PALAEOECOLOGICAL/ARCHAEOLOGICAL CORRELATION - AN EXAMPLE FROM GÄVLE, SWEDEN

Magnus Elfwendahl, Ingemar Påhlsson

ABSTRACT

This paper will give some examples of how macrofossil analysis can show archaeologists, why finds have formed concentrations in what seems to be homogeneous cultural layers from the late medieval period. The macrofossil investigation may suggest other activities within the site area, in addition to those interpreted on the basis of the archaeological remains.

Introduction

Gävle is situated in the province of Gästrikland, in the innermost part of the bay Gävlebukten on the Swedish east coast. Gävle was the northernmost town in medieval Sweden, and it has been suggested that an advantageous position with regard to communication and trade determined the rise and development of the town, which received its charter in 1446. Gävle is, however, mentioned earlier in written sources, the first time in 1413.

From written sources Gävle seems to have been a trading community at the end of the 15th century. During the 16th century Gävle competed with Stockholm in trade within the region. Despite royal decrees initiated by the burgesses in Stockholm and periodical limitations on the trade and sea transport of Gävle. The town became one of the most important exporting ports in Sweden during the 16th century. From the beginning of the 17th century the town declined in importance as a result of lengthy restrictions on the trade privileges of Gävle imposed by the king.

Archaeological background

Archaeological material from Gävle is limited, and before 1988 no excavations of any size had been carried out. Information about the appearance of the town in the 15th and 16th centuries was almost non-existent. Stray finds from trial excavations could be dated to the period between 1500 and 1700 and no structural remains in the present town of Gävle seem to be older than the late 16th century. Due to the lack of clear proof, different locations in the present city, mainly near the present church, had been claimed for the medieval town prior to the 1988 excavations. The excavations carried out in 1988, revealed convincing indications that the medieval town of Gävle is to be located in the eastern part of the present city, on the northern bank of the River Gavle where it, before the mid 19th century, divided into a southern and a northern branch, the latter called Lillån.

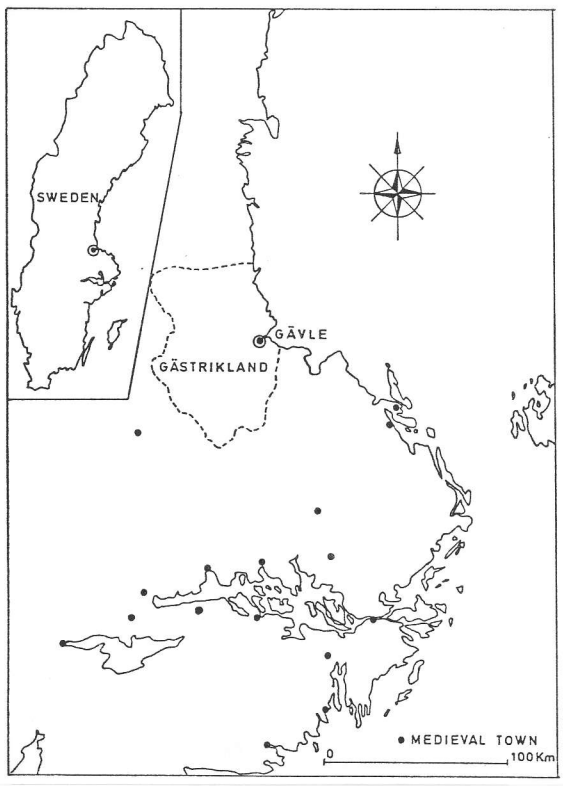

Fig 1. Medieval towns in eastern Sweden.

