

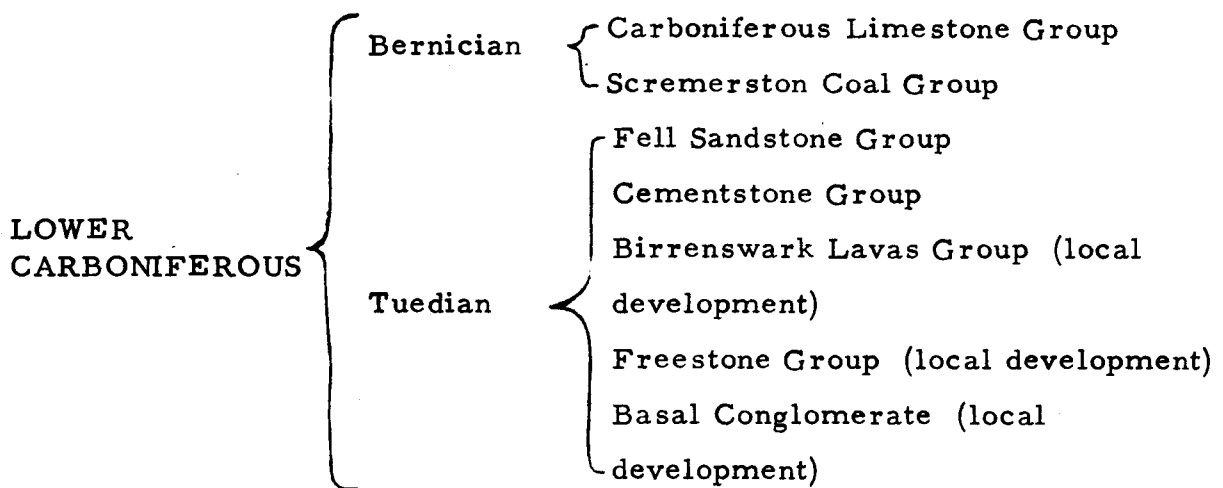
THE PREHISTORIC FIELD SYSTEMS OF COLLEGE VALLEY :  
NORTH NORTHUMBERLAND

P. Topping

The principal aim of this survey was to produce as near as possible a total landscape survey. In other words, rather than produce a catalogue of surveys of individual sites, it was decided to attempt to relate these sites to their associated features to establish exactly how they interacted with their environment, and in addition the degree of interaction between sites. Thus it was hoped that by retrieving as far as possible the past land use systems in this remote valley in North Northumberland, a better understanding of past systems of exploitation, and indirectly some idea of social organisation, might emerge.

GEOLOGY

The solid geology of the Cheviot Hills is typified by a lava dome with a granite intrusion, this formation being mantled by sedimentary rocks of Old Red Sandstone and Carboniferous ages. The stratigraphical column can be summarised as follows:



UPPER OLD RED SANDSTONE AND MARLS

LOWER OLD RED SANDSTONE AGE LAVAS (andesite, trachyte, felsite, rhyolite), tuffs and granite, (Tomkeieff 1965, I).

