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# PLOUGHS IN PREHISTORY

report by Dr. P. J. Reynolds

**T**he received picture of springtime in the remote past is of primitive farmers struggling to plough up their tiny fields with stick ploughs which do no more than scratch the surface of the soil. Looking at modern landscapes with multi-hectare sized fields, huge tractors and multi-shared ploughs, perhaps this picture is a forgivable one. Maybe forgivable, but is it true? Did Iron Age farmers have to struggle with primitive

equipment which if not by definition, certainly by implication, was inefficient? An examination of the available evidence reveals a rather different outline. The testing of that evidence at the Butser Ancient Farm has further changed the picture to almost the opposite view. Perhaps the first inkling that the picture is somehow at odds with reality can be gleaned from the writings of the classical authors who report that grain and leather amongst

other items were exported from Britain before the Roman occupation of 43 AD. The implication of exporting any commodity, but particularly agricultural goods is that a surplus over and above the home requirements is being produced. Looking at the topography and soils of Britain in any time argues clearly for arable and pastoral regimes, arable in the south-east, pastoral in the

**BELOW:** The Dexter cattle yoked to the reconstructed Donnuplund ard at Butser Animal Farm.

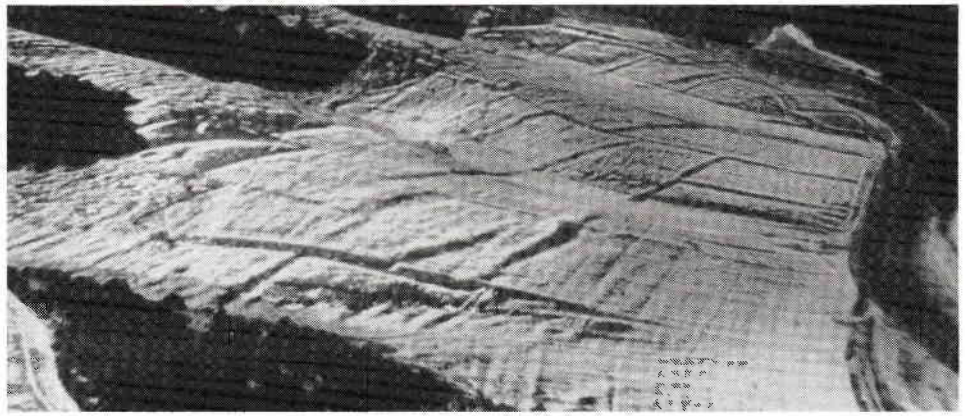


north-west. Could it be that these zones were successfully exploited in the pre-Roman Iron Age?

Necessarily the starting point must be with the archaeological data. There is clear surviving evidence for huge tracts of prehistoric fields primarily on the poor chalk downlands of southern and north-eastern England. Their survival is not particularly remarkable since the soil is so relatively poor; given the contraction of population and, therefore, arable requirements after the Roman period, the abandonment of these particular landscapes to scrub grazing in favour of the better valley and lowland soils is only sensible. The loss of evidence for fields from prehistory on these better soils can be attributed to the uninterrupted agriculture of the past two thousand years. That these areas were extensively occupied is amply proven both by aerial reconnaissance excavation.

What has emerged over the last twenty years of excavation has been the identification of prehistoric plough marks in about every soil type throughout the country including traces beneath Hadrian's Wall. These plough marks are specifically associated with a particular plough or ard which can best be described as a sod-buster. Representations of it survive only in the rock carvings found in France and Italy. The difference between a plough and an ard is that the former has a mould board which turns the soil over, the latter stirs the soil in the horizontal mode. The sod buster is, in effect, a great spike which is driven forward through the ground heaving up the soil which then has to be broken down with mattock hoes. Historically this ard survives in north-western Spain where it is called *El cambelo*, the traction being provided by a pair of bulls. The agricultural scene from the Vall Commic in northern Italy shows the technique, though the animals are persuasive of great power. Experiments have shown that this ard is the most probable creator of the plough marks recovered by excavation.

Two further types of ard are represented in the rock carvings and further substantiated by the recovery of the implements themselves or parts of them principally from the peat bogs of Denmark and waterlogged sites in Scotland and England. The type used for the general ploughing purposes is the beam ard. The Dannvuplund ard illustrated is a good example of this type. In effect it is a complex tool comprising a main share which is a single pointed oak stake set above a heart-shaped under-share both of which are socketed into a curved beam through a mortice hole and wedged into place. The main share holds the ard in



