FIELD INVESTIGATIONS IN EINBI, AN ESTONIAN SWEDISH VILLAGE

Field investigations were carried out in Noarootsi (Sw. Nuckö) parish, Läänemaa (Sw. Vik), in the seasons of 1998–2001, with the main purpose of studying the morphology of the hitherto largely unknown early cultural landscape of the Estonian Swedes. These investigations are a part of the work for my thesis, which is being written within the framework of the project "Geographical aspects of the Estonian Swedes. Changes in society, landscape and cultural meetings during 800 years", an international interdisciplinary project, with its main base at the Department of Social and Economic Geography at Uppsala University. This article focuses on the results of the excavations carried out in the village of Einbi (Sw. Enby) in 1999 and 2000. The material from the investigations of 2001 is currently being analysed and the results obtained will be mentioned briefly. The field works carried out in Einbi so far have given information about early land use among the Estonian Swedes, who appear to have established themselves permanently here sometime during the 10th–13th centuries, the colonization having been initiated before the Christian conquest of the territory. The investigations also indicate that the area has been exploited during the Early Iron Age.

Aastail 1998–2001 viidi Noarootsi kihelkonnas Läänemaal läbi välitööd eesmärgiga uurida eestirootslaste varasema kultuurmaastiku morfoloogiat, mille kohta seni puudusid andmed. Välitööd moodustasid ühe osa autori doktoritööst, mida tehakse rahvusvahelise ja interdistsiplinaarse projekti raames "Eestirootslaste geograafia aspektid. Muutused ühiskonnas, maastikus ja kultuuriühendustes 800 aasta jooksul". Artiklis keskendutakse 1999. ja 2000. a välitööde tulemustele. 2001. a uuringute materjali alles analüüsitakse ja selle tõttu mainitakse esialgseid tulemusi vaid lühidalt.

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Introduction

The settlements of the Estonian Swedes have primarily been concentrated on the northwest coast of Estonia and on the islands outside the mainland in the Baltic Sea and the Gulf of Finland (Fig. 1). Swedes have also been settled in Tallinn and probably, to a lesser extent, along the coast to the east of this city (cf. Tammekann 1961, 11). The size of this minority population has varied but it

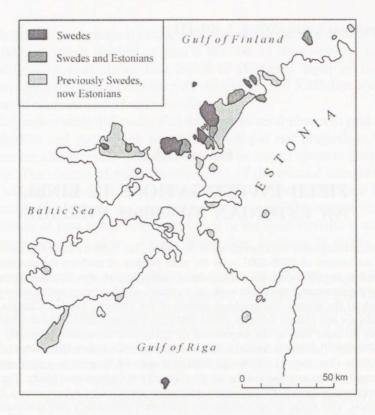


Fig. 1. The Swedish settlements in Estonia in the middle of the 19th century and earlier. After Hyrenius (1942).

Joon 1. Rootsi asustus Eestis kuni 19. sajandi keskpaigani (Hyrenius 1942 järgi).

probably peaked in the middle of the 16th century when an estimated 12 000 Swedes lived in Estonia (Küng 1991, 68). In the census of 1934, 7641 persons were registered as Estonian Swedes (Raag 1999, 146). Most of them fled, primarily to Sweden, in the early 1940s. Today many are retrieving land in the old home district. Before the end of the 19th century many of these areas were populated almost exclusively by Swedish-speaking communities. The survival of the population group throughout the centuries can probably be attributed to a combination of factors such as the relative isolation in the settlement areas, often physically separated from Estonian-speaking areas through stretches of water or belts of forest and wetlands, the continued use of the Swedish language and adherence to old customs. Their old-fashioned language and dialects as well as lifestyle have attracted considerable scholarly interest. It is also likely that the special privileges according to the so-called "Swedish right" that the Swedes enjoyed since the Middle Ages played a decisive role for the preservation of this ethnical group. This meant comparatively favourable legal rights as compared to the Estonian population. Most importantly, the Swedes possessed personal freedom and the right of free movement – although only within the traditional settlement areas. This became increasingly valuable as the pressure of feudalism grew over the centuries and serfdom was established. However, this right did not stand uncontested from the side of the local landlords, leading to frequent complaints by the peasants to authorities and to the Swedish king. The Swedish right also involved different revenues and probably also more favourable regulations as to rights of inheritance and tenancy of land (Soom 1956, 3–4; Blumfeldt 1961, 101–107).

Aim of the study

When it comes to the earliest stage of Estonian Swedish history, it is the colonization process that has received most interest, particularly questions concerning the age of the settlement, areas of origin of the first immigrants and reasons behind the colonization. The source material on which the many presented theories have been modelled has primarily been documents from the Middle Ages, ethnographical observations and place-name studies. In more recent research it has generally been assumed that the colonization took place to the greatest part during the 13th-15th centuries AD, beginning some time after the conquest and Christianization of the territory by Germans and Danes at the beginning of the 13th century (see, for instance, Johansen 1933, 260; Blumfeldt 1961, 67; Jakobsson 1980, 115). These new landlords are thought to have protected and perhaps also initiated the peopling of these coastal, supposedly uninhabited, areas by a reliable Christian population. The first written sources that mention Swedes, settled in present-day Estonia, originate from the 13th-14th centuries. Specific places are mentioned in several documents from the 1340s.1 There are also a few possible 13th century references.²

The few documents that more or less explicitly mention the presence of Swedes during the early Middle Ages have been closely studied. The present project aims at taking a renewed look at these research problems through the use of new methods. Within historical geography, especially perhaps in England and Sweden, there is a long tradition of landscape studies combining geographical analyses of historical maps with archaeological excavation techniques. Also within archaeology such studies have become more frequent during the last decades. This approach has been employed on the Noarootsi Peninsula with the purpose of studying the early cultural landscape of the Estonian Swedes, before the time of

These concern Runö (Est. *Ruhnu*), Stora Rågö (Est. *Suur Pakri*) and Laydes (Est. *Laoküla*) on the Pakri Peninsula (Sw. *Packerort*). Jakobsson (1980, 69–74) describes these documents in detail.

² Haapsalu City Law from 1294 or the beginning of the 14th century (see Blumfeldt 1961, 68–69; Jakobsson 1980, 145–146) and some place-names such as Apones in 1271 (Est. *Haabneeme*) (Johansen 1951, 114), Odensholm around 1250 and Stora Rågö (Est. *Suur Pakri*) in 1283 (Lagman 1964a, 20, 24).

³ For an overview of European and Swedish research see, for example, Gren (1997, 84–92), Widgren (1997).

the oldest preserved maps from the late 17th century. As mentioned above, the source material is fragmentary. It is only around the middle of the 16th century, when fiscal registers become more exhaustive, that we can begin to form an idea of the extent of the settlement as well as the size of the farmland in the Estonian Swedish settlement areas (Blumfeldt 1961, 73). No field investigations have previously been carried out. The field work of the project can be characterized as basic research with the aim of gathering detailed information to serve as a basis for future discussions and studies. Such an attempt at describing the landscape development inevitably leads to questions about the age of the cultivation history and the Estonian Swedish colonization process. A second aim is to, on the basis of a case study of the village Einbi (Sw. Enby) on Noarootsi, and the datings of the first clearance phase and later changes in land use that can be observed here, attempt a discussion of the relations of the Estonian Swedes to these processes and the context within which the Estonian Swedish colonization may be understood.