# COLLEGE VALLEY : LOCATION AND ENVIRONS

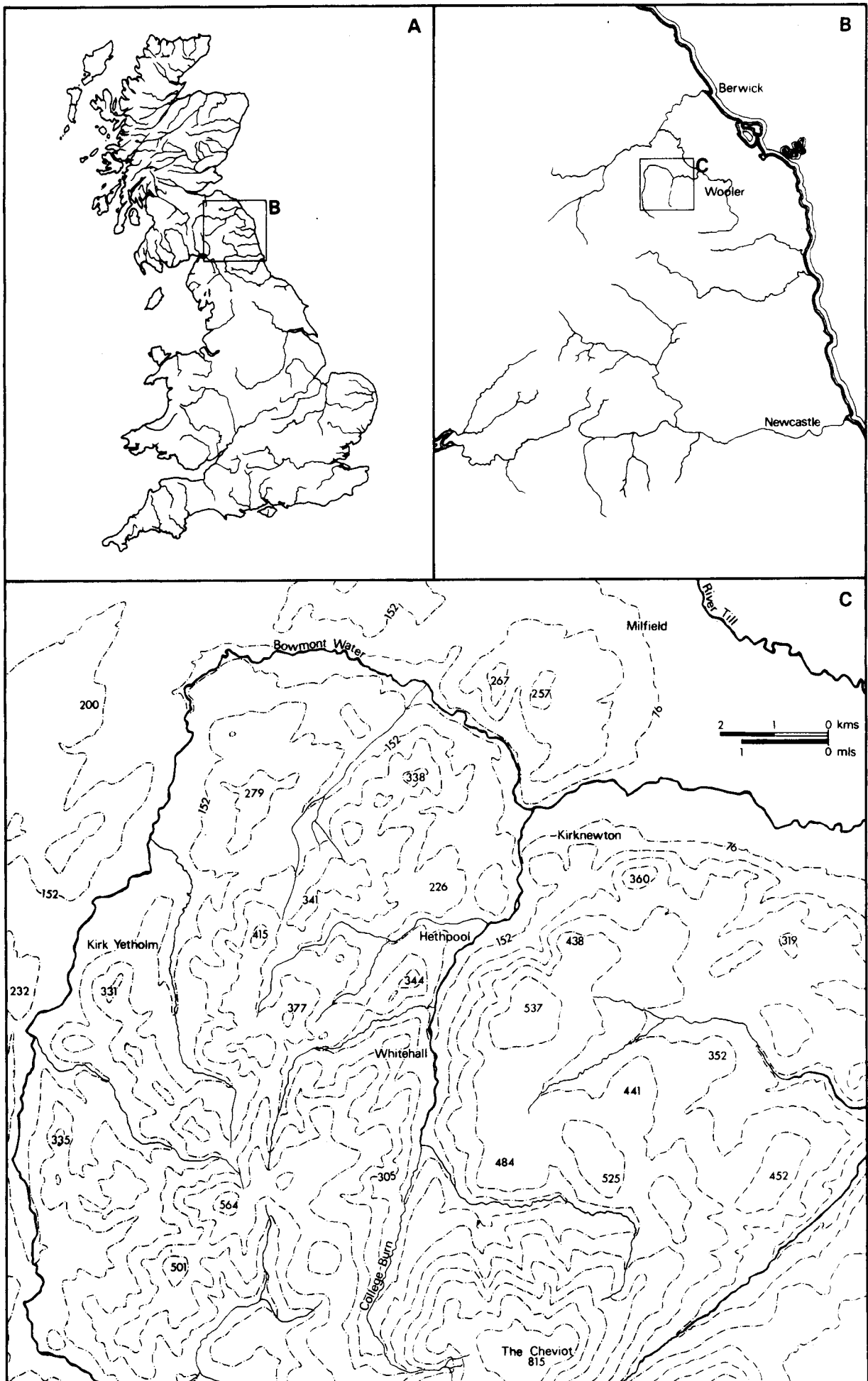


Fig. 4 College Valley : location map

The geology of the College Valley is characteristic of this generalised picture, the valley is steep-sided, its morphology and associated features suggesting a certain degree of glacial action. Tomkeieff (ibid., 7) has suggested that the valley held a glacier for an uncertain length of time, and his statement gains some validity from the evidence of the two corries, Hen Hole and Bizzle Crag, at the head of the College Burn, both of which have terraced rocky ledges suggesting 'trap featuring'. In addition the lower end of the valley has a rock dam mantled by a moraine which deflects the stream to the east, a further feature indicative of the existence of a glacier.

The three hills which form the rock dam, White Hill, The Bell and West Hill, comprise of altered amygdaloidal and vesicular lavas. These lavas extend up the valley where at Loft Hill to the west of Whitehall Farm they are intruded by a sill of red microporphyrte. Towards the head of the valley the geology of The Schil is typified by coarse purple and black andesite lavas with intrusions of black and red banded pitchstone-andesite lava flows.

## PREHISTORIC FIELD SYSTEMS

### 1. Site Location

The prehistoric field systems of the College Valley are situated in, and were designed to exploit, both the flat glacial terraces of the valley bottom and the more gentle slopes of the valley sides. Many of the steeper gradients must have been largely inaccessible to exploitation through the existence of scree slopes, a feature making farming practices impossible. In addition the existence and exploitation of natural woodland may also have affected site location strategies on the slopes of the valley sides.

The largest field system is that at South East Whitehall (fig. 6) situated on the eastern slopes of the valley. The field system has been carefully positioned between a large area of scree on its south side and a stream cutting through a fairly deep ravine to the north. The area exploited is well drained and lies largely between the 600' (182.8 m) and 1100' (335.2 m) contours, basically from the slopes beginning at the valley floor almost to the uppermost slopes of the valley side. Water is available from two streams, the previously mentioned example to the north, and a further stream immediately to the south of the field system. In addition there is the major water source of the College Burn itself in the valley bottom, a source which may have been particularly useful in periods of drought when the two smaller streams may have been threatened.

One disadvantage with the location of this field system which may have had a considerable impact on the communities inhabiting it, is that from late November to roughly the end of March, through the effects

# COLLEGE VALLEY, NORTHUMBERLAND.

- 1 HETHPOOL STONE CIRCLE
- 2 NORTH-EAST WHITEHALL FIELD SYSTEM
- 3 EAST WHITEHALL FIELD SYSTEM
- 4 SOUTH-EAST WHITEHALL FIELD SYSTEM
- 5 SOUTHERNKNOWE FIELD SYSTEM



Fig. 5 College Valley : location of field systems

of a lower declination followed by the sun, most of the eastern slopes of College Valley are in shadow until late morning. This may have considerably affected the capacity of these communities to cultivate winter species of cereals since not only would it have restricted sunlight but also temperature.

