

BÄLINGE MOSSAR.

HUNTERS AND FARMERS DURING THE EARLY AND MIDDLE NEOLITHIC IN CENTRAL SWEDEN

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Bälunge mossar (Bälunge bog), approximately 25 km NW of Uppsala in the east of central Sweden, is an extensive area of drained marshland. It was an arm of the sea during the Stone Age. At present eight Stone Age sites are known on the shores of this bay. They are grouped round ancient sounds, and all except the most westerly belong to the Pitted Ware Culture, a Middle Neolithic hunting culture from the third millennium B.C. in which seal-hunting played an important role. As a result of pronounced land upheaval the sites of the Pitted Ware Culture at Bälunge mossar are now situated well up on dry land, approximately 40 m a.s.l.

Bälunge mossar is divided into two basins, Stormossen in the west and Norra and Södra myren in the east. Scientific investigations carried out at the beginning of this century showed that Stormossen was a lake for a long time after the emergence of the area from the sea. In contrast, the lake which was to become Norra and Södra myren was filled more or less immediately after isolation from the sea. When the lakes had been filled they were colonized by forest which later developed into fens and bogs as a result of waterlogging, believed to have been caused by the climatic deterioration between the Bronze Age and Iron Age c. 500 B.C.

An atmosphere of strange desolation prevails over Bälunge mossar. The scenery is virtually untouched by modern development. It has an air of the prehistoric, bringing to mind the ancient Stone Age landscape. The vast, black, rain-drenched marshlands become sea and the protruding morainic headlands are transformed into inviting camping-places.

Most sites were discovered in connection with the cultivation of extensive drained areas of land at the beginning of the twentieth century. Gunnar Ekholm carried out small-scale investigations of some sites in the 1910's and 1920's; Ekholm (1918, 1929). In recent years I have myself examined the sites at Sotmyra (1969–70), Vadbron II (1972–73) and Anneberg (1983–84); Segerberg (1978).

Vadbron II is to be found in the inner part of the ancient bay. It is situated on the southern side of a moraine hill which slopes steeply down to the bog. 150 m², spread over an area ranging from the site's highest to its lowest point, were excavated. The occupation layer was 20–60 cm deep. It consisted of dark humus in the lower part of the site, while yellow sand mixed with stones and gravel comprised the occupation deposit in the upper part of the site. Two hearths were the only structures. One of the hearths was situated at the lower edge of the site. All soil was sieved. Small finds consisted primarily of potsherds (54 kg) but also of quartz flakes, burnt and unburnt



Fig. 1. View of Bälunge mossar. Photo by the author.

bones. The decoration of the potsherds shows that the site belongs to an early phase of the Pitted Ware Culture.

Three sites are gathered round the next sound which looks out onto the ancient sea, 3.5 km NE of Vadbron. The investigated site at Sotmyra occupied a well-sheltered position on a morainic headland facing south, 60 m² of an apparently undisturbed occupation deposit with a depth of 30–40 cm were examined. In the lower part of the south the occupation layer consisted of dark humus and contained a large amount of small finds. In the upper northern part of the site the occupation layer consisted of yellowish-red sand mixed with gravel and stones. It produced far fewer small finds than the southern area. All the soil was sieved. The small finds consisted of c. 60 kg potsherds, a simple shafthole axe and a spearhead of stone, a slate chisel, a few flint flakes, a large quantity of quartz flakes and 1.3 kg burnt and unburnt bones. The decoration of the potsherds shows that this site, like Vadbron II, belongs to an early stage of the Pitted Ware Culture.

Johannes Lepiksaar has analysed the osteological material from the sites at Vadbron II and Sotmyra. The following information is based on his reports. 15 different animal species are represented in the Vadbron material. 10 are mammals (cattle, domesticated sheep, elk, pig, dog, badger, otter, beaver, water-vole, ringed seal), 3 birds (goosander, mallard, great crested grebe) and 2 fish (pike, perch). A calculation of the significance of each species for the diet of the inhabitants of Vadbron II reveals that the elk seems to have accounted for more than half of their meat consumption while half come from sheep, pig and to a limited degree from seal. In other words, hunting played an important role in the economy but it was substantially supplemented by husbandry. In contrast to the case on many other Pitted Ware sites, the hunting of forest game also seems to have been more important than hunting at sea.