The investigation area - Noarootsi

Selecting a locality where research into these issues could be initiated was not an easy task, but Noarootsi, an old central Estonian Swedish settlement area, seemed suitable for a first study. Before the plague of 1710-1711 only Swedes are said to have lived here (Nymann 1977, 7). During the Middle Ages Noarootsi lay within the diocese of Ösel-Vik (Lat. Osilia-Maritima). In the middle of the 16th century this part of the diocese was called the "three Swedish lands" (Ger. Drey schwedsche lande), consisting of Vormsi (Sw. Ormsö), Noarootsi and Eyland⁴ (Blumfeldt 1962, 114–120). Noarootsi is situated in the vicinity of the town of Haapsalu (Sw. Hapsal), one of the residence towns of the bishop of Ösel-Vik. The City Law of this town is in all probability the very earliest certain written source to Estonian Swedish settlement, even if the year 1294 is somewhat uncertain. It is the first time that the presence of Swedes - in Haapsalu and in the surroundings of the town - is mentioned directly (Blumfeldt 1961, 69-70; Jakobsson 1980, 120). The name Nucke (Sw. Nuckö, Est. Noarootsi) is first mentioned in 1391 in a charter for Haapsalu, issued by bishop Winrich. This informs us that the bishop's people sometimes needed to be transported over to Noarootsi (Jakobsson 1988, 4). According to Nymann (1977, 9), it can be concluded that Noarootsi was then populated and held a Christian congregation. This is in itself not surprising, given the short distance between Noarootsi and Haapsalu. Concerning Haapsalu itself, archaeological investigations have demonstrated that the earliest traces of settlement here originate from the first half of the 13th century. According to Pärn (1998, 114-115), there was probably

The name Eyland is not in use any more but used to designate the coastal area (inhabited by the Estonian Swedes) between Salajõgi (Sw. *Salk*) and Spithami (Sw. *Spithamn*). See Fig. 2.

no permanent settlement at that time. However, the location of the site may indicate the existence of an early harbour or landing-place (Mandel 1993, 51; Pärn 1998, 120–121). Worth mentioning is also the discovery of a silver hoard in the surroundings of Haapsalu (Pärn 2001, 105) or possibly in the ruins of the castle in the 19th century, which contained Scandinavian ornaments and coins mainly from the 11th–12th centuries. The youngest coins were minted in Sigtuna in the 1180s and on Gotland between 1145 and 1225 (Leimus 1997, 74–80). We do not know when the hoard was deposited, but the circumstance that contacts of some form may have taken place between the Haapsalu area, Gotland and the Mälar region in eastern middle Sweden at an early date is very interesting in the present context.

Einbi

Soon after an initial field orientation in the area in 1998, the interest was focused almost exclusively on Einbi, a village located in the southwestern part of the Noarootsi Peninsula, opposite the Island of Vormsi (Fig. 2). There are a number of reasons for this. Some indications, such as etymology and size, suggest that the village is one of the oldest in the area. Large villages with names that have been interpreted as having an Estonian origin, such as Sutlepa (Sw. Sutlep), Paslepa (Sw. Pasklep) and Salajõgi (Sw. Salk) have previously been interpreted as belonging to the oldest settlement layer of these districts (Johansen 1951, 124; Lagman 1964a, 71). Einbi was also a large village and is mentioned comparatively early - in 1457 in the form of Enbue. However, to draw conclusions on the age of any settlement on the basis of the first reference in a written source, arbitrarily preserved, may be completely misleading. The village name is of Swedish origin and possibly refers to junipers (Sw. enar) (Lagman 1964a, 47). In the oldest preserved fiscal document, probably from the 1550s, the village is described as being Swedish (Blumfeldt 1962, 114-119). According to local tradition, Einbi is the oldest village on Noarootsi, with prehistoric (Viking period) roots, the name meaning "single village" (Mitman 1945, 9). Although this information is interesting, it is difficult to know how to value it.

Einbi is also comparatively well documented for example in the form of historical maps, the oldest of which originates from 1698 (Estonian Historical Archives = EA 1.2.IV-253; EA, copy 2072.4.105; see Fig. 3). The fiscal documents comprise another important source, albeit of varying quality and completeness. Of great significance is also the fact that Einbi has remained relatively unaltered throughout the centuries and also during the Soviet era. The basic layout of the village, especially concerning fields, enclosures and stone fences, is very similar to the situation recorded on the oldest map. An interesting circumstance is also that it is actually possible to receive some answers to questions concerning features of this rather archaic and well-preserved landscape through interviews with those who still live or used to live in it.

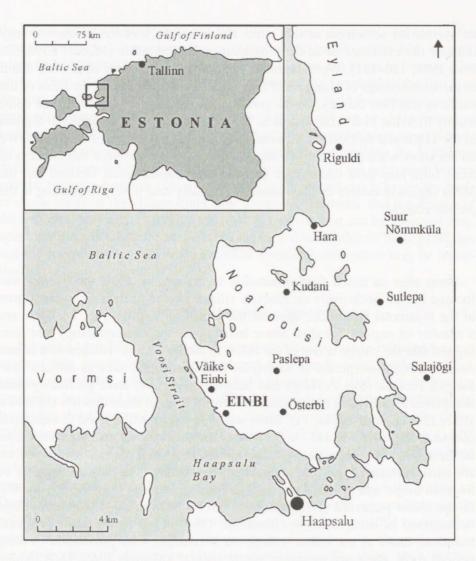


Fig. 2. The location of Einbi and some other localities mentioned in the text.
Joon 2. Einbi ja teiste tekstis mainitud kohtade paiknemine.

The point of departure for a retrospective analysis of the cultural landscape is the above mentioned map. It is undated, but in all probability it is contemporary with a description from 1698 (EA 1.2.V-8; Berencreutz 1997, 73). According to Berencreutz (1997, 97), the creation of these documents can be connected to a revision of the tenancies in Einbi in 1698. These documents give unique information about the situation in Einbi at the time. The arable, managed in a three-field system, lay both close to the village as seen in Fig. 3, and at some distance from the village (north and northwest of the section shown in Fig. 3);

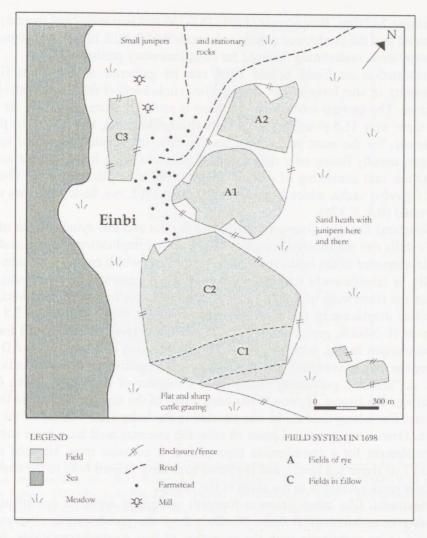


Fig. 3. The central part of Einbi in 1698 (section of map) by Johan Holmberg. Original map in Swedish. EA 1.2.IV-253.