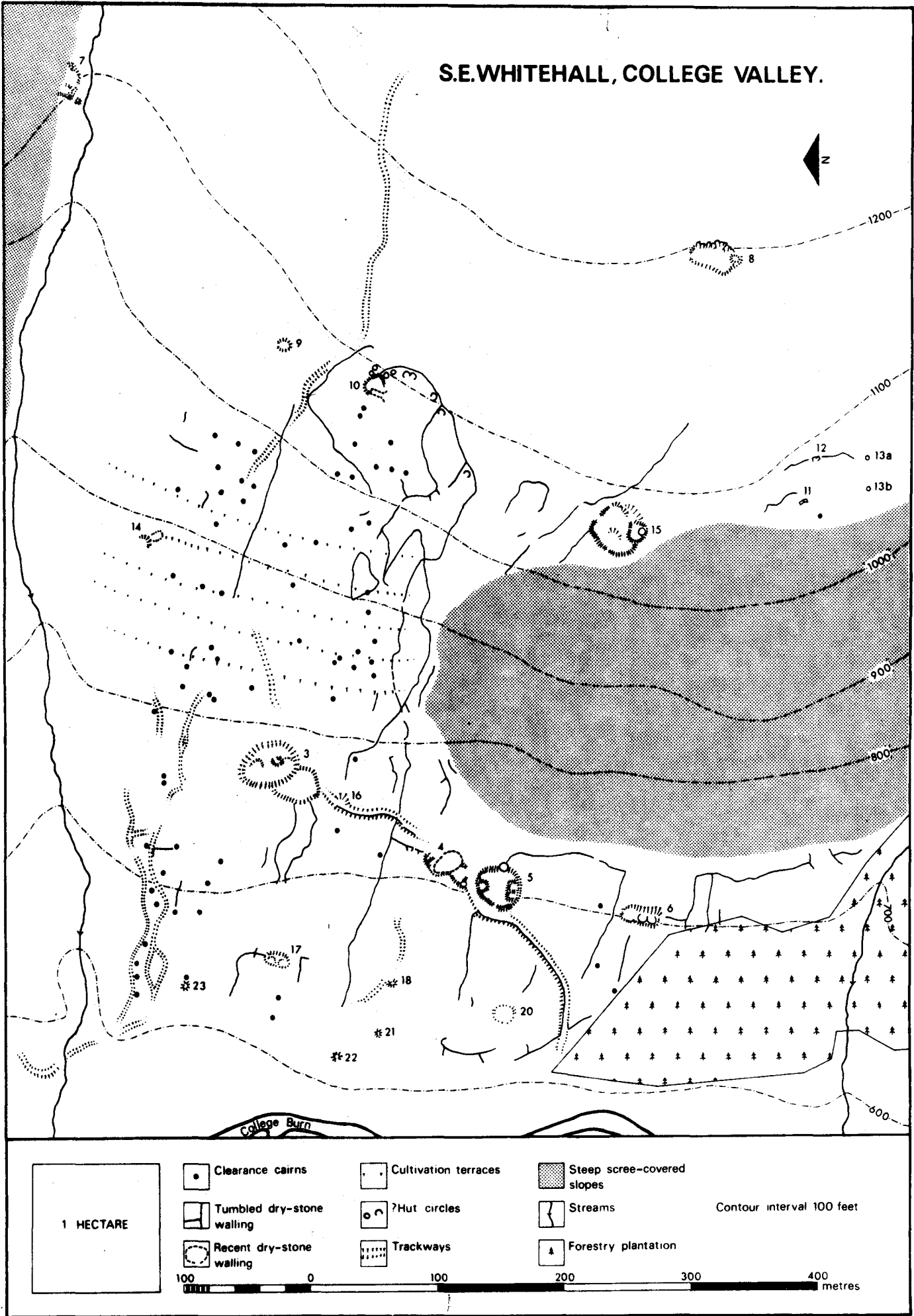
A similarly affected area would have been the small cairnfield immediately to the north at East Whitehall (fig. 7), which is probably simply an adjacent extension of South East Whitehall, and would also have suffered from restricted sunlight during the winter months, as would the fragmentary field system of North East Whitehall (fig. 8). This field system lies across much more gradual sloping contours than South East Whitehall, although the area is no less well drained. Here, however, the principal water supply must have been the College Burn as unlike South East Whitehall it has no immediately adjacent streams.

The only prehistoric field system in the College Valley that exploits the relatively flat valley floor is that at Southernknowe (fig. 9). The main source of water for this area is the College Burn itself, however because this area is so low lying it may have been susceptible to flash flooding at certain times in the year.

