

# THE FIRST RADIOCARBON DATINGS FROM ZVEJNIEKI STONE AGE BURIAL GROUND, LATVIA

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## Abstract

The Zvejnieki burial ground is one of the largest of its kind in Northern Europe, similar to those in Olennii Ostrov in Karelia, Skateholm in Southern Sweden and Bøgebakken in Eastern Denmark. The Zvejnieki burial ground is distinguished by its long use, now confirmed by twenty radiocarbon datings to cover the period between seventh and fourth millennium BC, perhaps even longer. The  $^{13}\text{C}$ -measurements from the bones provided high negative values, typical for a diet based on food of terrestrial origin. The newly obtained data from the Zvejnieki burial ground provides a basis for further comparative studies of the burial practices of the North European Stone Age communities.

There are not many Stone Age dwelling sites found in Latvia, but they represent nearly all stages of the period discussed in this article, yielding a good stratigraphy, homogeneous artifact assemblages, and numerous pollen and radiocarbon data produced by laboratories in Riga, Tallinn, St. Petersburg, Moscow and Berlin. As a result, a radiocarbon chronology has been established for the Mesolithic and Neolithic periods, mainly concerning the southwestern and southeastern regions of Latvia (Liiva and Loze 1993).

In spite of the importance of the Zvejnieki burial ground, no radiocarbon datings have been made earlier. Thanks to our foreign colleagues, especially Prof. L. Larsson (Lund), 12 accelerator datings from skeletal remains were made in Svedberg Laboratory (by G.Possnert and M.Söderman, Uppsala University) and later eight datings in the Oxford University Radiocarbon Accelerator Unit of the Research Laboratory for Archaeology and the History of Art (by P.Pettitt). All of the datings are expressed in uncalibrated radiocarbon years, BP, using the half life of 5568 years (Table 1.).

Zvejnieki burial ground is one of the largest Stone Age cemeteries in Northern Europe. The burials form a complex with two adjacent habitation sites – one from the Mesolithic period (Zvejnieki II) and the other from the Neolithic period (Zvejnieki I). The whole complex is situated on a ridge of glacial origin on the shore of Lake Burtnieki, in Northern Latvia (Fig. 1.). The site was investigated by Francis Zagorskis in the 1970's. During the excavations, rich archaeological material was obtained (Zagorskis, 1987) and an important skeletal collection was gathered (Denisova, 1975). The archaeological chronology was based on (1) the typology of the artifacts, (2) the territorial distribution of the burials and (3) the changing burial traditions. According to Zagorskis the burial ground was used for a long period of time – from the turn of the 6th/5th millennium BC until the first quarter of the 2nd millennium BC, i.e. from the Late Mesolithic until the Late Neolithic. The area covered by the burial ground was divided into three units: the first group, the second group, and the transitional group of burials between them. The units followed each other chronologically.

In general, the conclusions drawn by the archaeologists have been confirmed by radiocarbon analyses, but there are some discrepancies, too. The new data obtained also provide more precise absolute datings for the various periods of the Stone Age in Northern Latvia.

Table 1. Table of the new radiocarbon datings obtained at the Uppsala (Ua-) and Oxford (Ox-) AMS-facilities.

The  $^{14}\text{C}$  data from the skeletal remains at the Zvejnieki burial ground, Latvia

