

IRON AGE HUT : A RECONSTRUCTION

By PETER J. REYNOLDS, M.A.

IN the summer of 1966 an experiment to reconstruct an Iron Age hut took place on Bredon Hill. A site for the hut, fifty yards to the south of the Iron Age fort on the summit, was provided by Mr. Thurston Holland-Martin, for whose invaluable help and unfailing interest the author and all those who took part in the experiment are extremely grateful. Mr. Holland-Martin gave all the wood used in the construction, as well as transporting a ton of clay to the site.

The objects of the experiment were to attempt to discover how long such a hut would take to build and to appreciate the problems of construction, especially the construction of the roof. Much information on the general structure of Iron Age huts was obtained from the report of the excavations of "*The Lake Villages of Somerset*" (5th edition), by Arthur Bulleid, L.R.C.D., F.S.A. The floor, wall structure and general dimensions of the hut are based on the smaller huts of the Glastonbury Lake Village. Evidence for the roof structure is limited to the observation that roofs were supported by a central post or posts, and were probably thatched. The way in which these particular problems were tackled can be seen in the following account.

The hut was built by seven young men from Prince Henry's Grammar School, Evesham, as a project immediately after the summer "A" level examinations. Throughout the week they camped in the inner ditch of the Iron Age camp, some fifty yards from the inner entrance. They worked for approximately five hours each day on the structure, which they completed in five days. This represents some 175 man hours.

At the outset they knew the basic plan of an Iron Age hut, as far as can be ascertained from excavation details at Glastonbury. For the purposes of the construction a diameter of 14 feet was decided upon, to correspond with the smaller huts of the Lake Village. The information they did not have, as indeed no-one has, was regarding the method of construction of the roof. Beyond the fact that the roof was thatched and had timber supports, nothing is known about roof structure. In some huts there is evidence of central poles holding up the roof structure. Sometimes one, two or three post holes have been found bordering the hearth in the centre of the hut. In the Chysauster ancient village in Cornwall, stone slabs with a central indentation are thought to have been the base for such roof supports.

In this experiment, three central poles 13 feet long were erected in the centre of the hut as a tripod, forming an apex some ten feet from the ground, thus crossing and giving the impression of a smaller, inverted tripod above the roof. The base of the three poles was sunk one foot into the ground. A rough circle was measured out from the centre of the tripod of poles, using a length of twine some seven feet long. Post holes were dug, 12 inches deep, at intervals ranging from 18 to 30 inches apart around this circumference. In all, nineteen post-holes were made. A gap of 30 inches was deliberately made on the southern side of the hut for a doorway, thus avoiding the prevailing winds. Poles, six feet in length, were then erected in the holes and made firm with limestone shale and packed earth. A lintel was placed over the two door posts. In this size of hut a hurdle door would probably have been made. In the larger huts a more sophisticated door would most likely have been used.

A supply of withies, cut from willows near the gravel pits to the south of Bredon Hill, had been gathered. The time involved is included in the man-hour calculations discussed in a later paragraph. These withies were woven in and

out of the uprights in the simplest manner possible. Each layer of withies was tamped down before another layer was added. When finished, the weaving looked remarkably like that of a large modern shopping basket. The strength of the walls was, however, so considerable that the plan to fix tie bars across the diameter of the hut was abandoned. It was originally thought that such tie bars would be necessary to sustain the full weight of the roof which would exert



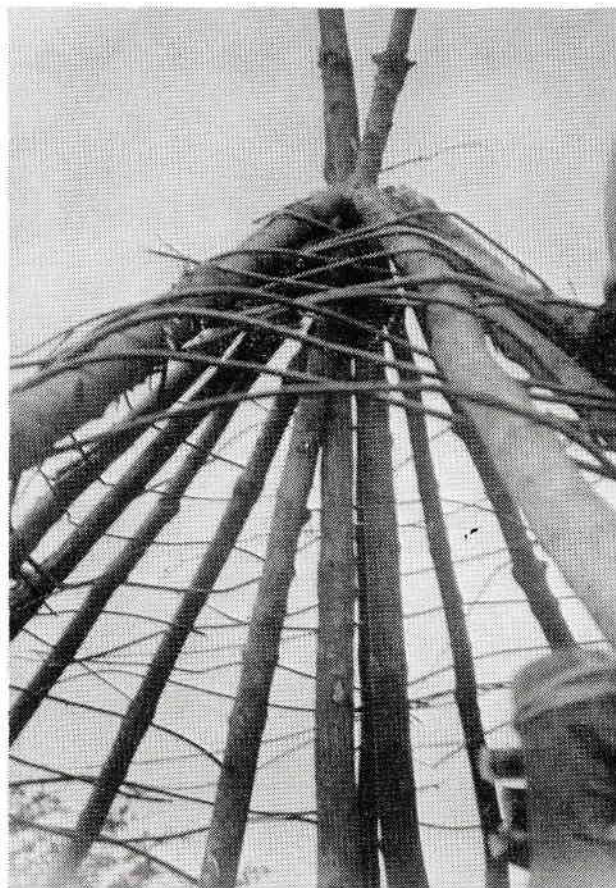
The hut six months after construction.