Joon 3. Einbi keskosa 1698. a Johan Holmbergi järgi (osa kaardist). Algne kaart on rootsikeelne.

two enclosures at the location of the present Väike Einbi (Sw. *Lilla Einbi*)⁵ and also one enclosure in the forest approx. 300 m north of Einbi. At that time the arable in Einbi amounted to 10.5 hectares per farm, equivalent to an average Swedish farm in the 1660s. The fields, however, are described as sandy and stony and could not possibly have sustained the population of this large village

⁵ Väike Einbi housed no permanent settlement at the time. It was founded as a village unit in the late 19th century after the field regulation. For location see Fig. 2.

containing 24 farms. Berencreutz (1997, 157–159 and literature cited therein) has estimated that the produce of cereals only made up 20–50% of the subsistence of the population, underlining the need for complementary production.

Information on Einbi before 1698 can be gathered mainly from fiscal documents in the form of tax books (Sw. *vackeböcker*) from the 16th–17th centuries. The earliest information we have is probably from the 1550s. At that time there were 11.5 ploughlands⁶ in Einbi (Blumfeldt 1962, 114–119). The fiscal documents for the most part do not give specific information about individual villages, usually listing only the farmers' names and taxes for the whole *vacka*, a taxation unit consisting of several villages. For example, within the Österbi (Sw. *Österby*) vacka, which Einbi belonged to, in 1565, rye, barley and oats were cultivated (RA, F 376).

Noarootsi lies on a limestone plain, and the flat and low-lying surface of the area entails that the shoreline displacement has vital implications for the study of the development of the landscape. This displacement, which can vary considerably locally, is insufficiently known for the area, but is currently being investigated within the framework of the project. According to preliminary estimations, the shoreline displacement for Noarootsi amounts to, at the most, around 2.5 mm per year (I. Nõulik, pers. comm. 1999-03-16). This figure has been used for the reconstruction in Fig. 4 to give an idea of the situation at around 1200 AD just before the time of conquest. The peninsula, as the Swedish name Nuckö indicates (Sw. ö; "island"), previously consisted of a number of islands, of which Noarootsi was the largest. By now it has been a part of the mainland for more than a century. For a long time Einbi was situated in the immediate vicinity of the seashore. From a topographical point of view the site may well have been suitable for settlement for a considerable time period. It contains more elevated areas (up to 7 m above sea level), and sheltered bays have existed both to the east and at some greater distance to the north of the village.

Noarootsi, like other Estonian Swedish settlement areas, is conspicuously wanting in archaeological finds. No finds from the parish can in all certainty be said to be prehistoric with the exception of two Anglo-Saxon coins, found in 1848 in the vicinity of Suur Nõmmküla (Sw. *Klottorp*). These were coined during the reign of king Ethelred II (976–1016), the last one probably between 1009–1017 (Molvõgin 1993, 59). More precise find location or circumstances are unknown. The most common category of monuments in the survey of the parish carried out in 1924 by M. Schmiedehelm are possible graves/remnants of graves,

See Hoppe (2002) and Hoppe et al. (2002) for an account of the results of the studies of shoreline

displacement and pollen analyses obtained within the project so far.

This assessment value (Sw. hake, Est. adramaa), of ancient Estonian origin, originally comprised one normal-sized farm or homestead. With time it came to designate a unit of measurement for land area, primarily to measure the field in barrels of seed for sowing, which meant that the size varied in different parts of the country. The size and nature of the ploughland used on Estonian Swedish farms is unclear, but there seems to have been a difference between Swedish and Estonian farms (Blumfeldt 1961, 94–95. Concerning the ploughland, see also Tarvel 1983).

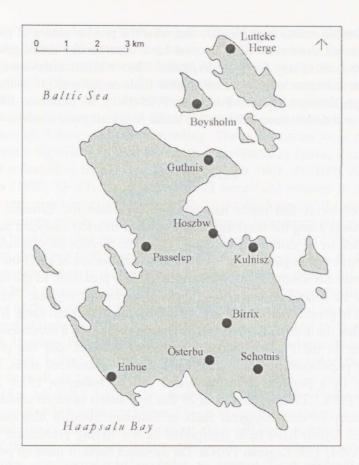


Fig. 4. Noarootsi Island at around 1200 AD (shoreline approx. 2 m above present sea level) with villages mentioned in the 16th century or earlier (Johansen 1951; Lagman 1964a). First name forms: Enbue – 1457 (Sw. Enby/Est. Einbi), Österbu – 1450 (Österby/Österbi), Schotnis (Skåtanäs/Tahu), Birrix (Birkas/Pürksi), Kulnisz (Kolnäs/Kulani), Passelep (Pasklep/Paslepa), Hoszbw (Hosby), Guthnis (Gutanäs/Kudani) – all these approx. 1540, Boysholm – 1557 (Bysholm/Vööla), Lutteke Herge – 1422 (Harga/Hara).

Joon 4. Noarootsi saar aasta 1200 paiku (rannajoon on u 2 m kõrgusel praegusest merepinnast) koos 16. sajandil või varem mainitud küladega (Johansen 1951; Lagman 1964a). Kaardil on kohanimed esitatud esialgsel kujul.

with or without human bone finds. These are usually associated with cemeteries of plague victims (Schmiedehelm 1924). Plagues have ravaged the countryside a number of times and the recurrent outbreaks during the 17th—early 18th centuries have surely left a profound impression in public memory. According to Valk (1999a, 215–217; 1999b, 19–20), popular data of old cemeteries or bone finds in Estonia almost always, by archaeological experience, refer to a permanently used local cemetery, commonly in constant use from the 13th–14th centuries to the late 17th–early 18th centuries. Whether or not this is the situation in Estonian Swedish

areas, and on Noarootsi in particular, and what the precise nature of these finds is, is not known since none of these sites have been further investigated. From Einbi, no records of any finds are available. The residents interviewed are not aware of the existence of any archaeological finds or monuments in the vicinity of the village (amongst others J. Svetlakov, 1999-05-13, M. Lasareva, 1999-05-13, both Einbi, and A. Mitman, 1999-05-14, Väike Einbi, all pers. comm.).