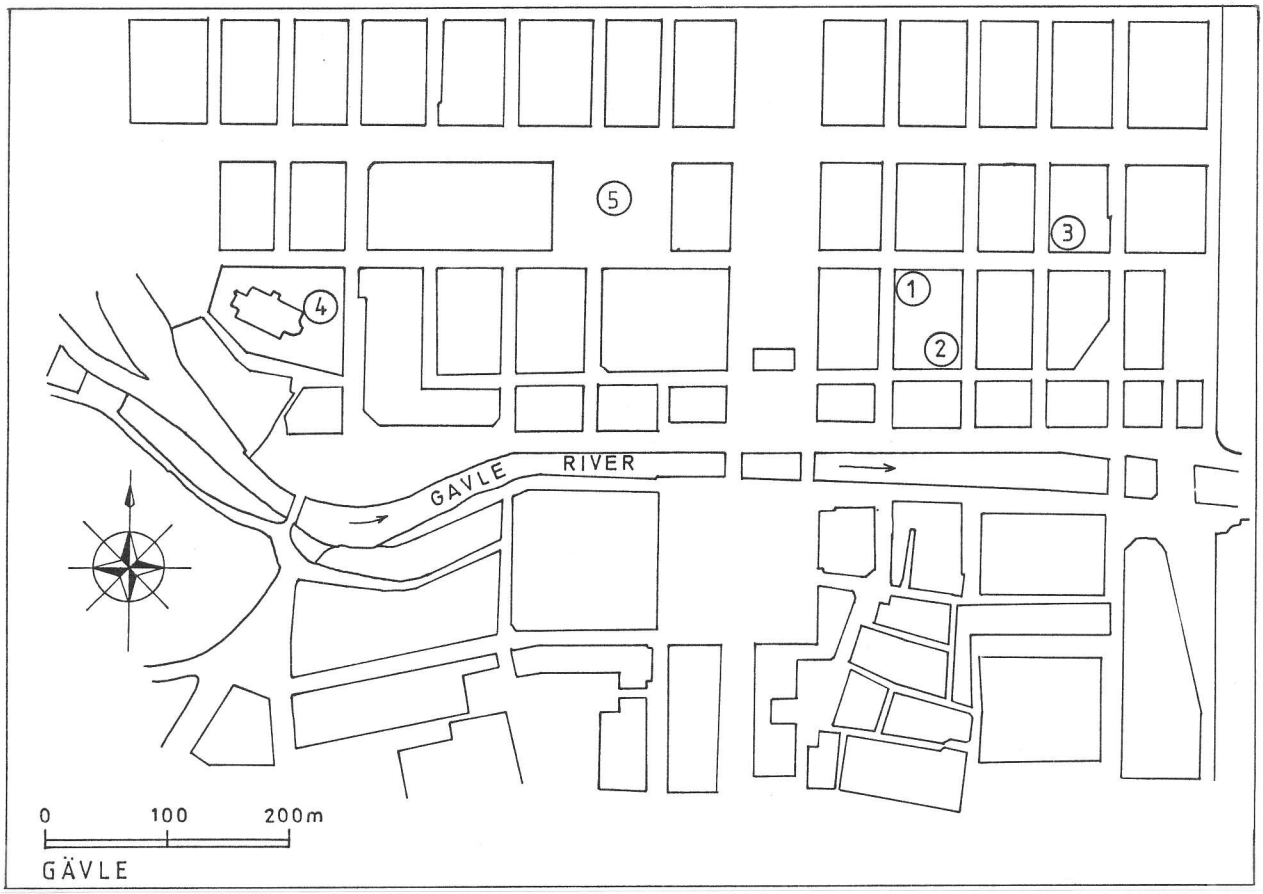

Fig 2. Present street system and block division. 1. Archaeological site 1988, 2. Study area, 3. Archaeological site 1988, 4. Church, 5. Present "Stora Torget".

During 1988 three relatively large rescue excavations were carried out in Gävle within the blocks Oxenstjärna and Pechlin. In all three cases excavations uncovered archaeological remains from the 16th to 18th centuries in distinctive stratigraphic phases, recording an earlier unknown unit division within these parts of the town during the 16th century. This unit division is seen connected to a transference of the commercial center of the town to a new location around the present "Stora Torget" after a devastating fire in 1569. Pieces of medieval pottery, in isolated layers support this interpretation in that they indicate the possibility of medieval structures and occupation layers located in the immediate vicinity of the 1988 excavation area. This medieval occupation was most certainly located between the excavated areas and a contemporary waterfront to the east and south.

