Approaches to Swedish Prehistory

A spectrum of problems and perspectives in contemporary research

edited by
Thomas B. Larsson
and
Hans Lundmark

BAR International Series 500
1989
B.A.R.
5, Centremead, Osney Mead, Oxford OX2 0DQ, England.

GENERAL EDITORS
A.R. Hands, B.Sc., M.A., D.Phil.
D.R. Walker, M.A.

BAR -5500, 1989: 'Approaches to Swedish Prehistory'

Price £24.00 post free throughout the world. Payments made in dollars must be calculated at the current rate of exchange and $8.00 added to cover exchange charges. Cheques should be made payable to B.A.R. and sent to the above address.

© The Individual Authors, 1989
ISBN 0 86054 641 1

For details of all new B.A.R. publications in print please write to the above address. Information on new titles is sent regularly on request, with no obligation to purchase.

Volumes are distributed from the publisher. All B.A.R. prices are inclusive of postage by surface mail anywhere in the world.

Printed in Great Britain
GEOGRAPHICAL APPROACHES TO FIELD SYSTEMS IN SWEDISH PREHISTORY AND EARLY HISTORY

By Mats Widgren *

The study of prehistoric field systems in Sweden traditionally mainly been carried out by geographers. Retrogressive approaches have therefore played an important role. Starting with the 17th century cartographic evidence the origins have been traced by morphogenetic, metrological and (from the 1960's) archaeological field methods. This paper presents some of the results.

During the 1970's most studies of field layout and settlement were seen as mainly caused by the progression from one extensive farming system to a more intensive one. Two factors are now working against this explanatory approach. First, there is not yet - in spite of much research - the empirical evidence to interpret the Late Iron Age development (A.D. 500 to 1000) as mainly caused by intensification. Second, most of the new localities now found in southern and western Sweden do not conform to any stage in this unilinear model.

In future theoretical work more emphasis will have to be laid on social structure, field systems as manifestations of property rights and on the regional dimensions of farming system development.

Introduction

When I tried to explain to a geographical colleague why I was supposed to give a paper on field systems at the "Theoretical Archaeology Group" [TAG 1986, London] he asked: "Field systems - what is theoretical about them?". His question was based on the fact that field systems studies within geography have long been heavily empirically oriented. This paper is, however, not an argument for a theory of field systems. I do not think a theory for field systems can be formulated which is separated from social theory in general. More than on theory the emphasis of this paper is rather on the general explanatory frameworks within which studies of early field systems have been carried out in Sweden during the last ten to fifteen years.

In Sweden, the study of prehistoric and early medieval field systems has mainly been carried out by geographers and only to a minor degree by archaeologists. Furthermore, most of the studies are carried out by human geographers trained at the University of Stockholm.

Hopefully, the 1980's will, in retrospect, be seen as a period when this situation was changed and the group of people engaged in this branch of research was widened.

* Department of Human Geography, University of Stockholm
The archaeologists of the Survey of Ancient Monuments (carried out by the Central Board of National Antiquities) have drastically increased their competence within this field and a number of reports of their recent findings have been published during the last five years (e.g. Arkeologi i Sverige 1982-83). As an effect of their recordings, the number of archaeological rescue investigations of such localities will also be increasing. Nevertheless, it must be pointed out that archaeological university research within this field is practically non-existent.

The disadvantages of this institutional framework are obvious. Concentration of experience and knowledge to one department hampers the critique and discussion. Fortunately, the research we produce has nevertheless been met with scepticism and well-formulated critique from archaeologists (Ambrosiani 1968; Baudou 1973). Much more interaction and critique would, however, be profitable for the research.

Some Retrospective Notes on Field Systems Research

The explanatory framework within which field systems studies have been carried out should thus be seen in the light of the history of the subject of geography. By tradition the geographical approach to landscape history was retrospective. It was the lay-out of the contemporary landscape that was to be explained. From being initially retrospective (explaining the present landscape by historical geographical studies) the approach has now rather become regressive, aimed at studying the past for its own sake, but taking its methodological starting point in the present. The present - or the early modern landscape thus still forms an important factor in most geographical inquiries into medieval or prehistoric landscapes.