Early agriculture

A belt of forest and mires has naturally separated the Estonian Swedish settlement areas along the northwest coast from the districts eastward and further inland, settled by an Estonian population. Here, the Swedes may be said to have utilized a sort of ecological niche. The mode of subsistence in all of the Estonian Swedish areas has always been characterized by the proximity to the sea and by adaption to the special natural conditions of these coastal regions. The soils are meagre and in general constituted primarily by chalk gravel and sand. It has been suggested that the colonization of these areas, in parallel to a supposedly similar development in the Finnish Swedish settlement districts, did not push aside an existing population, but rather used previously uninhabited areas, exploited extensively by a population living further inland (Johansen 1933, 256-261; Meinander 1983, 232-238). In favour of this hypothesis mention could be made of the scarcity of archaeological finds in Estonian Swedish districts and the place-names, which have been interpreted as not having prehistoric character (Johansen 1951, 124; Lagman 1964a). On the other hand, it must be pointed out that in archaeological respect the areas are generally poorly surveyed. Also, the place-names have been interpreted from the initial standpoint that the settlements cannot be older than the 13th century at the most. Any ambiguities, such as names like Odensholm (Est. Osmussaar), Ormsö (Est. Vormsi), Torsgrund (a shoal outside Vormsi) and Harga (Est. Hara) have still been explained from this viewpoint.

We do not have much actual information on agricultural practices during the Middle Ages. The source material is sparse, consisting of a few fiscal documents. As a basis for studies of land use during the Middle Ages later fiscal sources and the few surviving historical maps from these areas from the end of the 17th century have to be utilized. No ancient fossil fields have been brought to attention in these districts. The first farming population in northern Estonia, including the Estonian Swedes, are thought to primarily have settled on the moraine heights while damp depressions in between, with finer sediments, were left as extensively used outlying lands (Tammekann 1961, 52; Lagman 1964b, 129).

Information on field systems earlier in use is also limited. In historical times, in the middle of the 19th century, three-course rotation was prevalent, except on Vormsi and parts of Ruhnu (Sw. Runö) (Russwurm 1969 (1855), II, § 220).

Previously the two-field system long dominated among the Estonian Swedes, even if the three-field system was not completely unknown. For example, the transition took place at the end of the 17th century among the Swedes on the Vätta Peninsula (Sw. Vätta) on Saaremaa (Sw. Ösel), and according to Blumfeldt (1961) the situation was probably similar in the Estonian Swedish villages on the mainland. The reasons for the conservatism were meagre soils and the importance of fishing and cattle-breeding. These industries were generally of much greater significance on Swedish than on Estonian farms; a circumstance which is reflected in fiscal documents (Blumfeldt 1961, 91-100). According to Johansen (1925, 73-85), the introduction of three-field rotation in the Estonian Swedish area may have been connected to the establishment of the manors during the 17th century which, under Swedish influence, introduced this system. However, this hypothesis has been questioned by Berencreutz (1997, 152). In Estonia in general the three-field system dominated in historical times. It seems somewhat uncertain when it was introduced. The earliest concrete information on the three-field system in use derives from the 16th century. Earlier, from the beginning of the second millennium, a more complex form of two-field rotation, reminiscent of three-field farming, may have developed (Lang 1996, 497–498).

Roeck Hansen (1996, 60-68) has studied historical maps in parts of Finland from the time before the field regulations and has concluded that two-year rotation, as well as the agglomerated, regulated settlements according to sun division (Sw. solskifte) that can be observed in southwestern Finland, are due to the stronger Swedish influences here. This is in contrast to the more spontaneous land division with three-course rotation, slash-and-burn or other field systems in use in the east, especially in Ostrobothnia. In the southwest, a feudal social organization was introduced in order to control local production and tax collection. An interesting question is if parallels may be observed in Estonia, which also has been a sphere of interest for Sweden in many ways. No systematic investigation has been carried out but according to Hoppe (2001, 11) it seems, judging from the oldest map material from the end of the 17th century, that no villages were regulated in an obvious way, at least not at that time. It is possible that they had been regulated earlier. Hoppe points out that many villages were laid waste during the Livonian wars and were later reconstructed. A lack of geometrical village regulation in the Swedish Estonian settlement areas could point towards eastern influences, or be the result of spontaneous colonization or resettlement and/or the peripheral location. In Sweden such regular structures are found only in central regions (Roeck Hansen 1991, 115).

Field investigations in 1999 and 2000

Mapping, excavations and dating of landscape elements in Einbi were carried out in the seasons of 1999 and 2000 in order to gain information on the age of the

cultivation history in the village, as well as the earliest development of the cultural landscape in terms of observable changes in landscape use, field systems in use, and possibly the ethnic identity of the inhabitants. Minor efforts were also initially invested in Paslepa and Sutlepa but were not particularly fruitful and therefore not further pursued.

A number of stone walls were investigated, belonging to the enclosures A1, A2, C2 and C3 (Fig. 3). Walls surrounding the field to the north of the village in the forest were also investigated. Trial trenches were also opened in the village toft and through a couple of stone heaps of unknown origin, but no significant layers or finds were encountered here. These heaps are most likely the result of recent clearing activities.

The stone walls were commonly in the shape of a double row of granite stones, in a few cases in the form of a single row of stones. The stone material in general seems rather too small for the walls to have consisted entirely of stone. They may have had a superstructure of wood.8 Even though most of the stone walls of Einbi circle the fields of today, they may be called fossil forms (Lindquist 1968, 9), since their original function has been lost. They have no real purpose today. Trenches were opened in cross-sections through the walls in sections that could be recognized as identical with fences on the map of 1698 and therefore were believed to be comparatively unaltered and conceivably of a high age. The technique of historical map overlays was used (see Cserhalmi 1998) in order to transfer the information on the historical maps to transparent film for use on top of modern maps to enable orientation in the earlier landscapes. Trenches were also opened in some walls not previously mapped, in attempts at dating these as well. A similar situation as the one on Noarootsi can be observed on Gotland, where even today some stone walls are found in the places indicated by the first maps drawn up for taxation purposes around the year 1700, where every fence, some of which may have been of stone, have been carefully marked out by the surveyor. Some of these walls may, according to Berry et al. (1997, 12), have medieval roots. Typically, the layers, below/beside the walls, consisted of a humus layer (at ground level) 10-20 cm thick, under which a sandy soil layer could be found, above the sand at the bottom of the trench (see Fig. 5). Only under one wall, located in the village centre (Smeens' plot) and a part of a cattle path, more distinct cultural/charcoal layers were encountered.

In the village toft a trial trench was opened through a house foundation, with the main aim of investigating the lowermost layers and finding charcoal enabling a dating. The known, and relatively high age of the foundation⁹ allowed us to

Such walls, "stengårdar", have been in use on Ruhnu (Tiberg 1959, 30). Similar walls have been used also on Gotland, "halvvastar" (Berry et al. 1997, 11–12) and elsewhere, reflecting the available building material as well as the kind of animals that have been kept.

This house (Klos Matsas) burnt down after having been struck by lightning in 1900 or 1901 (J. Ribon, 2000-08-04 and B. Peedu, 2000-08-30, both descending from Einbi; pers. comm.).