considerable lateral pressure. There were nineteen roof poles, to correspond to the upright poles in the walls. The length of these roof poles averaged nine feet, and when suspended in position from the crossing point of the three central poles to the wall, they extended beyond the edge of the wall by nine inches to a foot. These were lashed into position, first at the apex, and then at the exposed

sections of the upright poles in the wall. Presumably, Iron Age man would have used leather thongs, and possibly even nails, but in this structure rough twine was used to good effect.

The shell of the hut was now erected and all that remained was for the roof to be thatched and the walls to be daubed with clay. Both these operations continued simultaneously. Blue lias clay, obtained from the gravel pit below the hill and placed on site beforehand, was mixed with chopped straw and water until it was sufficiently malleable to be pressed into the walls. This part of the operation was possibly the most tedious, and it would be interesting to discover whether the finger-marks observed on daub from excavations could be identified as male or female. This, however, so the local C.I.D. asserts, is impossible. The job certainly requires the patience of the female and the strength of the male. Both the inside and the outside of the hut walls were daubed with the clay/straw mixture, making a solid mass some nine inches or more thick. Possibly an insufficient amount of straw was mixed with the clay, since, as the walls dried out, hundreds of small cracks appeared. Undoubtedly the native would have repaired each crack as it appeared. Few cracks actually penetrated through the whole thickness of the wall.

The roof presented a much more difficult problem as there was no evidence to go on at all. A professional thatcher was consulted on methods of thatching, especially primitive methods. His erudite advice was invaluable, if confusing.



Withies were loosely woven into the roof framework.

The present system of using a combine harvester does not produce straw long enough for thatching, and this has, therefore, to be cut by hand. Consequently, a quantity of special thatching straw was bought for the roof. This, in itself, was disappointing because, in the previous year, during an experiment in Iron Age agricultural methods, 1/6 acre of straw had been left unused after the crop had been reaped by the ear. This straw would undoubtedly have been used as thatching material in earlier times.

A number of long withies were loosely woven into the roof timbers to provide a framework to support the straw. The straw was then picked up in sheaves, and, working from the base of the roof round its perimeter, placed in position and tied on, using withies and twine. A withy was secured from inside the roof and then tied over the sheaf of straw on the outside by locking it into position, again from inside, with twine. The next sheaf was butted up tightly and secured in the same way. By working round the circumference, and gradually building upwards, the roof was thatched. Originally it was discussed whether to have a hole in the roof for the smoke to escape, or to thatch the roof completely. Taking evidence from the African practice of completely thatching the roof, the latter course was decided upon. The parallel is strained, but the African huts are so similar in style and structure as to be virtually the same as those of the Iron Age, the only escape for fire-smoke being through the doorway. In practice this proved to be quite adequate, and it is uncertain whether a hole in the roof would have helped a great deal. A rough clay hearth was made in the centre of the hut in the area immediately bounded by the three central poles.

