

Notes on Early Agriculture in Scotland¹

By ROBERT B. K. STEVENSON

THE archaeological evidence for the cultivation of grain in Scotland covers the grain itself, fields, and ploughs, besides grinding-querns which, though frequent, will not be considered now. The pollen from weeds of cultivation may ultimately come to be added.

Hans Helbaek from Denmark has shown from impressions in pottery that barley was already cultivated in neolithic Orkney and Morayshire, and for the early and middle bronze age he got similar evidence from most parts of Scotland except the west Highlands and far north.² Wheat, though known in neolithic southern England, does not seem to have been eaten here until Roman times, which was when oats began to be cultivated in Britain.

Since Helbaek's study was published a heap of 28 lb. of carbonized barley has been found by C. S. T. Calder at Gruting in Shetland. It contained three times as much of the naked form as of the hulled, and was built into the wall of a house of the local stone age, probably corresponding to the end of the British early bronze age.³ Similar houses have been found in recent years in some quantity in various parts of Shetland, and often in places where the moorland seems to have been uninhabited ever since, except for sporadic iron-age squatting in the house sites; so that the numerous low clearance heaps of stones and the remains of field dykes that surround individual houses, or scattered groups of houses, are likely to be contemporary with them, about the middle of the second millennium B.C.⁴

The fields, according to Calder, are usually curvilinear in outline, and range from a single enclosure to half a dozen or so. In size they vary from about 60 to 260 feet across. The clearance heaps are found both inside and outside the enclosures, which may have kept the flocks and herds from the crops—bones of sheep and small cattle have been found in the houses.

Angus Graham has recently studied a number of 'cairnfields' of uncertain date in other parts of Scotland, which he concludes are mainly clearance heaps although traces of associated field boundaries are scanty.⁵ For one site in Morayshire he concluded that the cairns were numerous enough to have

¹ Read at the Conference on Scottish Agricultural History in Edinburgh, 26 September 1959.

² With Knud Jessen in *Kong. Danske Videns. Selskab (Biol. Skrift. III)*, 1944; cf. *Proc. Prehist. Soc.*, 1952, pp. 194 ff.

³ *Proc. Soc. Ant. Scot.*, 1955-6, p. 353.

⁴ *Ibid.*, pp. 357 ff.

⁵ *Ibid.*, 1956-7, pp. 7-23.

prevented the use of a plough drawn by animals, and if they were in fact the result of land clearance it was for manual cultivation.

Some confirmation for the early date of the Shetland fields may be got on the top of a hill near Lerwick (Hill of Shurton), where at the base of deep blanket peat there are the stumps of a dyke that had almost entirely gone before the peat covered it.

The scarcity of hard wood in Shetland, where drift spruce was used as timber,¹ may account for hundreds of enigmatic stone implements that are almost peculiar to the islands, though a few are known also from Orkney. In particular there is one relatively scarce type: stone bars two or three feet long or more, though generally only broken tips two to three inches thick, have been collected.² These bars are rough, but worn smooth at one side of the tip only, and this localized wear could be explained if such a bar were put in the place of the wooden fore-share of an early northern European plough, one that has developed just beyond the simplest plough which has no fore-share and which continental writers call the 'crook-ard'.

The idea of a stone share is not entirely extravagant, as they have been occasionally recorded in modern times, and neolithic stone shares—quite different indeed from the possible Shetland ones—have been convincingly demonstrated from central Europe.³

A more developed type of plough is known to have been used in Denmark in the iron age and probably already in the late bronze age. Its massive curved beam is perforated at one end to receive a stilt, ploughshare, and fore-share, all of separate pieces of wood.⁴ This 'bow-ard' is known in Britain from two finds in south-west Scotland: a typical beam from near Lochmaben, Dumfriesshire, undated;⁵ and a one-piece plough-head and stilt from under the floor in a round-house or crannog in Milton Loch, Kirkcudbrightshire, occupied in the second century A.D.⁶ A triangular share will have been attached to the similarly shaped head, which is slotted to receive it.

Another type of plough reached south-east England at the time of the Roman conquest or just before. It was fitted with an iron share and possibly normally with a coulter. Four iron objects found in Romano-British contexts in south-east Scotland have been assigned by F. G. Payne to such ploughs.⁷ But this should not be accepted as quite certain, for none is entirely like the specimens he illustrates from England, and three have a widening of the

¹ *Archaeol. News Letter*, IV, 1952, pp. 133-7.

² *Proc. Soc. Ant. Scot.*, 1955-6, p. 396.

³ P. V. Glob, *Ard og Plov*, 1951, pp. 124 ff.; *Germania*, 1956, pp. 144-7.

⁴ Glob, *op. cit.*, pp. 113 ff.

⁵ *A. H. R.*, V, 1957, p. 76.