The study area

This paper presents some results from one of the excavations carried out within the Oxenstjärna block, a block situated in what seems to be one of the most central parts of Gävle during the 1630's. The oldest known map of Gävle is from around this date. The archaeological results show that at least five different phases can be observed in the excavated area. Not later than at the beginning of the 16th century this area seems to have been used for cultivation purposes. These fields most probably belonged to a settlement area located south, southeast and east of the field system. Later, after the fields been abandoned, a large ditch was dug through the excavated area. The ditch had was probably initiated by the need to drain low-lying wet surroundings before these were taken into use for new buildings. Before the new buildings were erected, an extensive and homogeneous culture layer containing wood waste was spread over the area quite evenly (layer 2). From an archaeological point of view, this layer has been interpreted as a deposited layer. The new buildings seem to have been built some time during the period 1560-1580 and have a unit orientation corresponding to that shown on the earliest map. These buildings were later destroyed by fire in the beginning of the 17th century. The following buildings were erected immediately on top of earlier one, but their fragmentary condition due to modern construction work has obliterated further information concerning these remains.

Palaeoecological sampling

Prior to 1988 no analyses of plant remains from archaeological contexts in Gävle had been carried out. For this reason primary analyses were undertaken during the early stages of the excavations in 1988, in order to check the status of any plant remains. Analyses showed that the samples collected from the earliest layers, contained macrofossils in very good condition. With this information accessible already during the course of the excavation, it was decided that sampling from a cultural layer containing a large amount of wood refuse, (layer 2), should be more intense than normal.

Initially, the aim was to check the possibility of establishing the necessary sampling density for macrofossil analyses in future excavations involving a homogeneous cultural layer. A second aim was to establish when samples show great similarity within the same stratigraphical sequences in the conditions found in Gävle at different points of time. Furthermore, the study also aimed to correlate environmental and cultural phenomena collected from the same stratigraphic position. For this reason household refuse, such as bones and pottery, retrieved from a 2x2m grid system has been used in a study of the spatial distribution of refuse.