The osteological material does not only contain information of a pure economic nature. It is able, for example, to confirm the view that the site was situated in the inner part of a bay and that it had restricted contact with the open sea. It is only the seal bones which give any indication of contact with the sea. There is no trace of

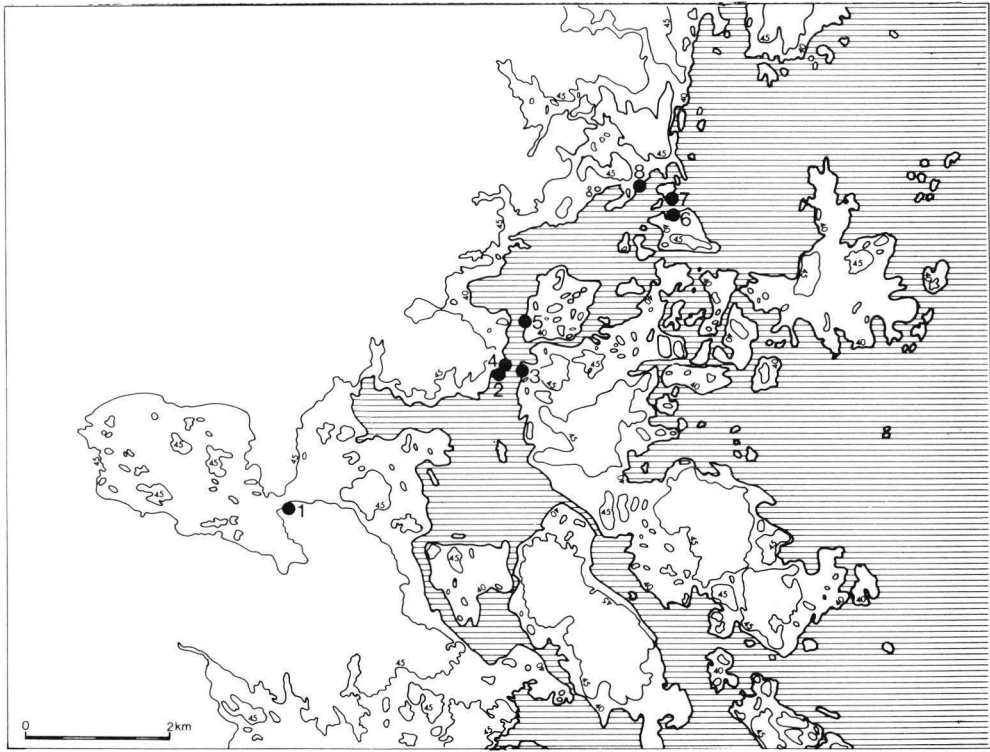


Fig. 2. Map of Bälings mossar. Position of following sites marked: 1) Anneberg. 2) Ytterbyn. 3) Vadbron I. 4) Vadbron II. 5) Broddbo. 6) Persbo. 7) Skinnarbacken. 8) Sotmyra. — *Stormossen* is situated to the west of Anneberg. *Södra myren* is between Anneberg and Vadbron. *Norra myren* is between Vadbron and Sotmyra. The approximate shorelines at the time of the Early Neolithic settlement (45 m a.s.l.) and at the time of the Pitted Ware occupation (40 m a.s.l.) are marked by thin and thick lines respectively.

seabirds or saltwater fish. On the contrary pike, which is primarily a freshwater fish, seems to have been caught most. Elk bones indicate that the forest was near by. There is some reason to believe that the site was seasonally occupied during the warmer part of the year. The great crested grebe is, for example, a migrant bird which only very seldom spends the winter in the southern part of the country. The small quantities of seal bones in comparison with other central Swedish Pitted Ware sites may be due to the fact that it was more difficult to hunt seal in the summer than in the winter when they could be caught on the ice during the breeding season.