This regressive morphogenetic method of studying the landscape was brought to Sweden from Germany ("Rückschreibende Katasterauswertung"). From the 17th and 18th century cadastral maps, conclusions were drawn as to the field and settlement patterns in the early medieval times. By using this method it was possible to organise the empirically documented types of rural settlement into a unilinear sequence of stages in village development.

In Sweden this theoretical work was developed into a coherent model of field systems, taxation and early territorial organisation by the late Professor David Hannerberg. In his studies the main empirical material was still only the 17th and 18th century maps, together with some earlier documentary evidence, but through deductive reasoning on taxation and measurement he built up a model ranging back to the first centuries A.D. Focus is on the development of the single settlement unit, its assessment and its role in a wider territorial organisation (Hannerberg 1977, a short presentation in English was published in 1976). To give you an idea of the types of work he did, one could perhaps compare his work with that of Glanville Jones on the early territorial organisation of England and Wales (Jones 1961).

In retrospect one can say that the last twenty years of geographical research on the field systems has been aimed at testing the different steps in this model in various regions of Sweden with historical and archaeological methods.

The basis of Hannerberg's model was a simple sequence of formal settlement types and field systems, but he also pointed out the dynamic factor in the interrelations between the different factors. He saw changes in the system of rotation as the independent factor causing changes in field systems, settlement and holding layout within the agrarian communities. I have summarised these basic relations in a simplified scheme (Fig. 1).

The archaeologist Stig Wellinder further developed parts of this model. The different stages in Hannerberg's scheme could easily be seen as steps of ecological efficiency of different farming systems. He introduced the Boasup view on population growth and
agrarian change into a coherent model, incorporating also the long term development in
the landscape interpreted from pollen-diagrams. Population increase was seen as the
driving force behind the empirically observed critical points in the settlement
development (Welinder 1975).

Two basic assumptions are implicit in these and the subsequent studies. The first is
that the main turning points are associated with spatial reorganisation, aiming at
increased agrarian production. The second underlying assumption is that this
intensification has been achieved mainly by climbing up the ladder formed by the four
types of field system (Fig. 1), which have been identified. Problems relating to these
turning points have been in the focus of subsequence studies:

1. The assumed introduction of permanently cropped and manured infields
during the first few centuries A.D.
2. The contraction and change of settlement location during the 6th and 7th
centuries A.D.
3. The formation of open, sub-divided fields and the concentration of
settlement into villages during the 11th to 13th centuries.

In the following I will try to summarize some of the empirical results relating to this
model of successive intensification, mainly focussing on the period 500 B.C. to A.D.
1000. The following text is partly based on Widgren (1987a), where a detailed bibliography covering the period 1981-1985 also can be found.

Gotland: Introduction of Continuous Cropping in the First Centuries A.D.

In the 1970's the most important event within this field of research in Sweden was the discovery of large areas of "celtic" fields on the island of Gotland. Not only were they the first large "celtic" field systems to be found in Sweden, they were also the earliest dated fields (500 B.C. to A.D. 200) found up to that time. Furthermore, and perhaps most important: they were overlain by other structure, consisting of stone walls and settlements from the directly succeeding period. The evidence thus made possible a study of agrarian change during a rather short period of time. The first system indicated extensive cultivation of a large area while the second was connected with small intensively cropped fields, each associated with a family farm. The factor behind this agrarian change, which was also supposed to have social effects, was seen in population increase (Lindquist 1974). These arguments were further developed at a regional level by Carlsson (1979).

When it comes to the events taking place around the birth of Christ, these results give full support to the idea of farming intensification. The basic components in the fossil landscape and their spatial arrangement are distinctively different between the two types of superimposed landscapes. While the arable fields are the only evidence from the first phase, the second is characterized by cattle paths, pens and long houses with a cattle compartment, which all are evidence of intensive animal husbandry, where the gathering of manure may have been a natural part. Furthermore, Carlsson was also able to show that the small fields tilled during this later Roman Iron Age phase, due to their manuring, had a distinctly higher organic content than fields from the previous phase. Only a small area of the enclosed land was used for arable fields, while the larger parts were used for haymaking.