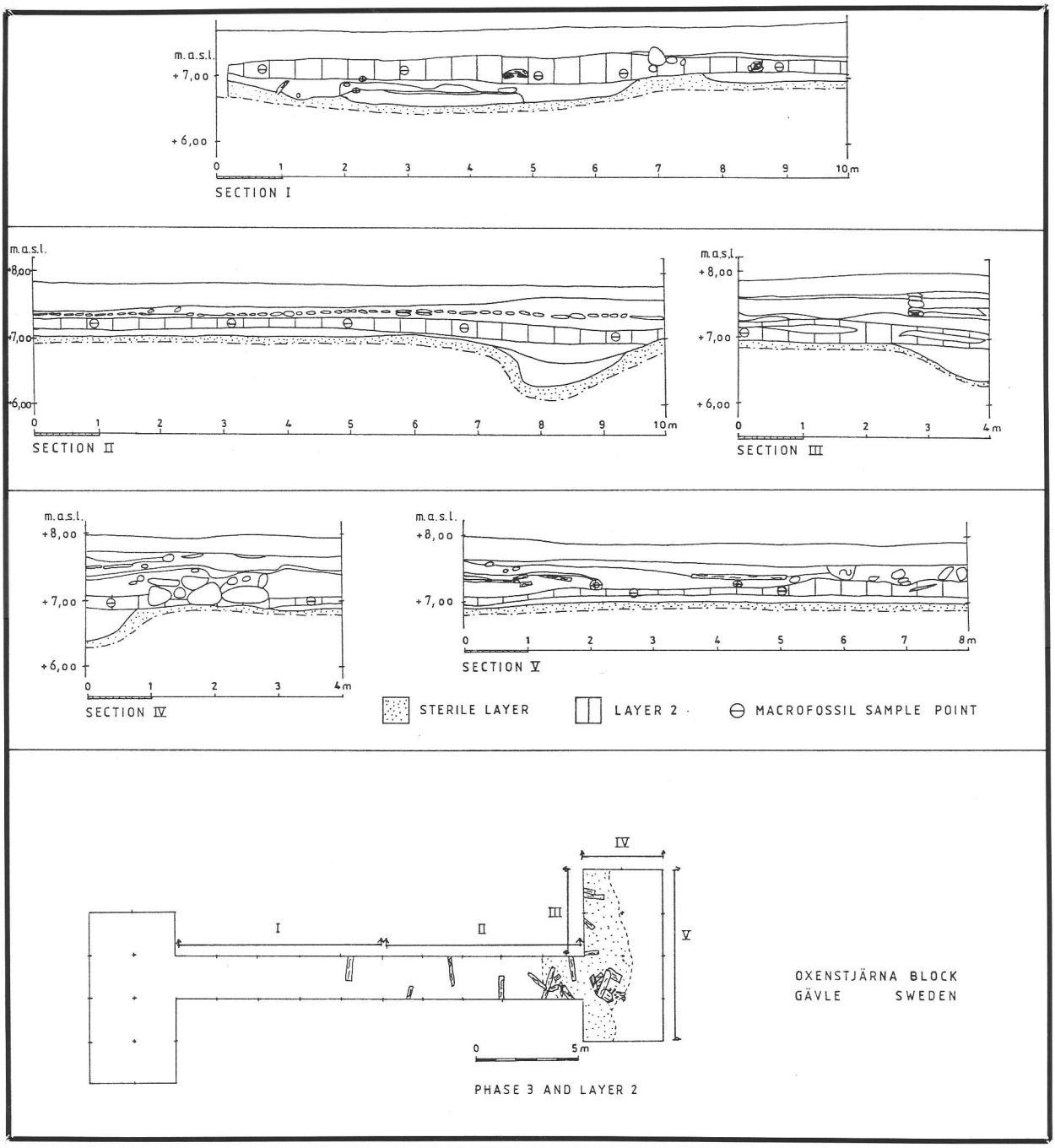

Fig 3. Sections showing the cultural stratification within the study area and position of sampled layer.

