taikomi povandeninės archeologijos metodai. Straipsnis nepretenduoja į visapusišką povandeninio paveldo Lietuvoje išnagrinėjimą, jo tikslas – aptarti šios mokslo srities pradžią ir vystymosi etapus, pateikti pagrindines povandeninių tyrimų tendencijas ir vykdytų naujų objektų paieškų rezultatus bei perspektyvas.

Nuo 1998 m. vykdomos naujų objektų paieškos Lietuvos ežeruose. Žvalgymams vietos pasirenkamos remiantis įvairiais šaltiniais: tautosaka, etnografinė ir mitologinė medžiaga, žiniomis iš kraštotyričių veikalų, enciklopedijų. Taip pat nuo 2001 m. žvalgoma ir remiantis ortofotografijomis (siekiama rasti ežerų gyvenviečių, remiantis Luokesų ežero pavyzdžiu). Daug informacijos žvalgymams naudojama iš Valstybinės archeologijos komisijos bylų ir Lietuvos žemės vardyno. Žvalgomi vandens telkiniai, šalia kurių yra archeologijos objektų (piliakalnių, senovės gyvenviečių, dvarviečių ir kt.). Informacijos apie po vandeniu esančius objektus teikia ir privatūs asmenys, nardymo klubų nariai.

Šiuo metu Lietuvos archeologinėje medžiagoje galima išskirti kelias povandeninių objektų, kurių tyrimams reikia taikyti povandeninių tyrimų metodiką, grupes:

1. Tiltai;
2. Gyvenamosios vietos;
3. Laidojimo vietos, aukojimai, lobiai;
4. Vandens transporto priemonės;
5. Uostai, prieplaukos;
6. Žvejybos įrenginiai.

Povandeniniai darbai, prasidėję XX a. 9-ajame dešimtmetyje, praturtino Lietuvos archeologinę medžiagą rastais naujais įvairių tipų objektais. Nors ir vėlyva povandeninių archeologinių tyrimų pradžia, jie įgauja didelį pagreitį dabartiniu metu. Lietuvoje išvystyta povandeninių tyrimų metodika. Tam didelę įtaką turėjo bendri projektai su patirties ir žinių turinčiais užsienio valstybių institucijoms atstovaujančiais mokslininkais;

Lietuvoje sukurta gana gera techninė bazė, leidžianti atlikti metodiškus tyrimus.

Vienas iš svarbių veiksnių, lemiančių sėkmingą povandeninių archeologinių žvalgymų ir tyrimų vystymąsi Lietuvoje, yra gana geras vandens matomumas, kuomet Lietuva išsiskiria iš kitų Baltijos šalių.

Neabejotinai Lietuvos vidaus vandenyse yra gausybė neatrasto ir netirto kultūros paveldo. Pritaikius patobulintas ir dar efektyvesnes paieškas bei remiantis gausiais po vandeniu esančiais objektais mininčiais šaltiniais ir tęsiant objektų tyrimus bei atliekant naujus, dideliu indėliu bus prisidėta prie Lietuvos priešistorės ir istorijos kaip bendraeuropinio paveldo tyrimų.