## 2. Morphology and function

The settlement sites which have been incorporated into the College Valley field systems can be broken down into two basic types, the enclosed and the unenclosed sites. Within these two basic categories there is a certain degree of variation, reflecting the scale of interaction with the local environment and the economic and functional requirements of the inhabitants (cf. fig. 10).

Of the unenclosed sites the single isolated hut circle, of drystone construction, is the most common form, and such sites generally have a random distribution at varying altitudes throughout the field systems. They appear to be directly contemporary with the drystone field walls, and many appear to have been purposefully joined to these walls, as has happened with the uppermost field walls at South East Whitehall (cf. fig. 6), or in the disturbed remains at Southernknowe (viz. CV 29, cf. fig. 9). Consequently it seems most probable that this type of site is among the earliest, if not the earliest, form of settlement in this area, and would suggest that the initial colonisation of the valley although of a scattered nature, tended to cluster on the most fertile or easily accessible areas, a fact backed up by the Broad Moss pollen diagram (discussed below). As a result because of the limited surface area of these exploitation zones a system of land division would have been a necessity, perhaps reflecting an extension of communal cooperation or dominance by a hierarchy begun with the tradition of henge-monument construction on the nearby Milfield Plain, (cf. Harding, 1980, forthcoming).



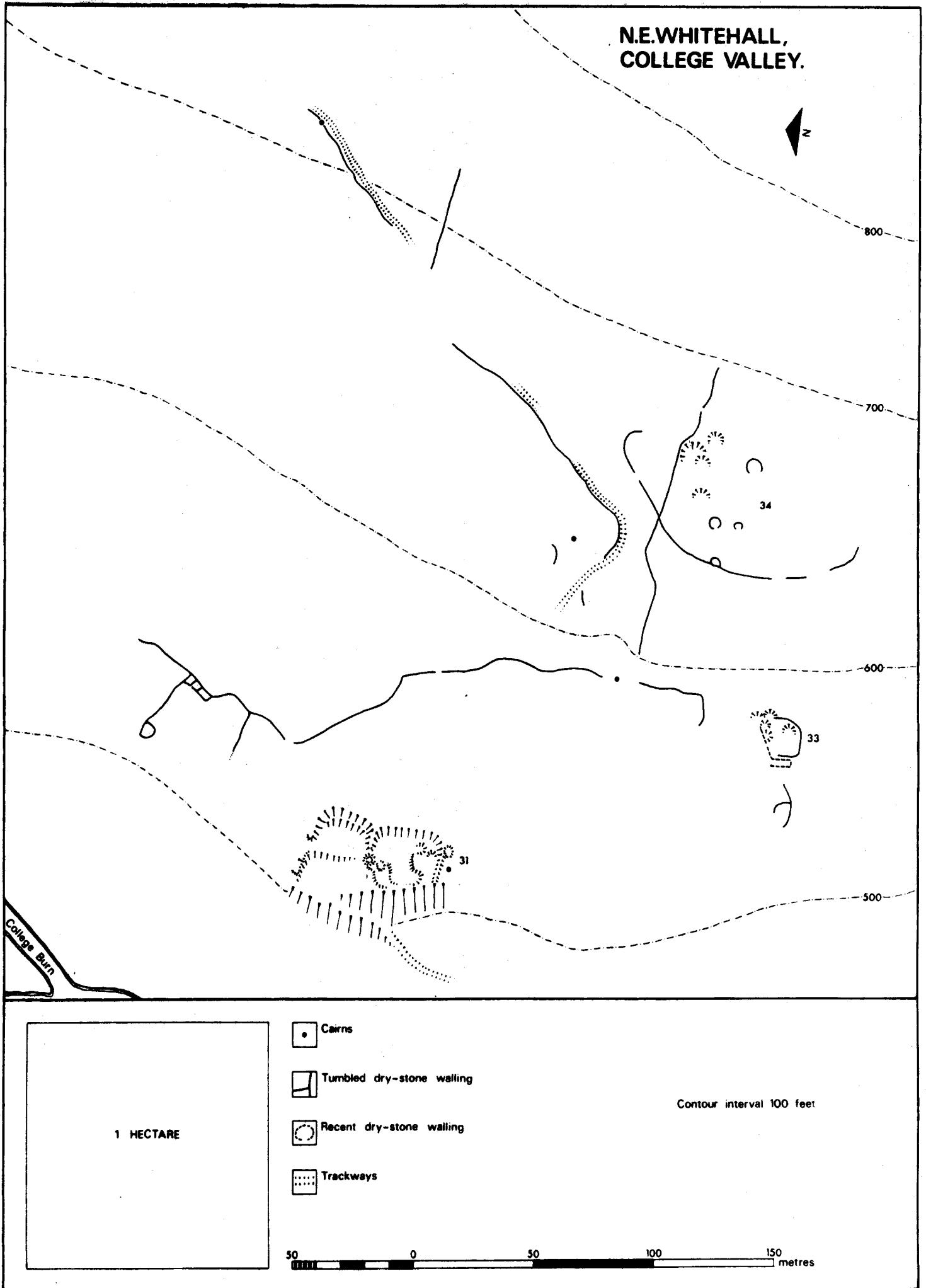
**Fig. 6 South-East Whitehall field system**