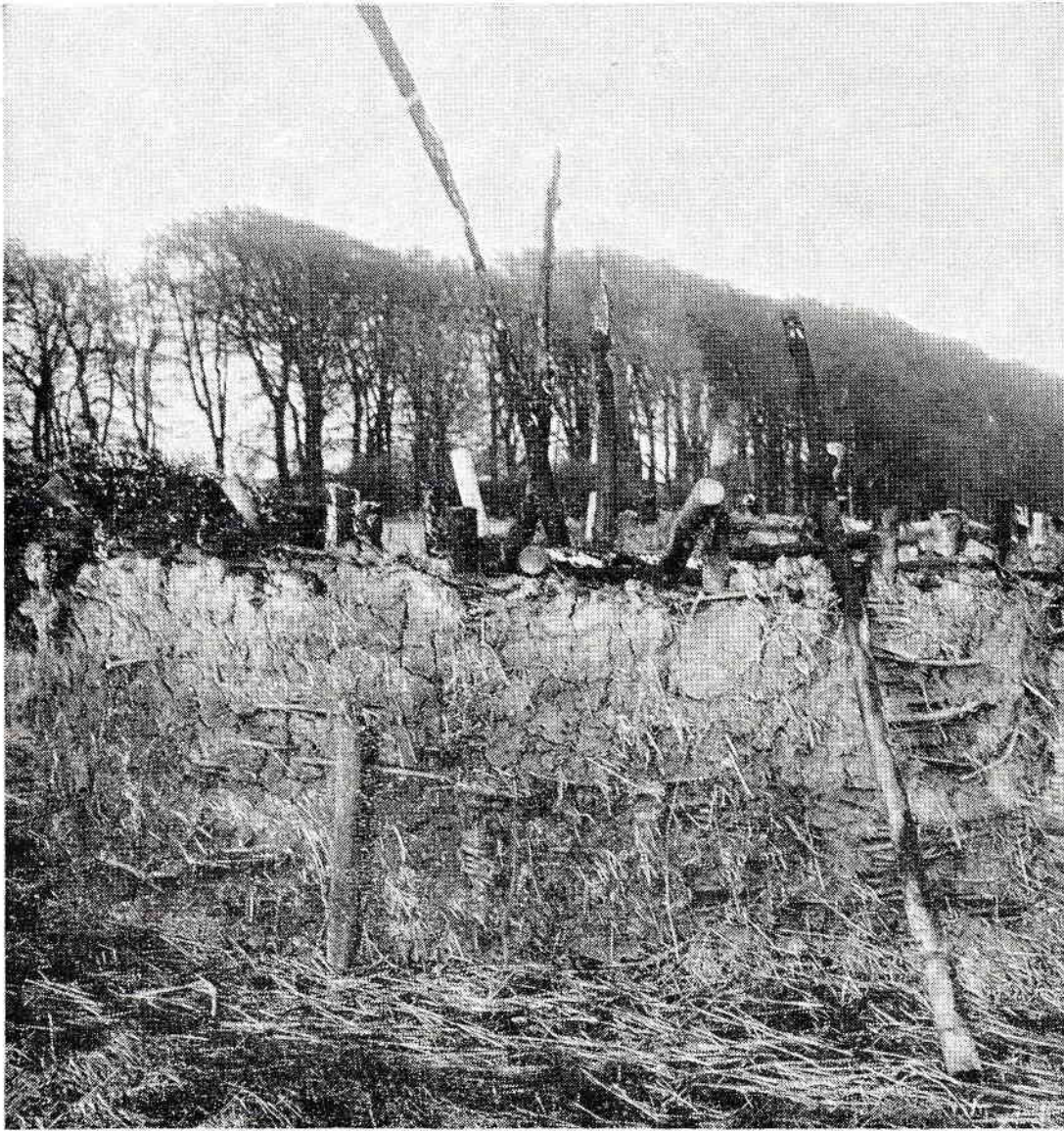
The hut proved extremely warm and cosy with a fire, and even in the depths of winter, without a fire and with an outside temperature of -1°C , the temperature inside the hut was 3°C .

Unfortunately, some nine months after the hut was completed, vandals saw fit to amuse themselves by burning it down; a sad reflection on a small section of our modern society who gain satisfaction from pointless destruction.

However, even in destruction, some interesting information was obtained. The roof was completely destroyed and the central poles half burnt away. The walls were still standing but many of the withies at the top of the walls had been turned into charcoal by the intense heat. The clay on the interior of the walls in many places had been "fired" to a pinkish colour. The roof had fallen in in a most interesting way. The straw had left a mass of ashes, some 12in. deep, while the roof supports had fallen almost exactly into the reverse of their original position. Where they had burnt away completely, they made lines of blacker ashes radiating from the central hearth. This example of excavation in reverse is a clear proof of the need to excavate such sites by area methods, opening up a large area and removing single layers from this area. Excavating by trenches would destroy this evidence without really observing it. The fire was remarkably contained within the walls of the hut with no signs of burning on the outside grass.

The hut, after destruction, could have been rebuilt, but the time involved in clearing the site and the necessary repairs to the walls would hardly be justified. It could possibly have some use as an animal pen or storage place.

One hundred and seventy-five man hours were required to build the hut. This is represented by seven men working five hours per day for five days. This total does not include the cutting of uprights, digging the clay, or cutting the thatching straw. Given that the materials are on site, and that one has experience of previous building, a hut could easily be built within two days, perhaps even in one with a greater labour force. Once the framework is in



The roof was completely destroyed . . .

position, women and children could prepare the clay and daub the walls while the roof was being thatched. One can imagine that a fairly permanent village could be established in quite a short time. It would be interesting in this respect to discover if such a village existed within the adjacent Iron Age fort. Aerial photographs clearly show several hut circles inside the inner rampart that runs roughly south-northeast. Excavation could possibly uncover more such hut circles. Since it is thought that habitation of this fort ceased in approximately 100 B.C. considerable information could be gained of the conditions of the "A" and "B" periods in this area.

The specifications of the hut were as follows:

19 wall uprights 6 feet in length.

19 roof supports 9 feet in length.

Wood: Ash.

3 central poles 13 feet in length.
Diameter of hut 14 feet.
Doorway 2 feet 6 inches.
Circumference 44 feet.
Area 154 square feet.

Clay: Blue Lias.
Thatching straw.

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