

Macro- and Micro-Land Division in the Later Prehistoric Period: Aerial Survey, Pit-Alignments and GIS in South-east Scotland

South-east Scotland, an area some 80 km by 80 km in extent, is characterised by its low rounded hills up to 600 m in height, heather-covered on the higher slopes, cut by narrow valleys, and bounded on the north by the broad estuary of the Firth of Forth and a wide coastal plain, on the east by the North Sea, on the west by higher hills of similar form, while to the south the border with England is formed, in part, by the River Tweed, but, for the most part, by hedges and stone walls in farm land, cultivated similarly on both sides of the line. The Royal Commission on the Ancient and Historical Monuments of Scotland has been carrying out consistent aerial reconnaissance in south-east Scotland

for over twenty years. While the presence of pitted features had been recorded in earlier years in antiquarian accounts, as well as by aerial and field survey, it was in 1978 that an association was noted between pit-alignments and settlements appearing in cropmark and earthwork form and attributed conventionally to the Iron Age.

There are two main forms of linear boundary in the cropmark record, linear ditches and pit-alignments or interrupted ditches. They are paralleled as upstanding monuments by linear earthworks, which usually appear as a bank and a slight, presumably quarry, ditch and, in a very few examples, as a series of small,

Fig. 1. Transcription of Fort, Warlawbank, Horseley Hill, Scottish Borders



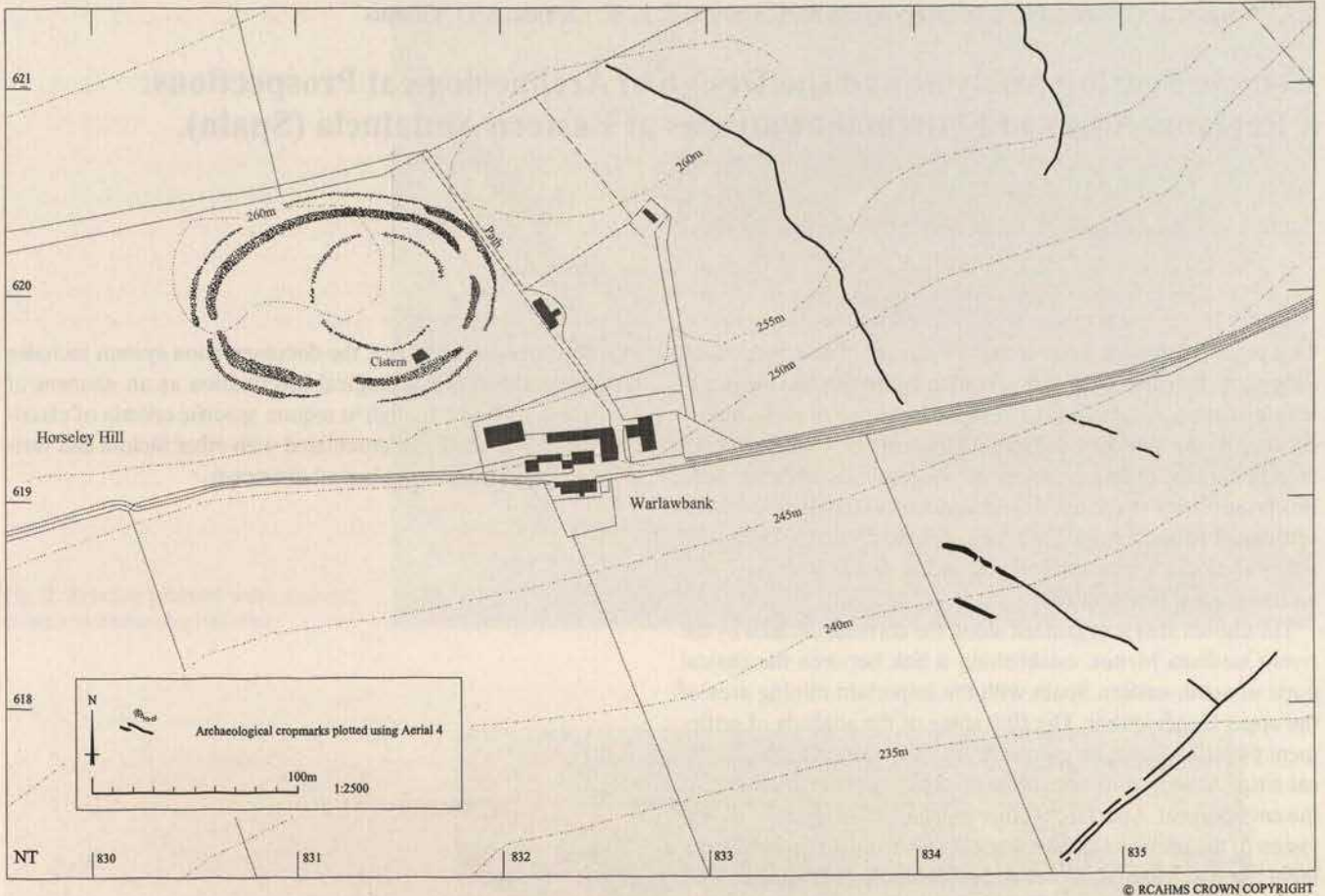


Fig. 2. Pit-alignments and settlements, East Field, Inveresk, Midlothian C26868 RCAHMS Crown Copyright

regular depressions, accompanied by a low bank, which match the pit-alignments. The pits are usually quite small, between 2 m and 3 m in diameter and often poorly defined. *Pit-alignment* is a convenient morphological term, which may be applied to monuments of different periods and cultures. Examination of the distribution patterns in GIS show a clear concentration in south-east Scotland, and in certain areas within it.

With the 1990s came a survey break-through, allowing the relationship between pit-alignments and linear cropmarks to be clearly established, and, with the advent of GIS in the Royal Commission, came the ability to view these very small individual features both in isolation and as part of larger grouping, which can, in the most extreme example, be seen to run for at least eight km. The digitised transcription and rectification of pit-alignments, linear cropmarks, the settlements with which they may be associated and earlier monuments, which may have had significance in the laying out of boundaries, and the incor-

poration of information into the GIS is time-consuming work, of which perhaps 20 % has been completed. Examples were recorded running uphill into the currently uncultivated moorland and even to the cliff edge above the North Sea, implying a completeness of control of the land, that required detailed physical boundaries defining small areas, which might be compared in scale to the modern field pattern, the product of enclosure between the late seventeenth century and the early nineteenth century. The results of a series of recent pollen analyses across southern Scotland and northern England would suggest that from about 350 cal. B.C., there was not a very considerable expansion in the intensity with which agriculture was practised across the area, and this dating would not conflict with field survey. The evidence for an ordered and complex system of land division in south-east Scotland is considerable, and necessarily raises questions about the social organisation of the inhabitants of the area before the advent of the Romans.