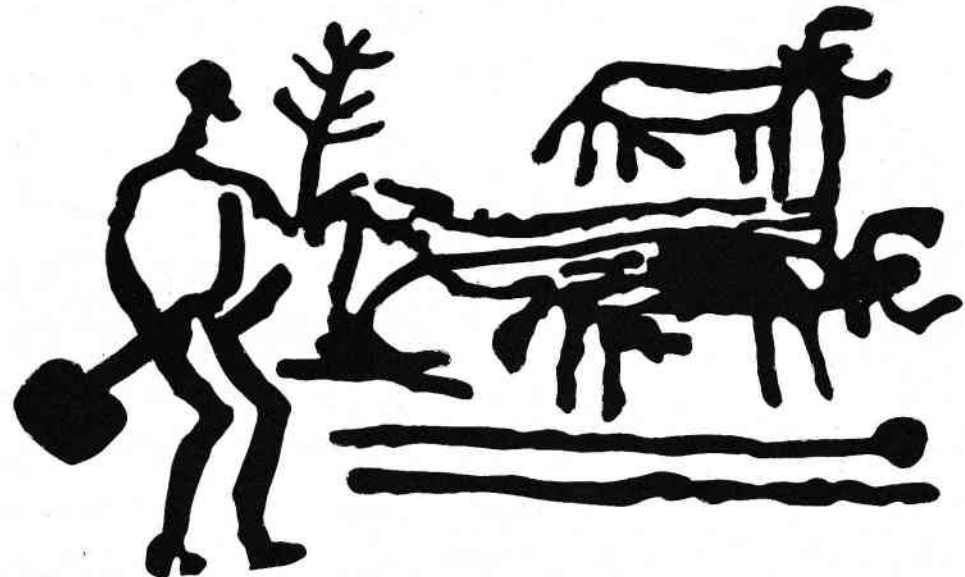
the soil, its angle of penetration being fairly critical at approximately 29° to the horizontal. The under-share lifts the soil which is then separated and stirred as it passes the heel of the main beam. In practice once a field is in full cultivation this ard is extremely effective. It creates furrows some thirty centimetres deep from crest to trough and thoroughly breaks down the soil into a tilth. Trials with this ard have been carried out by the author into a range of difficult soils including heavy loams and marls. With the heavier soils the choice of when to plough is absolutely critical. Somehow each year there is an ideal moment when the ground is in exactly the right condition for ploughing. The skill of the farmer is, of course, in recognising this moment and acting accordingly.

The efficiency of the beam ard raises a problem because it is impossible just to sow seeds into furrows 30cm deep and then cover them up. The seeds would be too deep to grow properly, the great majority of them would rot because of the humidity. The furrows in fact have to be levelled out. Exactly how this was done we don't know. In all probability a log dragged across the furrows would be the most effective manner, a method practised in Ireland

in this century.

Most surprisingly there is yet a third type of ard which can only be described as a seed drill. It is made from a curved bough of a tree, the main stem being shaped into a pivot which is slightly angled into the soil. The handle is set into a mortice joint at the rear. In practice this ard draws a shallow narrow furrow just a few centimetres deep ideally suited for a seed drill. The representation from Littleby in Sweden illustrates the scene with much ritual input. The lines below the cattle are the seed drills and the bag in the hand of the ploughman is thought to contain the seed. The phaluses on both man and beasts are clearly to do with the fertility required at this time of the year.

The implications of these three types of ard are extremely important for our understanding of agricultural practice in prehistory. Essentially the Iron Age and indeed the Bronze Age farmer possessed a panoply of ploughs designed to cope with the basic problems of cultivation. The sod-buster probably pulled by a pair of bulls was used for bringing land never before ploughed or which had lain fallow for a long time, into cultivation. The beam ard was used for regular ploughing in autumn and spring and finally the sand



ABOVE: The seed drillard as depicted on a rock carving at Littleby, Sweden.

TOP: Prehistoric field system on southern slopes of Butser Hill in Hampshire.

drill ard was used to set the seed into the prepared tilth.

This last is perhaps most important of all. If our interpretation is correct and certainly all the empirical trials prove the efficiency and capability of each type, then the use of the seed drill argues convincingly that seed was set in drills. This means that the crops could be managed with minimum losses against the inevitable arable weed infestation. The process of hoeing out the weeds between the rows is a fundamental element of good husbandry. Without this attention, especially in the moist climate of Britain, crops would be totally inundated by arable weeds and harvest there would be none.

It is worth recording that the traditional planting time for cereals is in late March and early April. The agrochemical revolution of the last 20 years along with the development of hybrid cereals and more powerful machinery has changed the timing of modern sowing considerably. It is not unusual to see spring cereals being planted in early February, an impossibility for the historic as well as the pre-historic farmer.



ABOVE: The sod-buster ard as depicted on a rock carving in the Vol Camonic, Italy

Finally all the ards described were drawn by cattle, the clear implication of which is that each farm had to maintain at least one pair of trained animals and most probably more. Therefore, all the farms whatever the main production might have entailed had to make provision for the maintenance of some livestock. The cattle most like the original celtic short-horn - is the relatively modern breed of medium legged Dexter cattle. These have the same general appearance, shoulder height and body weight and consequently power output. Although they appear to be quite small in modern terms they are, in fact, quite powerful and certainly capable of pulling all the different varieties of prehistoric ard.

BELOW: Detail of the seed drill ard as reconstructed.

The Butser Ancient Farm demonstration area, set within the Queen Elizabeth Country Park, is open to the public from Easter to the end of September at the following times: Weekends only: Saturday 2 pm — 5.30 pm. Sunday 10 am — 5.30 pm. Daily: from July 23rd — September 4th, 2 pm — 5.30 pm (Sundays 10 am — 5.30 pm).

The Queen Elizabeth Country Park is located just four miles south of Petersfield, twelve miles north of Portsmouth off the main A3 London to Portsmouth road. Lecture tours, half and full day schools can be arranged for specialist groups by contacting Butser Ancient Farm, Nexus House, Gravel Hill, Horndean, Hampshire. Telephone: 0705 - 598838. ■

