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## AN EXPERIMENTAL STATION AT BŘEZNO NEAR LOUNY (NW BOHEMIA)

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After 1986, when a paper describing experiments with the building of Slavic houses and living in them had been published (Pleinerová 1986), work at the experimental station of the Institute of Archeology at Březno followed two lines of research. The major direction was defined by the basic concept underlying the Březno experiment - the building of a house on the foundations of a specific ground-plan, use of original materials (especially of identical kinds of wood), the use of replicas of original tools with a conscious effort to keep to traditional and adequate working techniques. The minor direction was represented by complementary work to reproduce some of the ancient operations.

The experiment follows systematically the results of the extensive Březno excavations, until now based on evidence from the most recent phases of the settlement. Two shelters built earlier - a sunken-floored house of the 6th century A.D. with wattle walls and a saddle roof (5) and a house of the 9th century A.D. built by a groove construction with a hip roof (69) - were intended to throw light on early Slavic and Slavic house-building. A newly-erected structure, a Germanic sunken-floored house from the later stages of the Migration period is a component from the 6th century Germanic village which, to date, is the only settlement group of its kind in Bohemia available for study. This very fact led to an attempt to obtain more detailed information on of the building techniques.

The ground plan of the structure was oblong with a shallow sunken floor. This was the so-called six-post house (Fig. 1). Both front walls contained groups of three deeply-set posts, with the central posts always somewhat in front, indicating a transverse joint. The shapes of the post-holes suggest that four of the posts were hewn so that timbers were stood in the E wall and the middle of the W wall, while round posts were situated at both ends of the W wall. The truss construction is fairly clear - a suspended saddle roof leaning on the so-called wall supports ("pozednice"). The integrity of the truss was ensured by transverse junctions.

The roof was covered with reeds but the manner of the roof-covering differed from both of the previous structures. The base for the covering was a coarser wattle lining the pairs of rafters, and on top of bundles were laid freely in rows from bottom to top and tied together, as well as to the wattle and the rafters.

No evidence for the wall construction is available. We could have chosen from various methods in the light of contemporary evidence since we wished also to test the degree to which problems could be caused by elements other than those which we had already employed. For this reason, we assembled the front walls from wooden boards cut from half-trunks set vertically into a groove cut in a horizontal round beam at the base of the structure, and above, into a groove in a transverse tie-beam. The side walls were made of wattle. Although this combination may seem somewhat of a mixture, it is known that similar examples frequently occurred. The available evidence, though from a different period (Zürn 1965), bears out this suggestion well.

As well as in the cases of the two preceding structures, we wanted to obtain more information on four essential questions in the course of the building of sunken-floored hut No. 13 - the technical requirements of ancient building methods, consumption of materials, the optimum number of workers, and the time needed for erection. Using boards, the technical demands were, in comparison to the Slavic houses, somewhat higher. However, as this technology is hypothetical and its application in the building of house No. 13 cannot be directly proved, it cannot provide evidence on the first question. The truss construction is more demanding than with the early Slavic structure 5, but less so than in the case of the Slavic house No. 69. The material consumption for building 13 amounted to c. 3,5 m<sup>3</sup> of wood as there was a considerable amount of waste. This is caused by the fact that no more than two boards can be made from one tree trunk; again, we should bear in mind the distortion brought about by our assumption that only boards were used for the front walls. If all of the walls had been made of wattle, the consumption would have been almost 1 m<sup>3</sup> lower. While to a degree, the information on the demands of the building and on material consumption may be considered objective, estimates of the optimum number of workers (in this case, as with the preceding ones, three people) and especially of the time required for the erection of the structure belongs in the realms of pure speculation.

Preparatory work for the building of two Neolithic long houses was based on the ground plans which