Fig. 7 East Whitehall field system

Functionally, the association of the isolated hut-circles with the field systems would seem to suggest that the economy of these settlements had a substantial cereal component. That these areas were cultivated is implied by the existence of numerous clearance cairns, seventy three in South East Whitehall in an enclosed field system of roughly 14 hectares in area. The small adjacent cairn-field at East Whitehall, which may be a northerly extension of the South East Whitehall system, has 19 cairns in a surface area of no more than three hectares. It would seem most likely that the cairns, and to some extent the field walls themselves, were used as repositories for stones upturned during the process of ploughing, although grazing strategies may also have resulted in this (cf. Bradley 1978, 18).

The field system at North East Whitehall may have a different economic emphasis, a fact suggested by the existence of only three clearance cairns and the lack of unenclosed hut-circles in the area. The exact nature of the Southernknowe field system is more difficult to determine due to the later disturbance from ridge and furrow, however CV 29, although fragmentary, seems again to suggest the pre-existence of unenclosed hut-circles within a field system delineated by boundary walls.



**Fig. 8 North East Whitehall field system**



Comparative forms of field system in other areas, most notably Dartmoor, have had a similar functional hypothesis postulated by inference derived from the structural remains (Fox 1973, 110-112). Similar evidence has been recorded in Wales and the Scottish Border (Feachem 1973), while there are also strong parallels with the more low-lying irregular field system at the Scord of Brouster in the Shetlands which also features scattered hut-circles amongst a field system which contains numerous small stone clearance cairns (Whittle 1979, 168).

The enclosed settlement form has a widespread distribution throughout the Borders (R. C. H. M. 1956; R. C. H. M. 1967; Jobey 1962 etc.), its most common form in the College Valley being the partially enclosed type. This may represent the growth and chronological development of the site by the addition of further hut-circles, or the conversion of an unenclosed site to an enclosed form by the addition of an enclosure wall. The fact that these sites are now enclosed by substantial walls, which are clearly of a non-defensive nature, must reflect a shift of emphasis in the economic systems now being exploited. The similarity of these enclosures to recent sheep folds in the locality, and possible parallels from the ethnographic record with use as animal kraals (Colson 1962, 154; Leakey 1977, 109; Forde 1934, 293) would seem to suggest a move towards stock agriculture. If this supposition is correct, then the provision of shelter for a group of animals when needed against the vagaries of the weather or predation would have noticeably improved their productivity (Nichols 1960).

An additional factor which would seem to lend support to the hypothesis of stock raising is the fact that the location of the majority of enclosed settlements appear in areas of flush grazing. This occurs in zones where the soil's nutrients are constantly replenished, notably along stream margins such as at Southernknowe or the lower sections of the South East Whitehall field system. These areas are typified by stands of bent-fescue grassland (*Agrostis-Festuca* sp.), species which withstand heavy grazing and provide valuable nutrition for sheep in upland areas where more luscious herbage plants do not thrive (Hubbard 1968, 131; Lunn 1976). Consequently, it seems more than likely from inference that whereas the unenclosed settlements and their associated field systems followed an economy which principally focussed on cereal agriculture, the enclosed sites, which seem unlikely to be contemporary with the unenclosed sites, appear to have shifted their emphasis to stock-agriculture, possibly as a response to changes in the local climate and environment.

### 3. Site Location Strategies

The site location strategies relating to the apparently sedentary populations of the College Valley, and in particular the South East Whitehall field system, appear to have been initially linked to the exploitation of the most productive soils of the valley floor along