Lab.no.	Sample	$^{14}\text{C}$ age BP	$\delta^{13}\text{C}$ 0/00 vs PDB
Ua-3634	1. Zvejnieki, grave 305	8240±70	-21.59
Ua-3635	2. Zvejnieki, grave 39	6775±55	-23.01
Ua-3636	3. Zvejnieki, grave 57	6825±60	-22.97
Ua-3637	4. Zvejnieki, grave 85	6460±60	-23.17
Ua-3638	5. Zvejnieki, grave 2	6900±65	-20.07
Ua-3639	6. Zvejnieki, grave 124	5280±55	-23.03
Ua-3640	7. Zvejnieki, grave 142	2370±65	-21.63
Ua-3641	8. Zvejnieki, grave 185	5230±65	-23.03
Ua-3642	9. Zvejnieki, grave 300	5690±45	-22.81
Ua-3643	10. Zvejnieki, grave 206	5285±50	-23.47
Ua-3644	11. Zvejnieki, grave 154	7730±70	-23.33
Ua-3645	12. Zvejnieki, grave 282	5100±65	-22.53
OxA-5967	1. Zvejnieki, grave 122	6395±75	-22.9
OxA-5968	2. Zvejnieki, grave 153	5745±65	-22.7
OxA-5969	3. Zvejnieki, grave 170	8150±80	-21.8
OxA-5970	4. Zvejnieki, grave 182	6005±75	-22.7
OxA-5985	5. Zvejnieki, grave 210	5660±45	-23.3
OxA-5986	6. Zvejnieki, grave 225	5110±45	-21.2
OxA-5987	7. Zvejnieki, grave 251	6195±60	-24.0
OxA-5988	8. Zvejnieki, grave 252	5410±90	-23.3

Ua = The Svedberg Laboratory, Uppsala University, Sweden

OxA= The Research Laboratory for Archaeology and the History of Art, Oxford University Radiocarbon Accelerator Unit

### The first group of burials

Within the area of the Mesolithic habitation, only a single skeleton (No. 305) was found, dated both archaeologically and by radiocarbon to the 2nd half of the 7th millennium BC (Ua-3634). The question arose as to where the rest of the Middle Mesolithic population was buried. The new data now show that these graves are situated on the highest part of the gravel ridge (Nos. 170, 154) between the younger graves (Fig. 1). The interred were laid in a supine position with their heads to the N, NW or NE. The grave pits contained light soil, red ochre, stone settings and animal tooth pendants (elk and