An implicit assumption for the investigations on Gotland was the idea that the settlement changes during the next turning point - the abandonment of a large number of houses during the 6th and 7th centuries A.D. - was caused mainly by the introduction of a new field system and a new type of buildings. The idea was that what seemed at first glance to be a radical contraction of settlement was in fact an intensification of agriculture. Carlsson succeeded in proving settlement area continuity in a number of localities, but he did not succeed in proving intensification and the introduction of the two-field system as the causative factor behind the settlement changes. Most inference on change has been interpreted from retrogressive analyses of the 17th century maps, while the actual pattern of land use and settlement is seldom recorded from field evidence. With the aim of solving this problem, Dan Carlsson is now working on a project at Fjäle, a deserted farm in Alva on Gotland. His intention is to follow an isolated farm from the Early Iron Age up to its permanent desertion in the 14th century. Mapping the deserted fields and with radiocarbon dates from clearance horizons he has reconstructed the development of the farmland in four stages.

The preliminary results point to settlement continuity in the area but also to an only gradual increase of the arable. This has made Carlsson revise his earlier conjectures on the introduction of the two-field system as one of the main explanatory factors behind settlement changes on Gotland during the first millennium A.D. (Carlsson 1983; 1985).
Fig. 2. Areas and localities mentioned in the text.

Östergötland: Social and Territorial Changes in the 6th to 8th Centuries

The stone wall enclosures that characterised Gotland in the period A.D. 200 to 500 can also be found in the Swedish provinces of Öland, Östergötland and Uppland. Their main features are long, low walls or banks of stone. The walls form large irregular or sometimes rounded enclosures, within which can be found varied types of land. These areas were mainly used as hay meadows while smaller parts of this infield land served as arable.

The first modern investigation of this type of agrarian landscape was carried out by the geographer Sven-Olof Lindquist (1968) in Östergötland. He dated the emergence of this agrarian structure to the first centuries A.D. My own field investigation in the same province confirmed these datings, and with pollen analyses it was also possible to trace different aspects of this profound intensification and expansion of agriculture in the region. The fossil landscape provides evidence of the introduction of an infield system with enclosed meadows, making possible the integration of arable farming and cattle breeding within the same farming system. From pollen-analytical evidence it was further possible to show that the cultivation of rye and the transformation of alder carrs into pasture or hay meadows also dated to this same period. The landscape was transformed by the new farming system and soon became fully colonised. All results support the idea that the first few centuries A.D. were characterised by intensification and increased ecological efficiency (Widgren 1983). The long term changes in settlement and social organization occurring during the period 500 B.C. - A.D. 500 are also discussed in the papers by Larsson & Lundmark and Lundmark in this volume.

At this time settlement in the area consisted of large village-like complexes, consisting of a number of isolated farmsteads knit together by a common system of cattle paths and stone-walls. Within such a complex the farms and the arable were probably held individually, but the long cattle paths indicate a pastoral organisation which
Fig. 3. "Celtic" fields in Vinarve, Gotland. The blockshaped fields from pre-Roman and early Roman Iron Age are overlain by house-foundations and enclosures dating to later Roman Iron Age and Migration Period. From Lindquist 1974. See also Windelhed 1984.

encompassed all farms in the complex. The maintenance of the ecological balance was thus dependent on three different levels of decision: the individual farm, a farm complex with common paths and finally some kind of body regulating the use of large pastures common to many such complexes.

