*Fennoscandia archaeologica X (1993)*

**Evert Baudou**[1]

# THE CONTINUITY OF IRON AGE SETTLEMENT IN OSTROBOTHNIA: A PROBLEM OF RESEARCH

In *Fennoscandia archaeologica* IX (1992) there is a review by E. Orrman of the study *Järnåldersbygd i Österbotten. En ekologisk-arkeologisk studie av bosättningskontinuitet och resursutnyttjande* (Iron Age Settlement in Ostrobothnia. An Ecological-Archaeological Study of Settlement Continuity and Resource Utilization) (Baudou *et al.* 1991). The study presents the findings of a research project carried out in the years 1986–1991 by E. Baudou, R. Engelmark and L. Liedgren at the Department of Archaeology, Umeå University, and U. Segerström and J.-E. Wallin at the Department of Ecological Botany, Umeå University. In the same volume of *Fennoscandia archaeologica* there is also an article by H. Kotivuori on the excavation at Kalaschabrännan in Malax 1987–1989. The excavation, led by L. Liedgren, was part of the project. In his review Orrman ends up claiming that the conclusions of the Umeå-project are all wrong, and Kotivuori arrives at the opinion that there are no new archaeological results at all except some aspects of the excavation at Kalaschabrännan.

The review and the article both deserve some attention since they raise questions of principle. These questions concern the aims and means to be used in research on prehistoric settlements. In this article I shall discuss methodological questions, and in the article following, the botanists Engelmark, Segerström and Wallin will deal with the ecological problems in detail. It is obvious that Kotivuori's and Orrman's ideas about method and theory are totally different from those of the members of the project. I have to begin by making clear the background of the project.

The point of departure was the problem of whether the decline in the number of finds from the Viking and the Crusade Periods in Ostrobothnia also reflect a settlement regression. A continuous inhabitation of a farm, a district or a region can be expected to leave traces of houses, graves, artefacts, and also of resource utilization. In practical terms, the question the members of the project had to ask themselves first of all was how the amount of money they had at their disposal could be used in the most efficient way.

The initial discussions took place in the spring of 1986. The Department of Archaeology at Umeå University had at that time devoted ten years to research on settlement archaeology in Norrland (Northern Sweden). This work had throughout been carried out in cooperation with palaeoecological experts. Palaeoecology was and is an integral part of both basic and advanced education at the Department of Archaeology. In the research project "Early Norrland" *(Norrlands tidiga bebyggelse)* there had been, as early as from 1968, a close cooperation between the Section of Ecological Botany, Institute of Biology, Umeå University and the Central Office of National Antiquities, Stockholm and the Department of North-European Archaeology, Stockholm University (Baudou 1977; Müller-Wille 1984: 160–164, 182–183). When the Ostrobothnian project began in 1986 it had thus been preceded by a cooperation between archaeology and palaeoecology (environmental history) in Norrland extending over a period of almost 20 years.

Assessing the potential of the four categories (remains of houses, graves, artefacts and indicators of resource utilization) as source material for new knowledge the members of the research team were agreed that the fourth category was particularly important. From Finnish archaeological research it was well known that finds of artefacts dating to the Viking and the Crusade Periods were few. Only a small number of graves have been found, and these outside the area where the earlier Iron Age periods are rich in finds. An important result concerning

[1] Department of Archaeology, Umeå University, S-901 87 Umeå, Sweden

resource utilization had been published (Tolonen *et al.* 1979; Vuorela's results had not yet been published). But the botanists in Umeå found that the interpretation of the Ostrobothnian pollen diagram given in the text by Tolonen *et al.* differed in an unacceptable way from the pollen diagram itself. To look for new archaeological material would demand too much time and money. To continue the study of resource utilization on the other hand, would be easier. We were agreed that most of the resources should be used for pollen analyses as the main method of studying the changes of settlement.

The second item in the research plan was an archaeological field survey on the Viking Age shore-level in a small part of the territory, a plan which was not carried out. In addition excavations of house constructions from the Merovingian and Viking Periods were planned. The intention was to study whether changes in the pattern of settlement and agriculture had occurred during the Late Iron Age (Baudou 1988, 15). The Merovingian part of the project was completed.