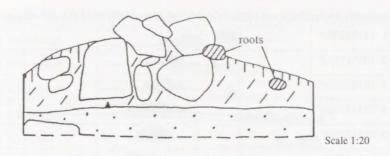


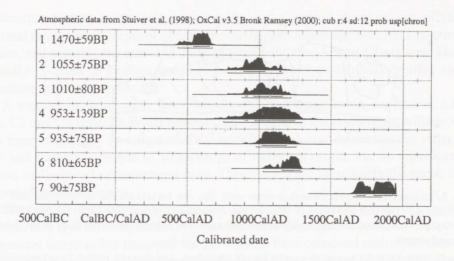
Fig. 5. Example of a trench through a stone wall, this one located on the northwestern side of enclosure A2. The wall was dated to 1055 ± 75 or calibrated (1 sigma) 890–1150 AD (Ua-17787). The layers, from above, are turf, sandy humus and sand. The triangle marks the place of the dated charcoal sample.

Joon 5. Näide välja A2 loodeküljel asuva kiviaia läbilõikest. Aed dateeriti 1055 ± 75 radiosüsiniku aasta vanuseks, kalibreeritult (1 sigma) perioodi 890–1150 AD (Ua-17787). Kihid ülevalt alates: mätas, liivakas huumus ja liiv. Kolmnurk tähistab söeproovi võtmise kohta.

avoid contemporary disturbances. The remains of the house itself consisted of stones, bricks and recent find material, primarily in a clay dominated layer. Parts of the remains of a stove could be observed. Under the foundation a layer of soil mixed with charcoal was encountered, interpreted as an old plough layer, and a corresponding layer was also found under a field baulk in the immediate vicinity.

Besides charcoal, being the primary sought-after material, the finds from the stone wall excavations consisted of bones, iron fragments, slag and burnt clay. Fragments of a melting pot for bronze were encountered between the lowermost layer of stones of one wall, dated to 900–1250 AD (Tln-2519). Such melting pots have been found in Estonia from the 13th–14th centuries onwards (Ü. Tamla, pers. comm. 1999-06-18).

Charcoal for dating was sampled from the layer immediately under the stone walls as close to these as possible. Usually the charcoal found under cultural land-scape features is attributed to an original clearance by fire. There can be several sources of error, such as charcoal deriving from other sources and contamination. Importantly, when seeking to describe the origin and development of a field system, a long series of ¹⁴C dates is necessary to enable valid conclusions to be drawn. Single dates can be misleading or even completely erroneous (Ericsson 1999, 59; Petersson 1999, 61). From the investigations in Einbi in 1999 and 2000 16 ¹⁴C dates were acquired (Figs. 6 and 7). The stone walls were in many cases identified on the oldest map from 1698. These were often separated from the field by an untilled border zone, which should mean rather good preservation conditions for charcoal from an original clearance by fire, while charcoal in the fields has been divided into small pieces by continual cultivation and completely

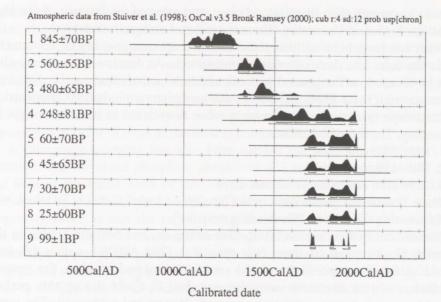


No.	Lab No.	Enclosure
1	Tln-2517	A2
2	Ua-17787	A2
3	Ua-16027	A2
4	Tln-2519	A1
5	Ua-16803	A1
6	Ua-17525	A2
7	Ua-16804	A1

Fig. 6. Dates and calibration intervals, enclosures A1 and A2 (see the denotations of the fields used on the map of 1698, Fig. 3). In chronological order. Sigma intervals shown as brackets under the curves. In the text the 1 sigma level is used.

Joon 6. Dateeringud ja kalibreeringu intervallid väljadelt A1 ja A2 (väljade asukoht 1698. a vt joon 3). Dateeringud on kronoloogilises järjekorras. Sigma intervallid on näidatud sulgudega dateeringukõverate all. Tekstis on kasutatud 1 sigma kalibreeringut.

scattered (cf. Lindquist 1968, 16; Sporrong 1971, 46). A layer of soil containing charcoal pieces was encountered under all of the investigated walls with only a couple of exceptions. In most cases charcoal was found also outside the walls, but in significantly larger amounts under the walls. It does not seem likely, though, that all of these dates from different time periods should originate from clearances by fire. This may be plausible for the earliest dates, but seems unlikely for the samples deriving from the last centuries, especially for those from central Einbi which at that time lay in a very open landscape. It seems safer to say that what is being dated in general is simply an event involving fire predating the construction of the walls, but not too long ago, since most likely the charcoal would then have been scattered by the constant activities of daily life and land use in the village so that nothing could be regained.



Lab No. No. Enclosure Ua-17524 Found. Ua-16810 Smeens Ua-16805 B C2 Tln-2518 5 Ua-16806 B Ua-16809 Smeens Ua-16808 C3 8 Ua-16807 C3 9 Ua-16026 C2

Fig. 7. Dates and calibration intervals from Einbi except enclosure A1 and A2. Found: plough layer under house foundation, Klos Matsas' plot. Smeens: stone wall in Smeens' plot, central Einbi. Ua-16026 cannot be calibrated $(99.4 \pm 0.9 \text{ pM})$.

Joon 7. Dateeringud ja kalibreeringu intervallid Einbist, välja arvatud väljad A1 ja A2, saadud künnikihist majavundamendi alt (Klos Matsase krunt) ja kiviaia alt Smeensi krundilt Einbi keskosas. Dateeringut Ua-16026 pole võimalik kalibreerida.

At the excavation of the stone walls several pieces of charcoal were collected at each site from a secure context directly underneath the walls to enable the selection of the most suitable pieces through wood type analysis, performed by Danielsson (1999; 2000; 2001). Olsson (1977, 208; 1983, 207–208) has pointed out the importance of undertaking such an analysis before a sample is subjected to ¹⁴C analysis. Most of the datings were carried out at the Ångström laboratory,

Uppsala University (Ua; accelerator dating), and a few at the Institute of Geology at Tallinn Technical University (Tln; conventional radiocarbon dating).

What can be concluded from these dates? It appears possible to, tentatively, divide the dates into three overriding time periods. As discussed above, attention must be focused on the general patterns and time periods that can be discerned in the material, these providing a more accurate picture of what has happened in the landscape than single dates, which, when considered in isolation, might be misleading. The three periods are:

- 1. 10th-13th centuries,
- 2. 14th-15th centuries,
- 3. 17th-20th centuries, i.e. recent dates.

There is also one earlier date, to the 6th–7th centuries (Tln-2517), which will be discussed in the section "Concluding remarks".