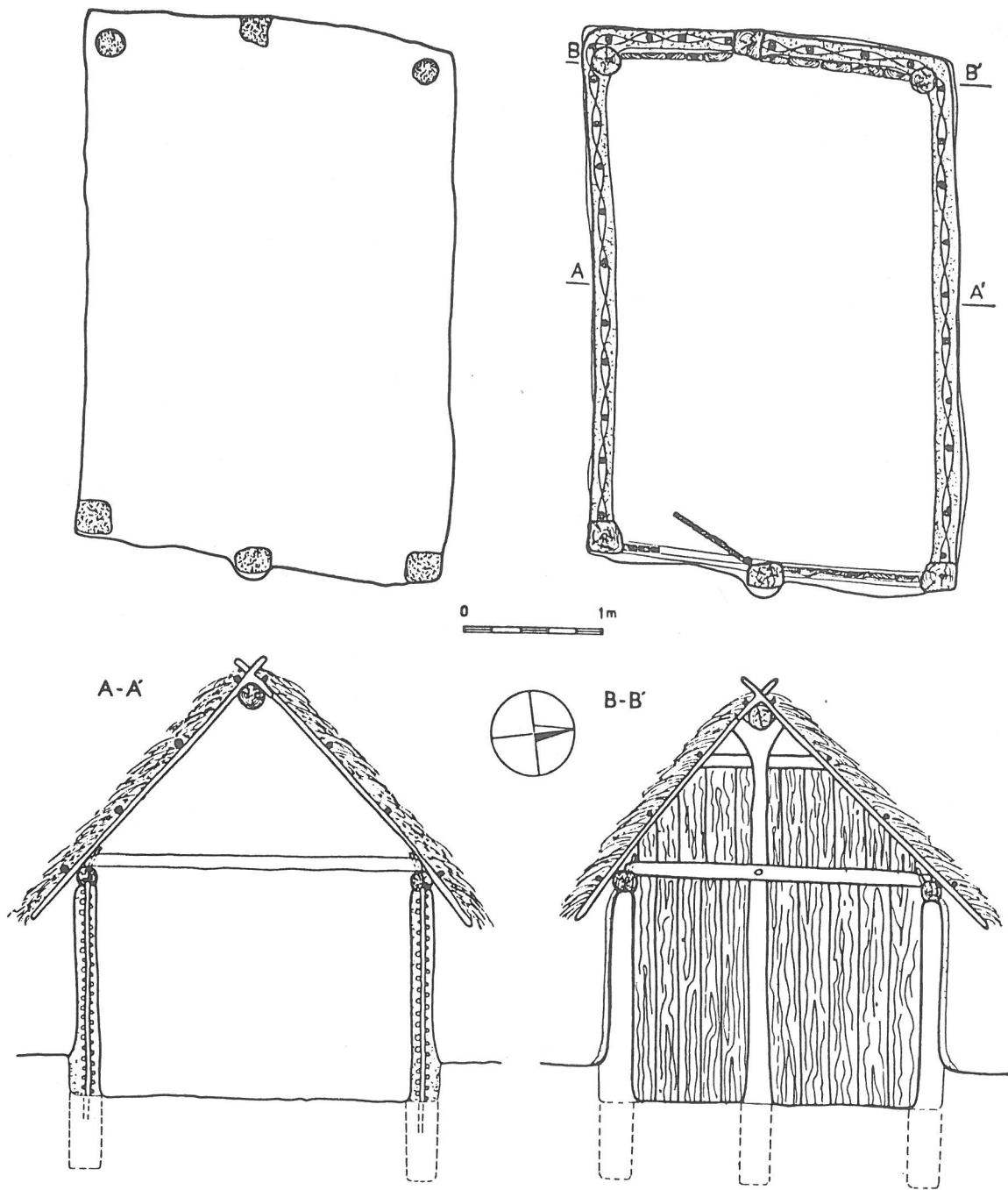


Fig. 1. Brezno, district of Louny. House 13: 1 - the ground plan as found; 2 - the reconstructed ground plan; 3 - reconstruction of the building, section A-A'; 4 - reconstruction of the building, section B-B.

came to light at our site has been started. We wished to complete parts of the buildings in accordance with the Brezno experimental criteria. In other questions, we shall follow only the most probable interpretation of the surviving traces of the ground plan and the most likely external aspect of the structures. This project represents a transition between the original experiment and our intention to present the hitherto-available results to the public and to assemble a small open-air archeological museum at Brezno.

As to the other direction of research, reference should be made to experimental reconstructions of ancient techniques such as the firing of pottery in a simple Slavic kiln, repeated annually at Brezno (Pleiner 1988). At present, the main experiment in progress is into the storage of grain in a Slavic