During the first phase of the project, 1986–1987, pollen analyses were carried out in areas we knew were rich in Iron Age remains. The result of three pollen diagrams which belong to this phase of the project was the hypothesis "that the rapid change in the natural environment and the natural resources was one major force that caused regular relocation of the dwelling sites" (Segerström & Wallin 1991, 84). During the second phase, 1988–1991, the hypothesis was tested in areas which the botanists chose on their own, following only ecological criteria, i.e. which areas could have offered possible sites during the Viking and the Crusade Periods for settlement with cultivation and ready availability of sufficient fodder and grazing resources. The hypothesis could not be falsified. It also proved possible, on the basis of a total of ten pollen analyses, to draw conclusions about the environmental changes during the greater part of the Iron Age. In this way the hypothesis became more generally applicable than we had anticipated (Segerström & Wallin 1991, 77). The results of an archaeological survey of change over time in the pattern of Iron Age finds was in accordance with the general ecological hypothesis (Baudou 1991a, 193 ff.).

Kotivuori's main criticism stems from his view of the nature of archaeology:

> Archaeology as a discipline becomes meaningless without its primary material of remains and finds. The results of the natural sciences are an important addition to our picture of the past, but their weight in comparison with archaeological material must be individually addressed in each case. (Kotivuori 1992, 72).

Kotivuori has not realized or accepted that the project started out from *a defined problem* concerning the settlement continuity during the Viking and the Crusade Periods. We are dealing here with *problem-oriented research.* Once we had decided to make ecological analyses the main method of investigation, and had learnt what results this investigation yielded, it was clearly our task to discuss the problem in terms of a specific source material, i.e. the traces of resource utilization which had been found in the form of pollen of cereals and pollen indicating grazing. If we could show that there had been permanent fields, there must have been permanent farms too. Therewith the problem concerning settlement continuity would be solved. It does not matter whether graves, artefacts and remains of houses have been found or not. *Why* the last three categories of sources are scarce or lacking is another problem.

The division of all our knowledge and our search for knowledge into the traditional disciplines of the universities is a crude but sometimes useful practice. Nevertheless, as reality confronts us with problems that often cut across several disciplines, modern research tries to cross the artificial borderlines between disciplines, and this is known as inter-disciplinary research. It is impossible to study the history of prehistoric settlement succesfully without inter-disciplinary research. The problem we investigated was the question of continuity or discontinuity of settlement. This problem, which is part of the great complex of problems concerning settlement history, can be solved with two scientific methods: pollen analysis and macrofossil analysis.

Kotivuori does not want to understand the project in this way, as is obvious from his text. From the partly excavated dwelling site at Kalaschabrännan in Malax there is one radiocarbon date. Kotivuori (1992, 71) considers this "neither comparable nor otherwise sufficient in view of the considerable costs and importance of the project". But Kotivuori does not mention the 25 radiocarbon datings from the pollen analyses (Segerström & Wallin 1991, 35). The pollen analyses were of crucial impotance in the project.

Kotivuori, in his article, makes a thorough survey of the archaeological finds from Kalaschabrännan. This he has also done in an earlier article (Kotivuori 1989). This is worthwhile and of importance for the research on Iron Age dwellingsites in Finland. But in this case the definition of

the concept "finds" should not be narrowly restricted to artefacts. Among the finds must also be counted the carbonized seeds of cultivated plants, arable weeds and meadow plants (Engelmark 1991, 86 ff.). According to Engelmark barley was the main crop. From Engelmark's summary in English I quote:

> The majority of arable weed seeds are from spring-germinating nitrophilous plants and this particular composition is produced almost exclusively in well-worked and well-manured permanent fields (Sw. *ensäde*). The ardmarks found in the excavation support the proposed interpretation. There are no indications of slash and burn culture among the seed material. (Engelmark 1991, 102).

With these and other results from the macrofossil analysis at Kalaschabrännan we can test the hypothesis built on the ten pollen analyses. The data obtainable from the two materials are fully consistent with each other. Since Kotivuori does not mention these results from the excavation he can say:

> It must be stressed here that the significant excavation results from Kalasar have no direct bearing on the discussion on settlement continuity in Late Iron Age Ostrobothnia. (Kotivuori 1992, 72).

Many scientists have written about the land upheaval in Ostrobothnia and its relation to the relocation of past settlements, as Kotivuori (1992, 71) also points out. But the project has shown for the first time and with scientific material, the close connection between settlement, permanent fields, the importance of natural hay meadows, shore-line displacement and the difficulties caused by peatlands developing. And before this project nobody had seen the regional settlement continuity.

Kotivuori (1992, 72) emphasizes that "it may be misleading to evaluate earlier archaeological results from today's perspective of mainly natural-scientific evidence". He adds that "the small number of artefacts cannot be attributed to chance or insufficient fieldwork; it also reflects a definite situation in the past". If the implications of the former sentence were accepted it would put an end to scientific development; *of course* earlier results must be evaluated from today's perspective. It does not matter from which discipline the results and the perspective come.