At Sotmyra, the dwelling place furthest out towards the open sea, remains of 15 species have been recovered. Nine are mammals (*homo*, cattle, domesticated sheep, elk, pig, brown bear, dog, ringed seal and beaver), 4 birds (goosander, golden eye, mallard and whooper swan) and 2 fish (pike and perch). Ringed seal accounted for the majority of seal bones which could be identified. Seal-hunting seems to have been the principal occupation of the people at Sotmyra. As far as forest game is concerned, elk probably played the most important role. Remains of pig also occur in relatively large numbers. Seal-hunting probably took place during the winter, partly because it is easiest to catch ringed seal when they are on the ice for breeding and partly because the bird species are restricted to ducks which do not



Fig. 3. The ancient sound at Anneberg, Oxsättra. The Early Neolithic settlement is situated on the elevation to the right of the bridge. Photo by the author.

migrate. However, Lepiksaar is uncertain whether this is enough evidence to support the view that the site was only occupied during the winter; Segerberg (1978).

A later phase of the Pitted Ware Culture is also represented at Bälunge mossar. The site at Skinnarbacken, which is situated on the same sound as Sotmyra, has yielded pottery of a later type than that which has been recovered at the other sites. Skinnarbacken has only been surveyed, not excavated.

So much for the Pitted Ware Culture at Bälunge mossar. A trial excavation in 1983 revealed that the most westerly site, Anneberg in Oxsättra, 45 m a.s.l., is older than the other localities in the area. It is most similar to the Early Neolithic sites of the Vrå Culture, the central Swedish branch of the Funnel Beaker Culture from the fourth millennium. B.C. The Vrå Culture is said to be based on farming. For some reason it disappeared at the beginning of the Middle Neolithic when the arrival of the bearers of the Pitted Ware Culture meant reversion to a hunting economy.

In other words, Bälunge mossar is an exclusively Stone Age environment containing settlement sites from different periods. It offers unusually good possibilities for a more detailed study of the cultural development during the time in question. Why did the early farming culture disappear, and how did the Pitted Ware Culture arise?

In order to shed light on these questions, an excavation on the site at Anneberg was undertaken during the summer of 1984. The excavation of 1983 had revealed remarkably thick cultural deposits, in the central part of the site as much as 60 cm, of which the lower 30 cm were undisturbed by ploughing. Apart from a rich collection of artifacts, the deposits yielded considerable amounts of organic material, mostly animal bones. In 1984 an area of 33 m² in this part of the site was excavated. The undisturbed occupation layer was dug by the square metre in 5 cm layers. The



Fig. 4. All earth from the excavation at Anneberg by-passed through a wet sieve. Photo by Sirpa Kärki.

purpose was to create a base for the stratigraphical study of artifacts in the occupation layer. No visible stratigraphy could be observed. The plough layer consisted of brown clay-rich humus with isolated fire-cracked stones. In the occupation layer the soil became darker. It consisted of sandy, clay-rich humus, blackish in places, and sometimes sooty. This layer produced large quantities of fire-cracked stones and small finds. Under the occupation layer, which became successively lighter towards the bottom, postglacial sediment in the form of fine sand and clay was uncovered in the major part of the excavated area. In the western part of the investigated area the occupation layer, which was here more or less identical with the plough layer, rested directly on till. It would therefore seem that the blackish occupation layer with its large quantity of fire-cracked stones was deposited in a small clay-filled hollow in the moraine.

All the soil was removed with a trowel and sieved. Finds included pottery, flakes and tools of flint, quartz and slate, grinding blocks of sandstone, burnt and unburnt bones, carbonized hazelnut shells, charcoal etc. The archaeological artifacts will make it possible to ascribe the site to a defined culture. A multi-faceted battle axe together with tools and flakes made from thin-butted flint axes have, for example, been found.