A clear cultivation period, 10th-13th centuries, has become visible in the material. No less than six dates (age span 890-1290 AD) fall within this time period. Although some of the dated samples consisted of pine, the general conclusion is that extensive activities occurred in Einbi during this period, probably representing an intensive phase of clearing and settlement. The wood type analysis suggests, although the material is very small, that the clearing was made in a forested environment dominated by fir and pine. A marked concentration of these datings, five out of six, in the fields A1 and A2 (Fig. 6) indicates that the first cultivated fields in Einbi were in all probability located in this area. It is not easy to know precisely what is being dated in the case of charcoal encountered under cultural landscape elements. However, the concentration of these early dates in this area and time period indicates that the field/fields here may have corresponded rather well to their appearance on the map of 1698. A reservation has to be made for the southernmost side of the enclosure where no walls are preserved enabling dating. The only spatially deviating date (Ua-17524) from this oldest time period derives from the plough layer under the house foundation in central Einbi. This may also represent an old field surface from an early phase of cultivation.

Two dates derive from the 14th–15th centuries. The sample Ua-16810 points towards some kind of activity in this particular spot (Smeens' plot) in the village toft (1300–1430 AD). The same is true of the sample Ua-16805 (1330–1490 AD) which was taken from the field in the forest north of Einbi.

In a village having been constantly inhabited it is not too surprising that a number of dates are more or less contemporary (17th–20th centuries). Activities such as field regulations have naturally had an impact upon the landscape and its soil layers. A land division was carried out in Einbi in 1885–1886 (EA 2079.9.112). In Sweden, in general, many new fences, both of stone and wood, were built as a consequence of the agrarian expansion in the 17th century and in connection with the field regulations during the 18th–19th centuries (Myrdal 1979, 102–103). On Gotland most of the stone walls were constructed during the latter part of the 19th century in connection with the execution of the

field regulations (Sw. *laga skifte*) (Berry et al. 1997, 12–13). The contemporary dates also give some important information about the early development of the cultural landscape in Einbi. They indicate that C3, the field located below the village towards the shore, is not of ancient origin. Similarly, the two dates from C2 indicate that this enclosure/field is also of late origin. The name *Djurgoden* for this field, noted on the map from 1860–1861 (EA 2072.4.111), indicates that this field has an earlier history as grazing grounds. This is also probable from a topographical point of view as the field is comparatively low-lying.

A phosphate mapping has also been carried out in Einbi (Markus, forth-coming). This involved phosphate analysis of 411 samples from Einbi, 27 from the field in the forest north of the village and 67 from arable in Väike Einbi, performed by the Phosphate Laboratory, Visby. Concerning Einbi itself, the most important result is that the raised phosphate levels observed agree well with the area of the fields of today and the village toft. No completely differentiated pattern has appeared indicating a radically different land use during an extended time period or concerning location of the village toft. The phosphate levels in the field in the forest and Väike Einbi are much lower than in Einbi, giving evidence of a considerably lower level of intensity/activity at these sites.

Seminar excavation in 2001

In May 2001 a seminar excavation was carried out in Einbi with participating students from Tartu and Uppsala. The aim was to attain a clearer picture of the early clearing phase in the 10th-13th centuries that the excavations of 1999-2000 have pointed towards, and also, to try to obtain more detailed knowledge of the changes in the landscape use during the following centuries. Excavation took place in the village toft, in order to determine the character of the oldest layers here, and also in field areas in Einbi not cultivated recently, where remains of an older landscape use could be expected to be preserved. Especially closely studied in this manner was the bank between the fields A1 and A2 (the white space between these fields in Fig. 3), which had primarily been dated to the 10th-13th centuries. It was hoped not only that this bank would be a sheltered area where early agricultural features could have been well preserved, but also that the establishment of whether it had been cultivated at some time could give information on original field system in use in the village. An excavator was used for the opening up of long trial trenches and also later for restoration. At the field investigation land forms and monuments such as house and mill foundations were mapped as well.

The excavations of the field surfaces revealed sandy soil layers with, in many locations, observable and traces at the transition to the underlying sand. Charcoal and soil samples were collected from the ard marks as well as other layers to enable dating and macrofossil and chemical analyses. Two of the dates received

so far from the lowest layers of these trenches give further evidence of activities during the 10th–13th centuries. It could be concluded that the bank between the fields A1 and A2 has been at least partly cultivated. Two dates from the lowest layer in two different trenches in this bank indicate that this area was first taken into use sometime during the 15th–mid 17th centuries. One date from a field trench in the Klos Matsas' plot in central Einbi once again points to some type of change in landscape use taking place in the 14th–15th centuries.

At the excavation in the village centre (Smeens' toft) the most interesting discovery was a cultural layer sealed underneath a sand layer. Here charcoal, bones and an iron object (a fish hook) were found. A bronze spoon was encountered, possibly belonging to the 14th century (H. Pauts, pers. comm. 2002-01-13), and ceramics was found further down in the lowest part of the layer. Charcoal from this layer was dated to 1290–1400 AD. One sample from the same layer at the transition to the underlying sand was dated to 250–420 AD.

On the bank between the fields A1 and A2, at the highest topographical point of the village, 7 m above sea level, three hearths of a prehistoric character were also unearthed at the excavation. They can be described as pits in the sand filled with sandy soil rich in charcoal and soot of a fatty consistency. They were unusually deep and probably served specialized functions. One of the hearths was partly stone-lined. These have now been dated to 170 BC–10 AD, 40 BC–140 AD and 560–660 AD.

Concluding remarks

The field investigations have given valuable information about the earliest phase of landscape use in Einbi. As we have seen, a period of clearing and intensive agricultural activities, the 10th–13th centuries, appears quite clearly in the material. Initially this was interpreted as a period of original clearing and settlement. However, there is now undeniable proof that the area had been used to a considerable extent also previously (see below). The 10th-13th centuries is therefore at this point interpreted as a time of expansion and tentatively as a period in which continuous cultivation and settlement in Einbi was initiated. At some point during this period fields were cleared by fire in forested surroundings - as indicated by wood type analysis, even if the material is very small - in the approximate area of the fields A1 and A2 on the map of 1698. All other fields that we see today are seemingly of more recent origin. The cultivated area during this early phase seems to have been rather small as compared to later times. The field C2 was probably used for grazing before the area was converted into a field, as evidenced by the name Djurgoden on a 19th century map. The phosphate mapping points towards a continuity in land use and the first farmsteads were probably situated more or less where there are buildings today, possibly with a focus on the central and northwestern parts of the village toft - close to the fields A1 and A2 and the plough layer in the village toft (Klos Matsas' plot).

Phosphate analyses in general cannot give precise information on age. However, the values from Väike Einbi and the field in the forest indicate low levels of intensity/activity here compared to central Einbi. This may well be connected to a relatively short period of use. Also, these field surfaces are located at some distance from Einbi, making it improbable that they were primary choices for cultivation plots by the villagers.

It seems likely that the Estonian Swedish colonists, if they came from an area with similar preconditions, used similar agricultural techniques as the ones in use in their old home areas. The three-field system has dominated in historical times. Earlier, the two-field system was in general use, possibly also yearly cropping in some places. When the three-field system was introduced in Einbi is unclear. The possible clearing of the field in the forest north of the village during 1330-1490 AD may be connected to a change in field systems. However, caution is required, since there is only one dating from this field pointing to this time period. In general, the introduction of the three-field system would have to be the result of some strong incentive since three-field farming requires more work. In these meagre districts much more manure would be required (cf. Cserhalmi 1998, 92-93). Perhaps the reason should be sought in increased feudal pressure, or in the population growth, which peaked in the middle of the 16th century. The two dates to the 15th-mid 17th centuries of the bank between the fields A1 and A2 suggest that two-field farming may have been in use prior to the three-field system. However, ongoing analyses may help to clarify this further.