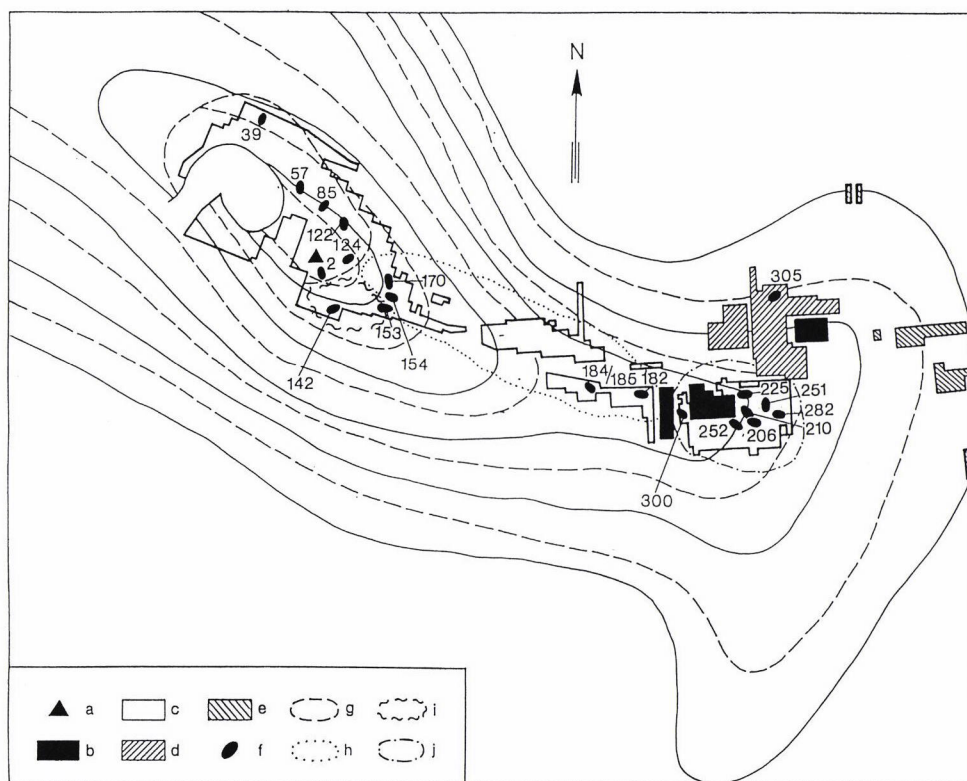


Figure 1. General plan of Zvejnieki archaeological complex (after Zagorskis 1974, with additions by the author): a) the highest point of the gravel ridge; b) modern buildings; c) the excavated part of the burial ground; d) the Mesolithic dwelling site; e) the Neolithic dwelling site; f) the burials dated by  $^{14}\text{C}$  method; g) the first group of burials; h) the transitional zone; i) the group of burials at the southern edge of the first group; j) the second group of burials.

wild boar). It had been difficult to single them out earlier due to the non-specific grave goods. Now the  $^{14}\text{C}$  datings place them back to the 7th millennium and to the 1st half of the 6th millennium BC (OxA-5969, Ua-3644).

These burials are the earliest so far known from the East Baltic area. Roughly to the same chronological group we can include the graves from Kams (Gotland) and Spiginas (Lithuania). The burials from the region east of Lake Onega (Popovo, Pescanaja) and from Central Poland (Mszano site 14) date c. 1000 years earlier (Larsson 1982; Butrimos 1989; Oshibkino 1994; Mavciniok 1993). These graves from the neighbouring areas suggest that there might be even older burials in Zvejnieki than those dated so far.

The majority of the burials situated on the gravel ridge and its slopes (Fig. 1) belongs to the Late Mesolithic, i.e., to the 5th millennium BC (Nos 2, 39, 57, 85, 122/123). They were originally dated archaeologically, but this was later confirmed by the  $^{14}\text{C}$  data, which cover the 1st half of the 5th millennium BC (Ua-3638, OxA 5967). The dead were laid in an extended supine position, mainly oriented to N and W. Grave pits contained light gravel, ochre and stone-settings. The burials were rich in animal tooth pendants (elk, wild boar, horse) and there were some bone spear-heads as grave goods. Some burials, for example No 153, arranged in the same position, were from

the 1st half of the 4th millennium BC (OxA-5968), indicating a continuity of local Mesolithic traditions into the Early Neolithic. Similar burials from this time are well known over the whole of Northern Europe, from Denmark (Bogebakken) and Sweden (Skateholm) up to Northern Russia (Popovo) and Karelia (Olenii Ostrov) (Albrethsen & Petersen 1977; Larsson 1984; Oshibkino 1989; Gurino 1956).

### **The transitional zone**

A group of burials differing in burial rites were dispersed over a larger area (Fig. 1). Some of the burials were found within the area of the 1st Group (No. 124), and some in the transitional zone between the two groups of burials (Nos 185/185, 300), but the largest number were discovered around the Zvejnieki farmstead, within the area of the second grouping (Nos 251, 210, 282). Differences appeared in the grave fills, which consisted of dark dwelling soil, a small quantity of ochre, and there were only few grave goods consisting mainly of tooth pendants of dogs and small animals. In addition to previous directions, the orientation of burials to the S was observed. Archaeologists characterised these burials as Early Neolithic and dated them to the 4th and beginning of the 3rd millennium BC. According to radiocarbon dating, these burials are from the end of the 5th millennium BC to the end of the 4th millennium (OxA-5987; Ua-3645).

### **The second group of burials**

The most characteristic burials in the second group, situated around the Zvejnieki farmstead (Fig. 1), were multiple graves with mortuary traditions and grave goods that were quite different from those of both previous groups (Nos 206–209, 220, 225 etc.). Some single graves also belong to this group (No. 252).