# SOUTHERNKNOWE, COLLEGE VALLEY.

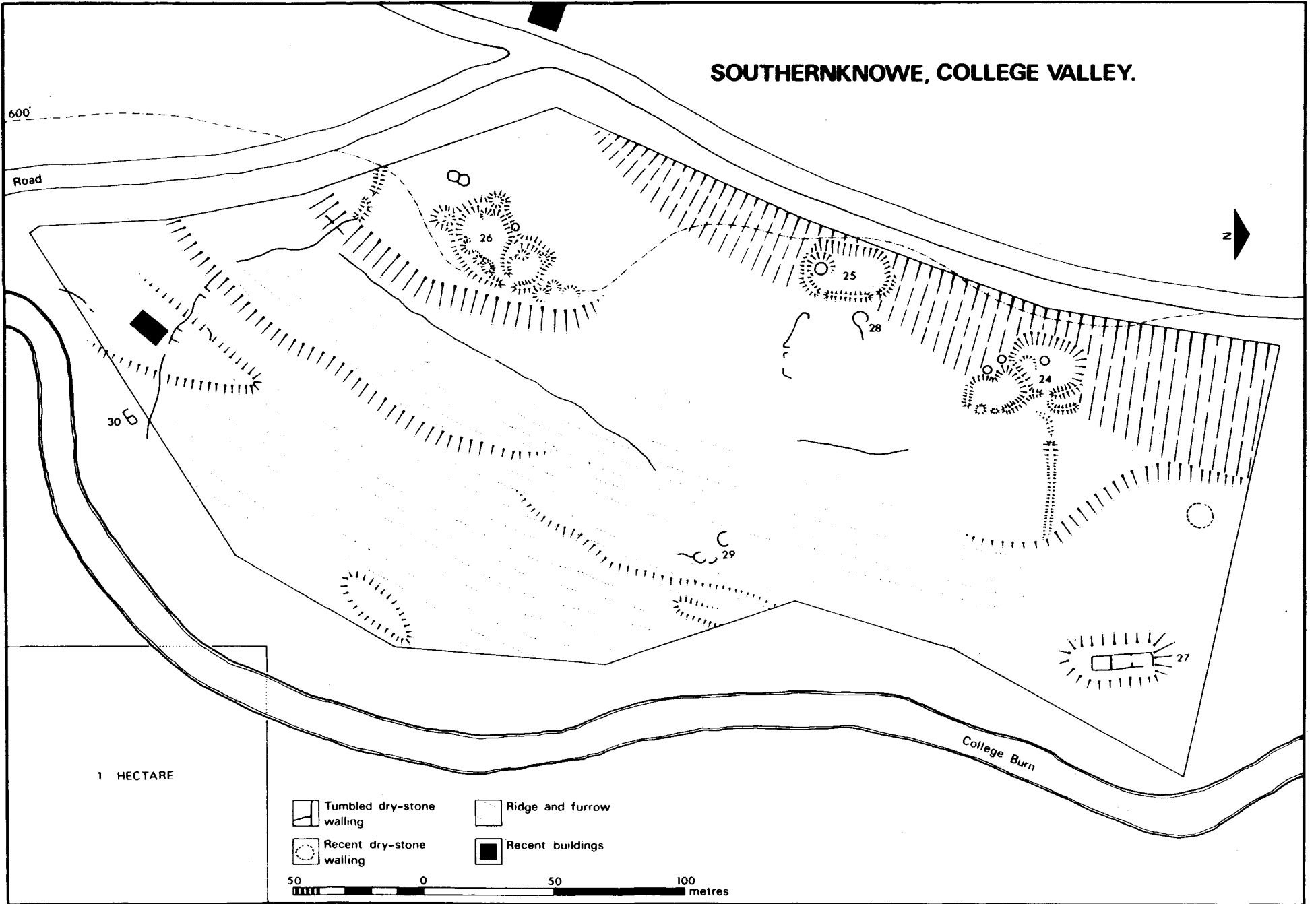


Fig. 9 Southernknowe field system

with selected areas of the valley sides. As can be seen in fig. 8 most of the land within a 5 km radius of South East Whitehall lies close to or above 305 m (1000 ft.) O.D. The upland topography of this area would have had a substantial limiting effect on communication and movement, and thus will have restricted the potential zone of exploitation. Nevertheless, if one uses the model of exploitation territories proposed by Vita-Finzi and Higgs (1970) which suggests an area of exploitation for sedentary communities of within one hour's walk or 5 kms radius of the settlement, although in the case of South East Whitehall and the College Valley this may be over generous from the point of view of topography, it does provide a rough outline of possible exploitation strategies utilised by these settlements.