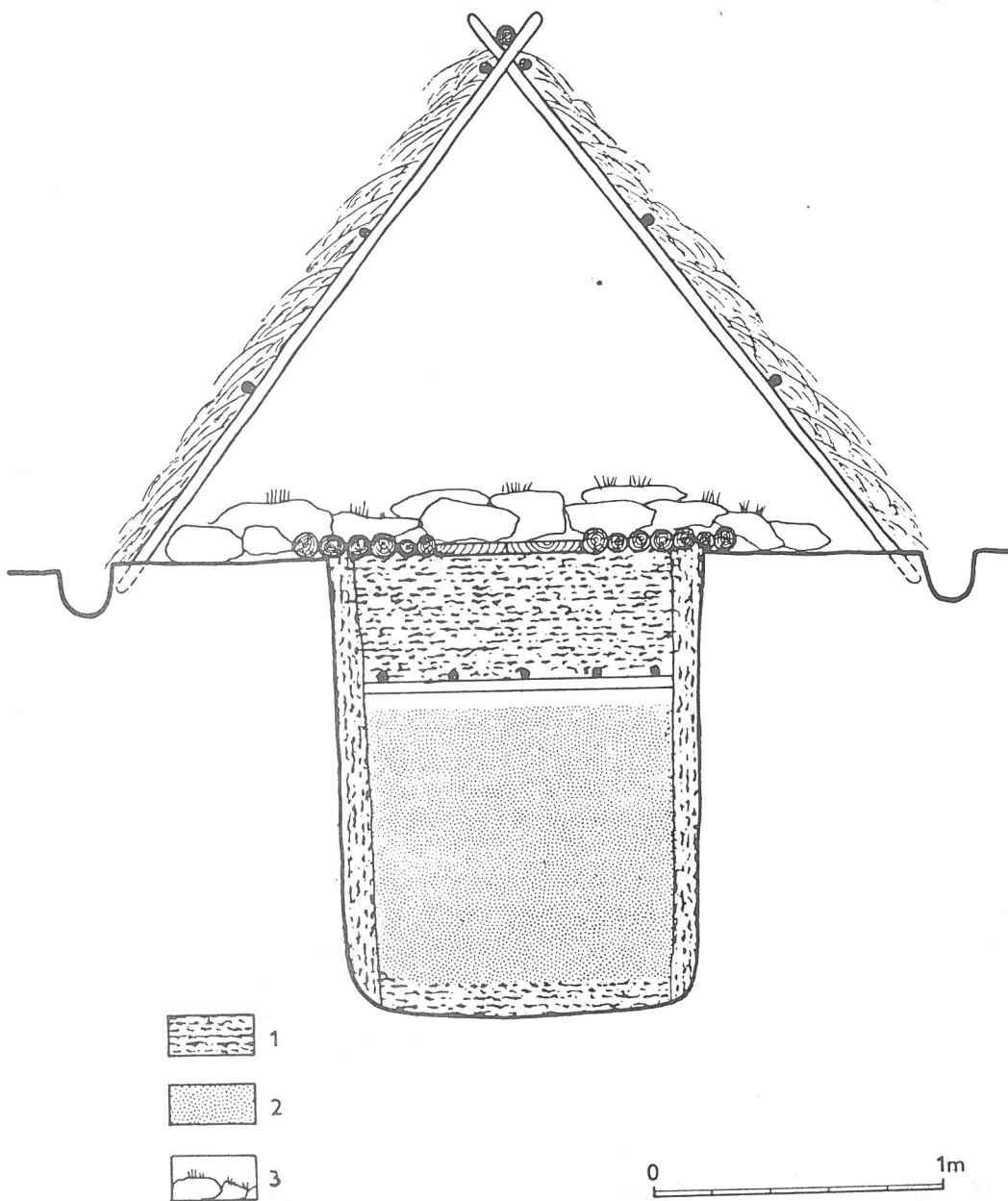


Fig. 2. Březno, district of Louny. Grain storage pit 71, reconstruction (a section). Key: 1 - straw; 2 - grain; 3 - sods.

storage pit. A storage pit (No. 71), probably of the Slavic period, was excavated in the vicinity of the early Slavic habitation structure No. 5. This pit offered certain advantages for experiment for two reasons: first, it may be seen as an economic unit of the experimental sunken-floored house No. 5; second, its regular cylinder-shaped section corresponds to some earlier, prehistoric storage facilities the functions of which could be studied by evidence gathered during the experiment.

Pit 71 has a cylindrical shape of depth of 150 cm, upper diameter 122 cm and lower diameter 110cm (Fig. 2). It was prepared on the basis of evidence obtained so far though archaeological excavation, in particular, those conducted by J. Kudrnáč (1958), and from ethnographic data (Mrušková 1962). The interior was fired three times and, later on, was lined with mats made of straw thus causing slight changes in its dimensions (depth 145 cm, upper diameter 105 cm, lower diameter 92 cm). A light latticework of wood to hold the straw closing the upper part of the pit in place, was inset some 40 cm below the surface. A distance of 5-7 cm separates this lattice work from the upper surface of the grain deposit. On the 28th

September 1988, the grain (wheat of the "Mironovská" type) was deposited in the pit while the surface of the pile was subjected to constant trampling. The pit held 6,5 metric cents of grain. The mouth of the pit was then covered by a lattice of round beams with the exception of a central rectangular gap for access, and covered with a plank.

The pit was then covered with sods, and protected by a light roof surrounded by shallow drainage trenches. All of this was done in order to prevent the access of air to the grain deposit, and to protect the whole structure against damp. The purpose of the experiment, which will end in September 1990, is the study and documentation of processes taking place both in the pit and in the grain deposit over a two year period. This involves measurements of temperature, humidity, the quantity of carbon dioxide evolved, and an examination of germination potential. Ethnographic data implies that grain could have been stored successfully in this way, but no detailed evidence on the physico-chemical conditions of the processes involved or their measurements is available.

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