The latter sentence is astonishing. What characterizes archaeological Viking Period research in Ostrobothnia is precisely insufficient fieldwork. According to Kotivuori Ostrobothnia would be one of those few regions in the world, like for instance the Antarctic, where we are fairly certain that the poorness in archaeological finds reflects a definite situation in the past. With which method has it been possible to establish this as a fact? The many unexpected archaeological finds in areas earlier poor in finds all over the world during the last decades make it less probable that Ostrobothnia should occupy such a unique position.

We welcome Kotivuori's discussion of the archaeological finds from the Kalaschabrännan site, but we cannot accept Kotivuori's view of the project and his opinion on the relation between archaeology and natural science. The principle of inter-disciplinary research has to mean that both disciplines join in formulating the problems and interpreting the results, while each discipline works according to its own methods while the project is under way.

Orrman's review also contains methodological weaknesses, particularly in his use of historical sources. Orrman has, however, noticed that a crucial question which the project adressed was whether the cultivation took place in permanent fields or as slash-and-burn culture during the Iron Age in Ostrobothnia.

Orrman maintains that historical sources are important for the understanding of Iron Age cultivation. He mentions several examples of the importance of slash-and-burn cultivation from the 16th to the 18th century in different parts of Finland. Orrman (1992, 100) is of the opinion that Engelmark's study and interpretation of the cultivation at Kalaschabrännan "can be based only on a complete ignorance of available literature on the history of agricultural technology in Finland". "Information from documentary sources of the Middle Ages and early Modern Times is mostly ignored" by the botanists in the project (Orrman 1992, 100).

At first sight such arguments may perhaps seem convincing, particularly as historical parallels of this kind are very often used to support claims made regarding the character of prehistoric cultivation in Finland. Everyone knows, however, that one hundred years ago historians began to differentiate between two kinds of historical sources: first, remains of old events; second, traditions or reports on old events. The value of the second group is often diminished by various factors, and the value varies with the gap in time between the event and the document. Orrman's historical sources all belong to the second group in the sense that they record what happened. Officials have registered the information on cultivation. The pol-

len, on the other hand, are remains from the very cultivation, consequently a primary source. Orrman's sources are at least 500 years younger than the period which is the object of study. It is furthermore difficult to interpret the historical documents, because we are not always certain of the meaning of the terminology. The botanists interpret their sources on the basis of botanical evidence, which we know or can test.

Orrman (1992, 100) also refers to pollen analyses from other parts of Finland where arable farming and slash-and-burn methods are supposed to have coexisted "since the second half of the first millenium". It is to begin with, well known, that the conditions for agriculture vary considerably in different parts of Finland. What we are discussing are pollen analyses and macrofossil analyses from Ostrobothnia. Two other macrofossil analyses, with a considerable amount of seeds, have been published in Finland. As Engelmark (1991, 88) emphasizes, the analyses from Katajamäki in Salo (4th century) and Domargård in Karis (Viking Period), both situated in southwestern Finland, show that barley was the main crop. There are no indications of slash-and-burn culture. These results are not mentioned by Orrman. Engelmark (1991, 90) also states that pollen analysis is a too blunt instrument to distinguish between permanent fields and slash-and-burn cultivation, since pollen from arable weeds – which are important in identifying culture in permanent fields – are to a great extent carried by insects and are only in exceptional cases represented in the pollen sequences.

There are some other points which have to be clarified. In those parts of Ostrobothnia with which we are concerned the area under cultivation has continously grown from as far back as we can follow in historical sources. This expansion has taken place in the areas where the ancient remains would be. The increasing population needed all available fields and meadows, both old and new ones. With new cultivation methods and a technique for turning the peatlands into productive fields by burning *(kyttlandsbränning)* it was not necessary to move from the old shore-line to the new, as had been the rule during the Iron Age. Therefore the Viking Period remains have been more exposed to destruction than the earlier Iron Age monuments, which are to be found near the older shore-line.

Characteristic of the Iron Age settlement in Ostrobothnia is the continuity in the region. The well-manured, permanent fields, again, imply permanent farm-houses. It can only cause astonishment, then, to read that "the researchers of the project suggest that Iron Age settlement in Southern Ostrobothnia was highly mobile" (Orrman 1992, 99).

Another example of Orrman's highly individual way of reading *Järnåldersbygd i Österbotten* are the lines about the rune inscriptions in Vörå. Orrman (1992, 103) finds it surprising that the inscriptions are not referred to at all. The rune inscriptions, however, have no decisive importance for the problem of settlement continuity or discontinuity in Ostrobothnia. Therefore they are not discussed in the project.

Our results are not in agreement with the theories which have hitherto dominated. We have tested alternative interpretations (see Engelmark *et al.* in this volume), but the tests have not given any support to the alternatives. In his review Orrman has not presented any valid arguments against our results. Thus our conclusion remains that Iron Age Ostrobothnia is characterized by regional settlement continuity. This is a conclusion which applies to the Iron Age generally as well as specificially to the Viking and the Crusade Periods.