As a result of the inclusion of stones, humus and clay in the soil, only isolated larger finds were discovered during the actual process of trowelling. Consequently wet-sieving turned out to be the only effective method of discovering the finds at all. The undisturbed occupation deposit was passed through two sieves. The upper sieve had a mesh size of 4 mm and the lower 2 mm. The smallness of the finds and the large amount of, for instance, bones made this careful sieving necessary. Thousands of fish vertebrae have been recovered from the sieve. Large quantities of soil have been retained for macrofossil analysis. The results of flotation, which has only just been started, show that it will produce large amounts of charcoal.

The following analyses are being undertaken at the moment or are planned for the future:

- 1) *Osteological analyses*
Per Ericsson.
- 2) *Macrofossil analyses* for identification of carbonized organic material such as seeds and grain will perhaps give some indication of the importance of agriculture. Ingemar Pålsson.
- 3) *Microfossil analyses* (diatoms and pollen) are included in the study of the relationship between the shoreline and the site. They also provide information about vegetational development and possibly cultivation in the area. Urve Miller, Ingemar Pålsson.
- 4) *Radiocarbon and thermoluminescence analyses* for the dating of the site. Only a few radiocarbon dates are available due to the absence of suitable material on Early Neolithic farming sites. Radiocarbon analyses by Ingrid U. Olsson.

The osteological material from the Anneberg site is at present being analysed. This investigation has already revealed an interesting tendency. Remains of cattle show that husbandry was practiced, but otherwise there appears to be a preponderance of hunted game. This indicates that hunting made the major contribution to the animal food supply whereas stock-raising was of secondary importance. The possibilities for good hunting and fishing in the area have apparently attracted people even before the time of the Pitted Ware Culture.

Organic material is virtually absent on the previously investigated Early Neolithic sites in central Sweden. It is present indirectly in the form of impressions of cereal grains and grape seeds in the pottery from some of the sites in Södermanland examined by Sten Florin (1958). Stig Welinder's excavations in Närke have yielded carbonized cereal grains and a small amount of bones; Welinder (1982). This is all. In spite of the almost complete lack of osteological material, Welinder suggests that the Early Neolithic Funnel Beaker Culture in central Sweden should not be seen as a pure farming culture. He maintains that hunting probably played an important role in some places.

The excavation of Anneberg in Oxsättra should be largely seen in this context. An Early Neolithic site with well-preserved occupation horizon on the outskirts of the Funnel Beaker Culture's domain. The Early Neolithic Funnel Beaker Culture in central Sweden has previously been seen as a pronounced farming culture. The site at Anneberg has produced material which will form an important base for discussion – the bone fragments. The analysis of them has only just begun, but it can already be revealed that cattle are represented although hunted game seems to predominate.

In the geographically limited and ecologically homogenous environment, which Bälunge mossar represents, there are sites from different periods. Both the Funnel Beaker and the Pitted Ware people placed their sites on the shore of narrow sounds

which open out into the nearby sea. The central aim of the above described Stone Age project is to clarify the significance of the various subsistence forms during the different periods, i. e. how much have subsistence forms changed and why have they done so?

REFERENCES

- Ekholm, G., 1918. Två nyupptäckta uppländska stenåldersboplatser. *Upplands fornminnesförenings tidskrift* 8, fasc. 33.
- Ekholm, G., 1929. De uppländska boplatssfunden kring Bälunge mossar. *Fornvännen* 24.
- Florin, S., 1958. *Vråkulturen. Stenåldersboplatserna vid Mogetorp, Östra Vrå och Brokvarn*. Stockholm 1958.
- Segeberg, A., 1978. Stenåldersboplatser i Uppland. Nya utgrävningar vid Bälunge mossar, Tibble i Björklunge och Torslunda i Tierp. *Uppland 1978*.
- Welinder, S., 1982. The hunting-gathering component of the Central Swedish Neolithic Funnel-Beaker culture (TRB) economy. *Fornvännen* 77.