⁶ *Proc. Soc. Ant. Scot.*, 1952-3, pp. 143-4.

⁷ *Archaeological Journal*, CIV, 1947, p. 111 and Fig. 1.

blade beyond the socket that is exactly like the shape of a winged peat-spade included in one of the hoards of iron scrap to which belong another of these possible shares and the fourth dissimilar one.¹ The three objects may, then, be evidence of narrow-blade spades rather than of ploughing. If they are shares, however, they imply according to Payne a horizontal share undermining and turning a furrow, in contrast to the high angle of penetration of the Milton Loch plough.

However, on Danish analogy,² even the latter could have been tilted to the right during ploughing so that the arrow-shaped share turned the greater part of the soil to one side; only the earliest 'crook-ards', and with them the Shetland stone shares if that is what they are, scratched or hoed the soil without turning it.

The square iron-age (so-called Celtic) type of field known in southern England is not known in Scotland: that once claimed near Galashiels is not now accepted.³ A field system possibly of the Roman period exists however in Glenrath, Manor parish near Peebles.⁴ Low stone dykes or heaps run downhill from a series of enclosures some of which are single small huts within courtyards. There are clearance heaps in the fields thus bounded.

Payne, considering in this REVIEW the evidence from shares and coulter that implied the existence of mould-board ploughs in at least late Roman Britain, drew attention to ploughs whose soles are protected on the land-side (left side) by a series of wearing stones driven into holes bored in the wood.⁵ Three ancient wooden soles with such pebbles have been found in Denmark, with evidence for mould-board attachments. The early iron-age date once assigned to them now seems very unlikely, and Glob dates them to the end of the Danish iron age, that is to say not long before Viking times. The use of such protective pebbles is known from nineteenth-century wheeled ploughs, and the ancient ploughs in question may similarly have had wheels.⁶

Pebbles of quartzite that are undoubtedly from similar ploughs have been found in Britain. In particular the National Museum of Antiquities has examples from a number of places in south-east Scotland, also from Bute in the west, and, very recently recognized, several from Jarlshof in Shetland. The latter include the only find with a datable context of any kind, one from

¹ *Proc. Soc. Ant. Scot.*, 1931-2, Fig. 22: 59, 62; and 1952-3, p. 47 where it is suggested that the peat spade is intrusive; but the state of preservation and similarity to the supposed shares argue for true association.

² Glob, *op. cit.*, p. 114.

³ *Proc. Soc. Ant. Scot.*, 1950-1, p. 94.

⁴ *Ibid.*, 1940-1, pp. 109 ff.

⁵ *A. H. R.*, v, 1957, p. 78.

⁶ Glob, *op. cit.*, pp. 12 and 121 ff.

a twelfth-century Norse outhouse.¹ It may be suggested that the pebble-shod plough came over with the Danish invaders who conquered Northumbria in the ninth century and spread to Norse parts of the country also. In England Payne knows of pebbles from Yorkshire and Lincolnshire.

Ploughs with movable mould-boards and movable coulter which allowed the furrow to be turned to right or left—the so-called one-way ploughs—apparently go back in Britain to Roman times, and Payne in his earlier paper overturned previous ideas about the relationship between ploughs and field shape, and the supposed contrast between Celtic light ploughs and heavy Anglo-Saxon ploughs.² The extent to which wheels were used in Roman or later times is, it seems, far from a solved problem.

All of which leaves in doubt the date and reason for the introduction of horizontally terraced fields, such as in Scotland are mainly known in the south-east—as far as Graham's researches went just before the war.³ It seems likely, however, that they are medieval in date. On Arthur's Seat in Edinburgh they are contemporary with a type of farm not yet properly explored, that consists of oval enclosures containing curvilinear structures.⁴ Such homesteads appear, in parts of Dumfriesshire and Peeblesshire, to be the direct predecessor of the modern farmsteads that are sited downhill from them, but they also represent smaller sub-divisions of land.⁵

On Arthur's Seat and elsewhere the horizontal terraced fields were superseded by vertical rigs, a process probably completed by the seventeenth century. The purpose of raised rigs and their curvature has been much written about. Here in Scotland at least they seem with few exceptions to run up and down the slopes, and there can be little doubt that prior to field drains the ridges and the furrows between them were intended as a drainage system. The contrast with terraces which retain water could hardly be greater, and the change from one to the other must represent a more fundamental change of intention than has generally been supposed.

¹ *Proc. Soc. Ant. Scot.*, 1935-6, p. 265 and Fig. 15; J. R. C. Hamilton, *Excavations at Jarlshof*, 1956, p. 173.

² *Archaeological Journal*, *loc. cit.*

³ *Proc. Soc. Ant. Scot.*, 1938-9, pp. 289-315.

⁴ *Ibid.*, 1946-7, pp. 160 ff.

⁵ *Ibid.*, 1940-1, pp. 92 ff.