Recent archaeological studies have been increasingly interested in the problem how we acquire our knowledge of prehistoric times (e.g. Shanks & Tilley 1989 with the discussion and literature referred to; Baudou 1991b). Which factors influence and determine our interpretations? In Finland the slash-and-burn culture has played an important role during historical times, as the written sources indicate. Has this well-known fact maybe influenced the view of prehistoric agriculture? Have the images disseminated by Finnish literature and art acquired a hold not only on the popular imagination but on the assumptions about agriculture in archaeological studies as well? Eero Järnefelt's famous painting *Sveden* ("Burn-beating") from 1893 has entered the international archaeology with the plate Vc in J.G.D. Clark's *Prehistoric Europe. The Economic Basis* (1952). Not only Finnish archaeologists and historians have looked upon slash-and-burn culture as an axiom, when they are dealing with prehistory. But this view can not be accepted without proof or relevant argument, as our investigation indicates. Are the researchers influenced by a kind of Finnish national romanticism? Why have the researchers not engaged in the standard source criticism in their use of historical sources? In Finland as in other countries it would certainly be a useful archaeological investigation to study the archaeologists and their research in connection with the leading ideas of contemporary society.

*Acknowledgement*

I am grateful to Ian Gurney, lecturer in English at Tampere University, for improving my English.

REFERENCES

Baudou, E. 1977. Forskningsprojektet Norrlands tidiga bebyggelse (NTB). *Humanistisk forskning* 1977, nr 1:16–19.

Baudou, E. 1988. Fanns en fast bygd i Österbotten under vikingatiden och korstågstiden? *Studia Archaeologica Ostrobotniensia* 1987: 9–19.

Baudou, E. 1991a. Kontinuitetsproblemet i Österbottens järnålder. (With an English summary.) *Studier i Österbottens förhistoria* nr 2. *Acta Antiqua Ostrobotniensia:* 149–201.

Baudou, E. 1991b. Hur den arkeologiska forskningen styrs i Sverige. *Arkeologi och makt. University of Lund. Institute of Archaeology. Report Series* No. 40: 75–84.

Baudou, E., Engelmark, R., Liedgren, L., Segerström, U. & Wallin, J.-E. 1991. *Järnåldersbygd i Österbotten. En ekologisk-arkeologisk studie av bosättningskontinuitet och resursutnyttjande* (Iron Age Settlement in Ostrobothnia. An Ecological-Archaeological Study of Settlement Continuity and Resource Utilization). *Studier i Österbottens förhistoria* nr 2. *Acta Antiqua Ostrobotniensia.*

Clark, J.G.D. 1952. *Prehistoric Europe. The Economic Basis.* Methuen, London.

Engelmark, R. 1991. Miljö och jordbruksekonomi vid Kalaschabrännan, Malax. (With an English summary.) *Studier i Österbottens förhistoria* nr 2. *Acta Antiqua Ostrobotniensia:* 86–102.

Engelmark, R., Segerström, U. & Wallin, J.-E. 1993. The palaeoecological record of cultivation in Ostrobothnia during the Iron Age. *Fennoscandia archaeologica* X: 70–75.

Kotivuori, H. 1989. Kalaschabrännan, Malax: Iakttagelser om fyndmaterialet på en järnåldersboplats. *Studia Archaeologica Ostrobotniensia* 1988: 57–68.

Kotivuori, H. 1992. Dwelling-site finds from the Middle Iron Age fieldwork at Kalaschabrännan in Maalahti, Southern Ostrobothnia 1987–1989. *Fennoscandia archaeologica* IX:57–74.

Müller-Wille, M. 1984. Siedlungsarchäologische Forschungsprojekte in Schweden. *Praehistorische Zeitschrift* 59. Band 1984 Heft 2: 145–187.

Orrman, E. 1992. Review of Baudou *et al.* 1991. *Fennoscandia archaeologica* IX: 99–106.

Shanks, M. & Tilley, C. 1989. Archaeology into the 1990s. *Norwegian Archaeological Review* Vol. 22, No. 1: 1–54.

Segerström, U. & Wallin, J.-E. 1991. Naturresurserna och odlingen under järnåldern. – Resultat av pollenanalyser. (With an English summary.) *Studier i Österbottens förhistoria* nr 2. *Acta Antiqua Ostrobotniensia:* 28–85.

Tolonen, K., Siiriäinen, A. & Hirviluoto, A.-L. 1979. Iron Age cultivation in SW Finland. *Finskt Museum* 1976: 5–66.