Four dates from the expansion period in the 10th–13th centuries are definitely earlier than the 13th century (Ua-17787, 890-1150 AD; Ua-16027, 900-1160 AD; Ua-16803, 1020-1190 AD and from 2001, Ua-18655, 970-1160 AD). The time span of the dates is rather wide and the age of the wood dated (here representing, in two cases, coniferous, and in two, deciduous trees) always involves some degree of uncertainty. However, these dates - together with the even earlier dates (see below) - constitute the first evidence that the area was actually inhabited before the first written sources, and, interestingly, clearly point towards the area having been settled before it was conquered, 10 something which previously has been viewed as a prerequisite for the settlement of the Estonian Swedes in this region. It is now evident that other models of explanation must be sought. Can we be sure that this population was Estonian Swedish? It is very difficult to surmise ethnicity on the basis of archaeological material. Ethnicity in itself is a very problematic and complex concept. Within the social sciences the individual and flexible aspects of ethnicity are often emphasized. To connect prehistoric features with ethnicity is obviously problematic since we have limited knowledge of population groups, political constellations and individual affiliations during prehistoric times. However, in the case of Einbi, the continuity in the land use, the place-name and also other factors, such as the particular natural conditions of the area and the absence of archaeological finds of Estonian

The first documented crusade to Läänemaa took place in 1210 (Vunk 1999, 22).

character, all point towards a continuity from the settlement existing in the 10th–13th centuries to the time when the population is first mentioned as Swedes in the earliest preserved fiscal sources in the middle of the 16th century. The absence of finds in general may point towards a Christian population, not depositing grave goods. In Fennoscandia a rather distinct border exists between the Viking and the Medieval Period in this respect, in contrast to Estonia, Latvia and Lithuania, these countries having a much longer transitional period as to burial customs (Valk 1998, 238–244). However, the lack of archaeological investigations in the area must be kept in mind.

Many signs now point to the area also having been exploited before the 10th-13th centuries. These are the hearths, dated to the Early Iron Age and the Vendel Period, and the date to the Roman Iron Age of the lowest part of the cultural layer, excavated in central Einbi in 2001. Also, an earlier isolated date to 540-650 AD has been obtained from under a stone wall in Einbi. Here it must also be mentioned that the Ecological Institute of Estonia has been able to certify, on the basis of studies of a pollen core from Riguldi (Sw. Rickul), north of Noarootsi, that agricultural activities took place here around the Migration period (Hoppe 2002, 13). What relation this landscape use, probably organized in a completely different manner, has to the later Estonian Swedish population remains to be established. In any case, it seems rather unlikely that a district like this, particularly here the main island of Noarootsi, being relatively large and located close to the mainland, and especially to Haapsalu with the possibility of an early harbourplace here, would not have been exploited before the time that permanent settlement came about. Particularly during the late Iron Age a significant spread and condensation of settlements took place in Läänemaa (Mandel 1993, 50). Parallels can be drawn to Scandinavia and much of Europe, where a significant increase in population and settlement expansion can be observed during the late Iron Age and the early Middle Ages (see, for instance, Broberg 1990, 135 and literature cited therein). It is likely that the inland population used the coastal areas in different ways, although evidently not very intensively judging from the lack of finds. Agriculture and cattle-breeding have probably been the main occupations. Interesting is that finds of fishing tools from graves of the late Iron Age are completely absent in Läänemaa (Mandel 1993, 46). According to Lang (1999, 331–335), very little evidence is available of permanent settlement in the immediate coastal areas in Estonia between approx. 1000 BC and the Middle Ages (13th century). He connects the desertion of the coastal areas in the Bronze Age to a decrease in seal resources and the growing importance of farming.

That a Swedish-speaking population *did* settle in these districts is a circumstance which is in no way exceptional in itself. In migration research the concepts of "push" and "pull" are often used as analytical tools in order to understand migration (see, for instance, Walmsley & Lewis 1984, 135; Demuth 2000, 36). "Push" factors are circumstances that make people inclined to migrate from an area and "pull" factors are the perceived brighter possibilities in the destination

area. It is easier in this particular case to discuss probable "pull" factors. The established explanation that the migrants came on the initiative and under protection of the Christian landlords has to be repudiated as it appears that they at least began to settle before the country was conquered. We do not know how limited in time the actual colonization process was. There were probably several waves of immigrants. The disparate character as well as distance between the Swedish settlements indicate that this has probably been the case. A hypothesis could be that the most important "pull" factor has been this specific environment that the migrants settled in. It seems that knowledge of districts along the opposite coasts of the Baltic Sea has been good also before the conquest. There is a wealth of evidence, which shall not be recounted here, for movements and contacts of diverse character across the Baltic Sea in both directions and beyond throughout prehistory, in the form of artefacts, archaeological monuments, written sources, etc. It is possible that individuals or groups from across the sea visited these areas as fishermen and possibly hunters already during earlier times, perhaps seasonally, maintaining a kind of right to use the territory. These areas are suitable mostly for such occupations, and for the Estonian Swedes, fishing, as well as cattle-breeding, have always been vital industries. In the first fiscal documents it is evident that the Estonian Swedish population engaged in these activities. We know that the early inhabitants of Ruhnu were dependent on fishing and sealing. In 1341 Bishop Johannes of Curonia announces that he has permitted "Swedish" people on Ruhnu the right of possessing property according to Swedish right (Jakobsson 1980, 69-71). They are to contribute with tithes of fish and seal. No colonization is mentioned and it is fully possible that the island was already inhabited. The early appearance of some other Swedish place-names, discussed above, may point in the same direction. Perhaps we can hypothesize that at a point in history when the "push" and "pull" factors became pressing enough, these areas, already well known from practical experience, were chosen for immigration. The newcomers were accepted by the neighbouring peoples because of their traditional presence in the area and, I believe, exactly because they used the territory in a way that the Eastern neighbours, focused on agriculture, had little interest in. At least these were not threatened by the immigrants to such a high degree that they would be driven away.

One should not be mistaken into believing that any one single explanation holds true of an ancient migratory movement. There may be a complex combination of factors behind such a phenomenon. However, I believe that the above suggestions hold some important keys and are a good basis for further discussion of the colonization and early history of the Estonian Swedes. An important question is how much the Einbi study may be generalized. The answer has to be that this is impossible to know at this stage. However, the similar preconditions of these areas do not make it at all inconceivable that other localities in the Estonian Swedish settlement areas may have undergone a similar development. Only further studies will reveal if this is the case.