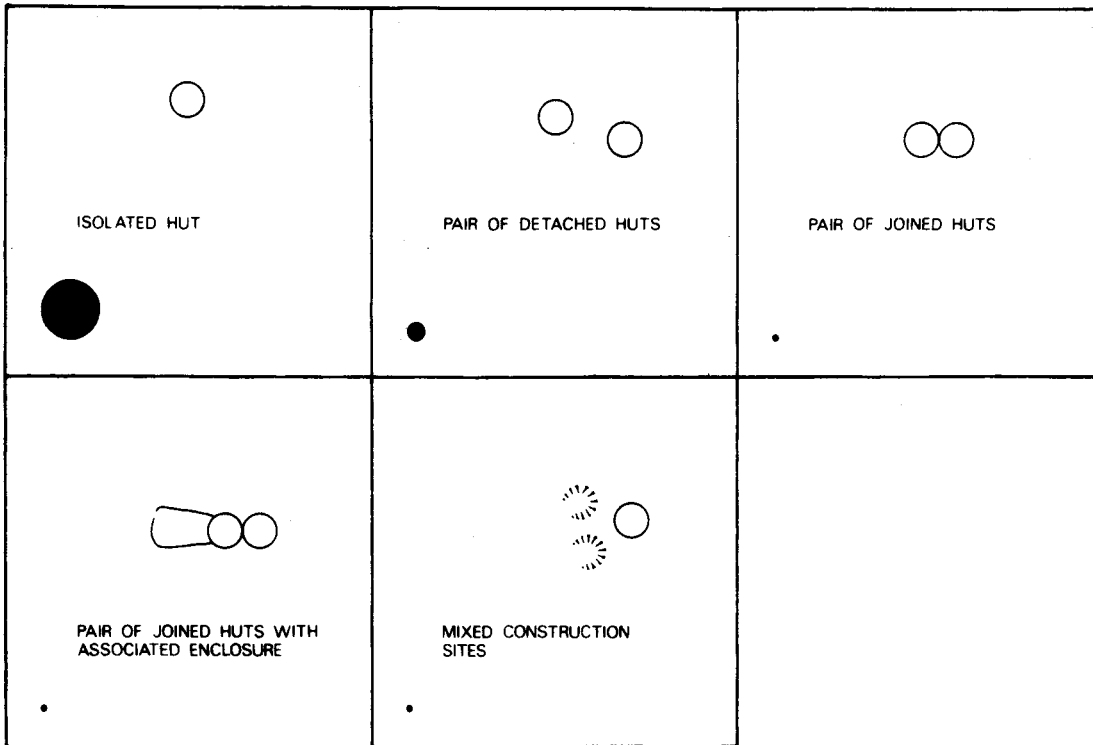
Hodder and Orton (1976, 236) have suggested the necessity of developing the validity of site-catchment analysis by a more detailed study of past environments and soil conditions. Unfortunately little environmental evidence is available for this part of the Cheviots, although the nearby Milfield Plain and the Wooler area have been widely studied (Clapperton, Durno and Squires 1971). However there is one relevant pollen diagram from Broad Moss in the Harthope Valley, a site within 6 km of South East Whitehall, which must have a bearing on the interpretation of settlement patterns in College Valley.

From the soil map on fig. 11 it can be seen that the principal soil type of the valley floor and lower slopes are the brownearth forms. This soil type is characteristic of mixed deciduous woodland, an environment which serves to maintain its structure and drainage. However microclimatic variation can lead to the partial breakdown of the crumb structure, especially following the removal of the woodland canopy (Evans 1978. 76). It will be noted that the higher altitudes of the South East Whitehall field system are typified by podzols and peaty gleys, possibly resulting from such a disruption of this microclimatic stability of the brownearth system. Smith (1975) has shown by several case studies that although agriculture is a major agent in soil degradation, the long term demands and influence of pastoralism may have been more influential. Pastoralism of necessity needs large tracts of land for grazing, so the consequent disruption to the woodland microclimate may have prompted the degradation of brownearths to podzols through the increased action of environmental factors.

This picture would tie in with the pollen diagram from Broad Moss which was taken at an altitude of c. 351 m O.D. (Davies and Turner 1979, 783-804). Although this pollen diagram was not dated by radiocarbon techniques but cross-dated with others from a series throughout Northumberland, it seemed to suggest that the Cheviots were only finally cleared of woodland at the beginning of the Roman period. This would explain why settlement patterns and the field systems are in relatively restricted areas, basically because they were limited by the extent of woodland clearance.