The dead were laid in a supine position, with varying orientation but mainly E-W. The pit fills consisted of dark soil with a considerable amount of ochre. The artefact assemblages included amber jewellery, arrow- and spearheads of flint, fishing and hunting implements of bone, slate rings, clay figurines and pottery. Two copper rings must be mentioned, too. In the burial traditions, a completely new feature was the presence of so-called “offerings” or depots, i.e. concentrations of grave goods at the edges of graves in heavily ochre-stained patches. An additional peculiarity was observed in five burials: the heads of the deceased were covered with a layer of greyish-blue clay and an amber disc was placed in each eye socket. This custom is a very rare phenomenon in the Stone Age of Northeast Europe. It is interesting that similar details – the unburnt clay layer and two amber buttons in it – were found in one grave in Hartikka, Central Finland (Miettinen 1992). We can also observe a great similarity with Finnish traditions in the flint, slate and amber inventory, as well as in clay figurines found in cemeteries and adjacent Neolithic habitation sites (types E1 and E2 after Nuñez 1986). More distant similarities in burial rites can be observed in the burials of Northern Russia and in the Volga-Oka region (Oshibkino 1994). The collective burials of the second group are considered to represent the Comb-and-Pit Ware Culture (Loze 1984). According to the established chronology, these graves were dated to the 2nd quarter and to the middle of the 3rd millennium BC. Now the new <sup>14</sup>C datings provide an earlier date for these burials: the 2nd half of the 4th millennium BC (Ua-3643; OxA-5586). These earlier datings for the Comb-and-Pit Ware burials in Northern Latvia are not really surprising if compared with the datings in Northeast Europe, especially in Finland (Siiriäinen, 1973, 1980).

## **The final phase of the burial ground**

The chronology of the final phase of the Zvejnieki burial ground is still unclear, because none of the 11 crouched burials found within the cemetery has so far been radiocarbon dated. Possibly not all of them belong to the Corded Ware Culture, although some of them can be definitely connected with it (Nos 137, 186) since these burials were accompanied by an amphora and two antler tablets (Zagorskis 1974). This culture is believed to have appeared in the Eastern Baltic in the 2nd half of the 3rd millennium BC (Loze 1992) and it represents most probably the final phase of the Zvejnieki Stone Age burial ground.

## **The most recent group of burials**

The most difficult chronological problems arose with the dating of the burial No. 142 (Ua-3640). This grave belongs to the group of twelve burials arranged in a long, narrow strip on the southern slope of the highest part of the gravel ridge (Fig. 1). The burials have a consistent eastern orientation. The grave pits were filled with greasy black soil and stones. The complete absence of grave-goods was observed and consequently this was a very difficult group to date archaeologically. The new <sup>14</sup>C dating for the burial no. 142 is 2370±65 (Ua-3640) BP, i.e., 4th century BC or the end of the Bronze Age or the beginning of the Iron Age. It would be desirable to check this dating once more.

## **Conclusions**

The new <sup>14</sup>C datings have confirmed that the Zvejnieki burial ground was used over a long period of time (7th–4th millennium BC or even longer). The typological method applied to date the graves has proved to be valid. We cannot say the same about the use of the territorial principle of dating the graves. It is clear now that the highest section of the gravel ridge was in use for an extended period of time, while the other sections were used for somewhat shorter periods.

Varying mortuary practices were observed not only in different stages of the Stone Age, but even during the same period. This diversity was confirmed by anthropological data. Pronounced features of the ancient Nordic race were observed, the Lappoid race were observed, but also individuals with various degrees of mestization were found (Denisova 1994).

It is clear that within this area, very suitable for hunter-gatherer occupation, small groups of individuals lived for thousands of years. The <sup>13</sup>C measurements from the bones provided high negative values, from –20.07 to –24.00 ‰, which is typical for a diet based on food of terrestrial origin (Zagorska & Larsson 1994). They even exceed the values obtained from Olenii Ostrov (Price, Jacobs 1989).

Various groups of the population have been buried there during several millennia. They differed in their origin, burial rites and anthropological type. It seems that these Stone Age communities had very open connections, trading, fighting etc., and accepted among themselves individuals or groups from a vast territory of north-eastern Europe. The new datings of the graves of the Zvejnieki burial ground provide a basis for further comparative studies of the burial practices of the North European societies.

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