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Felicia Markus

VÄLIUURIMISED EESTIROOTSI KÜLAS EINBIS

Resümee

Aastail 1998–2001 tehti väliuurimisi Läänemaal Noarootsis eesmärgiga tundma õppida eestirootslaste maahõivet, nende kultuurmaastiku morfoloogiat ja vanust. Uuringud moodustasid ühe osa autori väitekirjast, mida koostatakse projekti raames "Eestirootslaste geograafia aspektid. Muutused ühiskonnas, maastikus ja kultuuriühendustes 800 aasta jooksul".

Eestirootslaste vähemusrahvas asustas eelkõige Loode-Eesti rannikualasid (joon 1). Senised uurijad on olnud seisukohal, et rootslaste immigratsioon leidis aset põhiliselt 13.–15. sajandi jooksul, pärast maa vallutamist sakslaste ja taanlaste poolt ning uute valitsejate eestkoste all. Vähestest ürikutest, kus mainitakse rootslaste kohalolu, pärinevad vanimad 13.–14. sajandist ning neid on kasutatud senises uurimistöös tihti. Varase maakasutuse iseloom on aga peaaegu täiesti teadmata. Seetõttu oligi projekti ülesanne vastava kaardimaterjali geograafilise analüüsi ja arheoloogiliste väljakaevamiste abil selgitada piirkonna esmaasustuse vanus ja iseloom, muutused maakasutuses ning eestirootslaste seosed nende muutustega.

Uurimispiirkonnaks valiti Noarootsi, eestirootsi asustuse vana ja keskne piirkond. Enne 1710.–1711. a katku mainitakse sealsete elanikena üksnes rootslasi. Piirkond paikneb Haapsalu külje all, kust pärineb üks vanimaid kirjalikke allikaid eestirootslaste asustuse kohta – seadusekogu (nn Haapsalu õigus) 1294. aastast või 14. sajandi algusest. Haapsalu vanimas ajaloos oli ilmselt tähtis roll sealsel sadamakohal, kusjuures linna lähistelt on leitud Skandinaavia päritolu 11.–12. sajandi hõbeehteid ja münte sisaldanud aare. Väljakaevamised toimusid Einbis – rootsi nimega suures külas, mida ilmselt 1550. aastatest pärinevas vanimas arveraamatus nimetatakse rootslaste omaks. Kohaliku traditsiooni kohaselt on Einbi vanim küla Noarootsis. Koht on pikka aega paiknenud mereranniku läheduses, kuid seal on ka kõrgemaid põllumajanduseks sobivaid alasid, mis tegid võimalikuks kestva püsiasustuse. Piirkonna arheoloogilised leiud olid seni aga äärmiselt napid. Oluliseks teguriks koha väljavalimisel uurimistööks kujunes ka asjaolu, et Einbi oli läbi aastasadade püsinud suhteliselt muutumatuna. Lisaks sellele on kõnealune küla üsna hästi dokumenteeritud: oluliseks allikaks on 1698. aastast pärinev kaart (joon 3), mis pakub ainulaadset teavet küla tollasest paiknemisest ning moodustab kultuurmaastiku retrospektiivse analüüsi lähtepunkti.

1999. ja 2000. a väliuurimistega Einbis püüti selgusele jõuda eeskätt 1698. a kaardil olevate kiviaedade vanuse suhtes. Enamiku kiviaedade uurimisel koguti nende alt või vahetust lähedusest dateerimiseks piisav kogus sütt. Selline süsi pärineb aedade rajamisele eelnenud maa raadamisest tule abil. Söeproovide alusel dateerimisel on omad probleemid ning eksimisvõimalused. Seetõttu on maakasutussüsteemide alguse ja arengu dateerimisel üldiste tendentside avastamiseks ja adekvaatsete järelduste tegemiseks oluline hankida terve seeria radiosüsiniku dateeringuid. Einbi välitöödel kogutud materjali vanusemäärangud võib jaotada kolme rühma: 10.–13., 14.–15. ja 17.–20. sajand.

10.-13. sajandisse kuulub kuus dateeringut ning seda aega võib tõlgendada järjepideva asustuse ja maakasutuse algusena Einbis. Viis vanusemäärangut saadi väljadelt A1 ja A2 (vt joon 3), mis tõendavad, et vanimad, üsna väikesed ja metsaga ümbritsetud põllud paiknesid just siin. Neli dateeringut on selgelt varasemad – 13. sajandist, näidates siinse asustuse algust mitte ainult enne kirjalikke allikaid, vaid ka enne võõrvallutust. Arheoloogilise materjali põhjal on küll raske otsustada elanike etnilise kuuluvuse üle, kuid asustuse ja maakasutuse järjepidevus, samuti küla maade fosfaatanalüüsi tulemuste geograafia, külanime rootsi päritolu ning asjaolu, et puuduvad eestlastele osutavad arheoloogilised leiud, viitavad sellele, et 10.-13. sajandil alguse saanud asustus arenes katkematult aegadeni, kui esimesed kirjalikud allikad mainivad rootsi elanikke. Tõsiasi, et rootslased asusid siia elama nõnda varakult, ei tohiks iseenesest olla üllatav. Liikumised ja kontaktid üle Läänemere leidsid aset kogu muinasaja jooksul ning teave olude kohta mere vastaskaldal oli arvatavasti hea. Võib oletada, et Läänemere teise kalda asukad külastasid jahi- ja kalameestena Eesti rannikualasid hooajati juba enne hilisrauaaega ning omandasid teatud õigusi nende territooriumide kasutamisel. Kasinate võimalustega aladele sobilikud harrastused, nagu kalastamine ja karjakasvatus, on läbi aegade olnud rohkem iseloomulikud eestirootslastele kui eestlastele. Rootslased võisid kõnealustele maadele püsivalt ümber asuda siis, kui see osutus neile vanadele kodustele asustusaladele jäämisest kasulikumaks. Uusasukaid aktsepteeriti arvatavasti seetõttu, et neid juba tunti varasematest aegadest ning et nende maakasutus ja majandustegevus ei häirinud kohalikke elanikke, kes paiknesid kaugemal sisemaal ja elatusid põlluharimisest.

14.–15. sajandi dateeringud osutavad tolle aja tegevustele külas, kusjuures üks neist määrangutest on ilmselt seotud maakasutussüsteemi muutumisega. Hulk dateeringuid on uusaegsed. See ei ole mõistagi üllatav, kuna küla on olnud pidevalt asustatud.

2001. a seminarkaevamistel Einbis loodeti saada rohkem informatsiooni nii esimese maahõive kohta 10.–13. sajandil kui ka sellele järgnenud muutuste kohta maastiku kasutamises. Tulemusi analüüsitakse.

Praeguseks on kogunenud materjali ka kõnealuse piirkonna asustatuse kohta enne 10.–13. sajandi maahõivet. Lisaks dateeringutele kiviaia alt ja Einbi külast ning õietolmudiagrammile Riguldist on Einbis 2001. a uuritud kolmest koldekohast saadud ka kaks dateeringut eelrooma ja rooma rauaajast. Edaspidi tuleb selgitada, milline seos on nendel varastel dateeringutel hilisema eestirootsi asustusega.