In the period A.D. 400 to 700 agrarian production declined in the area. However, the crisis did not lead to the establishment of a radically new farming system at the beginning of the Late Iron Age. The actual land use pattern after this period of change, seems, according to the pollen-diagrams, to have been the same. The expected effects of the restructuring of farming technology and economy cannot be documented until the 11th century, which is the earliest time the two-field system can have been introduced. Instead, the most evident result was the establishment of new basic territories. The former levels of decision over land were changed. The large complexes with common cattle paths were split up and instead each farm or small hamlet demarcated its own
Fig. 4. Settlement and land use in the Fläret area, Östergötland c. 100 B.C. to A.D. 500. Widgren 1983.

territory, sometimes even by the building of cemeteries on the former common cattle paths. Thus, the changes in landscape were not at all associated with intensification in an ecological sense. The most evident manifestation of the changes were instead connected with changes in property rights and in the levels of decision over land.
Fig. 5. In the 6th and 7th centuries the old farm complexes were split up and new, smaller territories were demarcated. A model of the development in eastern Östergötland. Widgren 1983.

The Origin of Sub-divided Fields

According to the initially discussed model (Fig. 1), sub-division of fields and the establishment of open fields with a common rotation was a phenomenon that developed in medieval times together with the emergence of larger settlement concentrations. This has also been confirmed by both documentary and field evidence. The latest contribution is the monography on the Lake Mälaren district by Ulf Sporrong. He carried out systematic research on the early maps and of relics of strip-fields. He has also presented a series of radiocarbon dates from different features in existing and/or deserted villages. These datings indicate that, in a primary stage, the whole field area was delimited (datings to the period A.D. 600 to 1200). The emergence of strip-fields - indicating subdivided fields - can be dated to a later stage (radiocarbon datings to the period A.D. 1100 to 1600; Sporrong 1985, 1986).
But the discussion on the origin of sub-divided fields has also recently got new fuel as a result of the finds of regularly planned strip fields of a much earlier origin. As a part of a project on the origin of subdivided fields in Western Sweden some surprisingly old planned fields have been investigated in the southern parts of the province of Västergötland. While searching for partially deserted medieval sub-divided fields I came across a type of large fossilised fields consisting of long strips bounded by banks of stone and earth (Widgren 1987b).

The first locality to be discussed here is the hamlet of Gisslarp, Nittorp parish (province of Västergötland). Superficially seen, this locality showed all the aspects of a partially deserted, probably medieval open field. A plan of the central part of the fields can be seen in Fig. 6. The type of boundaries - earthen banks with many stones - and the breadth of the strips, between 7 and 30 metres, has many parallels with the radiocarbon dated Medieval and later fields at Brunnsbo (Lindqvist 1976) and Ålse (Sporrong, pers. comm.) less than a hundred kilometers further north in Västergötland. But the further analysis in the field showed that the parallel banks were the oldest identifiable phase in the locality. Within the locality could be found smaller fields that - according to map evidence - were tilled in the 18th and 19th centuries. These areas had no morphological similarities with the underlying land division. While the younger fields may well have been tilled by an ard, the underlying land division takes very little consideration of slope and the land is generally very poorly cleared of stones. One clearly gets the impression that it has never been tilled by a traction implement, rather by a hoe or some other hand implement. The strip fields on this locality thus represent a clearly older layer of the agrarian landscape than that documented on the early maps. They represent another type of dividing the land and probably also another technique of tilling.

Fig. 6. Strip-fields dating to the early Iron Age. Gisslarp, Västergötland. Widgren 1987b.
Fig. 7. Field boundaries in Månstad, Västergötland. Radiocarbon dates c. 500 B.C. to A.D. 200. Widgren 1987b.

The stratigraphy between larger Bronze Age or Early Iron Age cairns and the fields gives a further clue to their dating. The presence of large cairns in the central parts of the fields at Gisslarp, as well as at a number of other localities, is in itself an indication of a possible age - but there are also signs of stratigraphy: some of the cairns do in fact seem to be constructed on top of previous arable fields.
systems, my argument here is, however, that ecological models have successively been proven unsatisfactory not only on the grounds of taste or development in contemporary society but rather on the basis of confronting the model with empirical work. The results of the investigations have clearly shown the need to incorporate social and political aspects of the agrarian society in order to explain the development of field systems.

References

Hannerberg, D. Kumlabyden IV. By, gård och samhälle. Kumla.