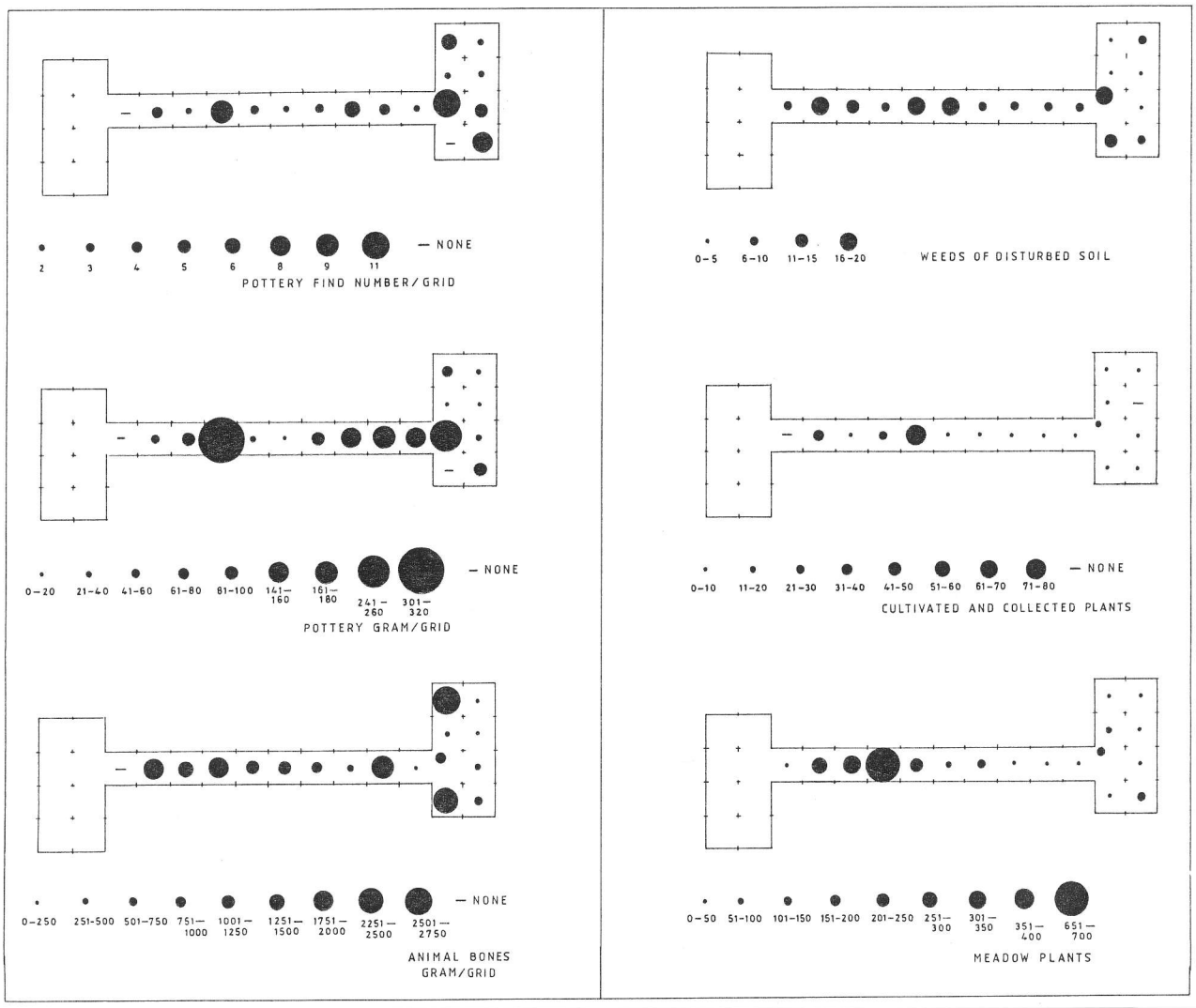

Fig 4. Distribution of waste and refuse in layer 2 as reflected by archaeological finds and plant remains.

Palaeoecological work

In connection with the archaeological investigations regular samples for palaeoecological analyses were taken in layer 2 - described as a homogeneous cultural layer. The sampling was undertaken by the archaeologists. The following questions were raised:

1. State of preservation of the organic material?
2. Density of sampling?
3. Environment within the town?
4. Differences between the archaeological and palaeoecological results?
5. Can palaeoecological analyses be of help for the archaeological interpretation?

Results

The plant material has been tentatively grouped into three categories:

A. Weeds of disturbed soil

B. Meadow plants

C. Cultivated and collected plants

Within the sampled layer great differences exist concerning the numbers of seeds and fruits. The frequencies of weeds are rather constant in all samples. Seeds of meadow plants have two distinct concentrations, probably reflecting the presence of two separate waste heaps, perhaps built up in the vicinity of some kind of building. Cultivated plants are represented by hops only. Collected plants consist mainly of different kinds of berries, such as cloudberry, strawberry, bilberry/cowberry and raspberry. Some seeds of fig have also been found.

From a botanical point of view layer 2 is a quite heterogeneous layer which is in disagreement with the archaeological interpretation. The plant material is very well preserved in all samples. The great differences in seed contents within the cultural layer is probably not dependent on differential preservation.

Conclusions

Samples collected within the same layer from a site located in the town of Gävle showed that although the organic material was in a very good state of preservation in the site area, it could not answer all the archaeologist's questions. The density of the sampling, in this case samples collected within a 2x2m grid system, was sufficient to identify unseen functions within this area, but was insufficient to describe the environment of the town. The differences between the archaeological and palaeoecological interpretations of the same layer reveal the difficulties of identifying the correct functions of layers, deposited in the site area using only the archaeological documentation collected in sections. It would seem more accurate to classify, layer 2 as a levelling layer. The necessity of palaeoecological sampling was quite clear in the studied case, but the spatial study of certain finds did indicate a concentration of waste and refuse correlating to the palaeological results.

The results so far also suggest that the absence of visible archaeological structures does not mean that macrofossil sampling is pointless. On the contrary, it maybe even more necessary if identifying unseen functions in urban archaeological contexts are to be identified.