# SITE MORPHOLOGY

## UNENCLOSED SITES



## ENCLOSED SITES

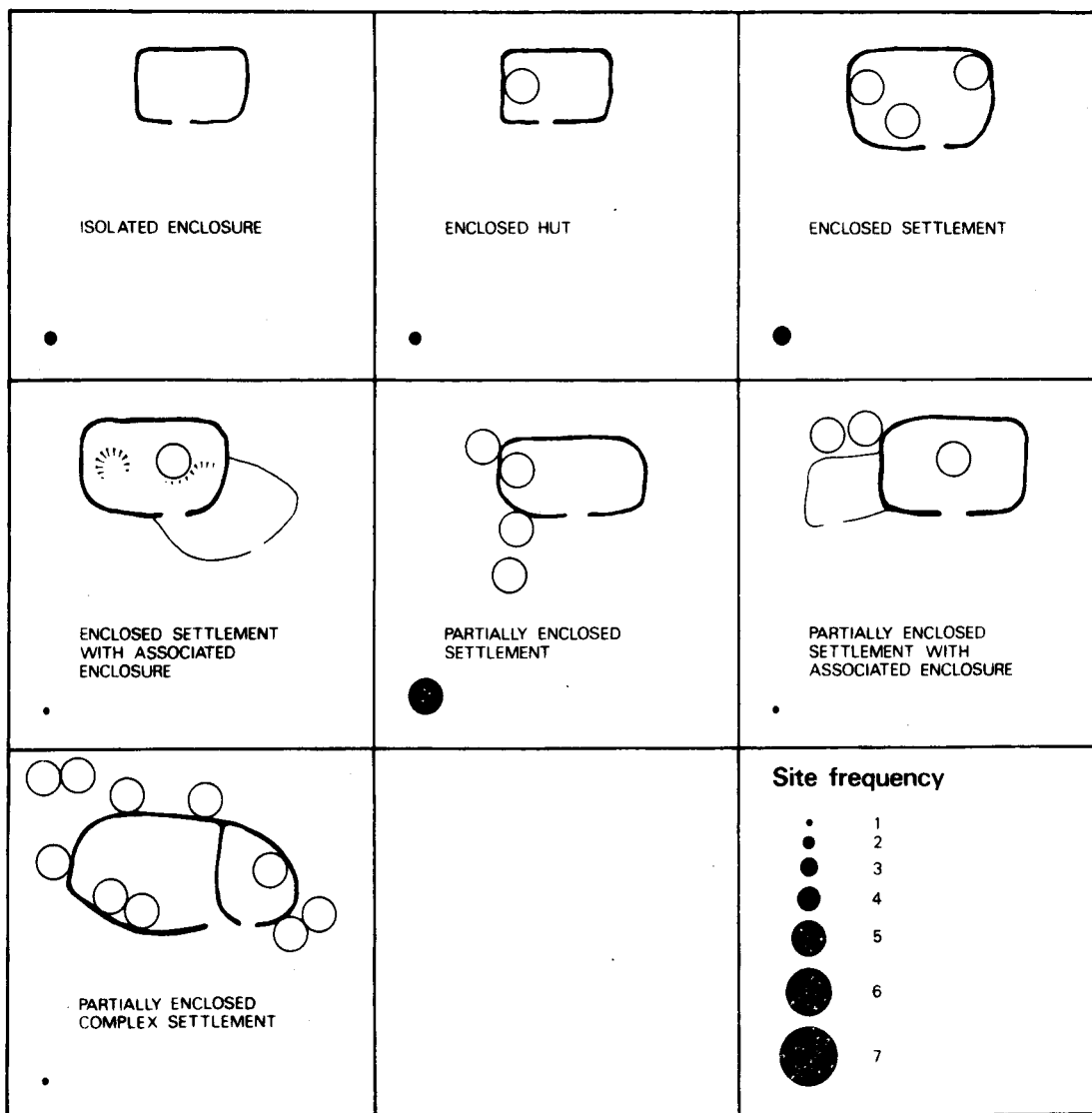


Fig. 10 Site Morphology

It must have been this constraining factor which determined the situation and development of settlement in the valley. In addition, through the agencies of clearance and cereal-agriculture the processes of soil-degradation were intensified with the consequent development of the higher altitude podzols which will have increased in area as forest clearance itself became more extensive, a situation already recognised in North Yorkshire (Dimbleby 1962).

If this interpretation is correct then the subsistence economy of the primary phase of colonisation may have largely relied upon cereal agriculture during the period of maximum fertility of the soil following the initial clearances. However, after an unknown period of exploitation it appears that the effects of soil degradation will have made the soils of the valley slopes comparatively unproductive, so a shift in economic emphasis may have been necessary and stock-agriculture becomes predominant and the development of enclosed settlements takes place. Exploitation zones on the valley floor, such as Southernknowe, through the maintenance of prime soil conditions, may have maintained a dependance on cultivation.

Alternative secondary subsistence strategies will have centred around the available woodland and the exploitation of its floral and faunal spectrums. If, in addition, as certain ethnographic studies have suggested, relatively little time was needed to maintain cereal crops in primitive situations, then hunting and gathering may have extended to a radius of 10 kms from South East Whitehall, taking in varied upland environments and parts of the low-lying Milfield Plain.

The woodland may also have been exploited for building materials and fuel, whilst the extensive scree slopes will have provided a ready source of stone for building. As can be seen in figures 1 and 8 the water supply in this area is plentiful, in addition to providing a variety of alternate environments for exploitation.

Unfortunately without the aid of excavation the effects of cross cultural contact and the extra-territorial trade and exchange networks which may have influenced the economies and social patterning in College Valley cannot be recovered. This omission can only be completely remedied by a selective excavation strategy and a study of a more complete archaeological record, not simply its current surface manifestations.

#### 4. Discussion and chronological speculation

If the environmental evidence and the inference of economic strategies discussed above are correct, then it is possible to tentatively propose a developmental sequence for the field systems in the College Valley. Following the excavation of the unenclosed platform settlement at Green Knowe, Peeblesshire (Jobey 1980), and the subsequent excavation of a similar settlement at Houseledge, Northumberland

Site location strategies centred on the S.E.Whitehall field system

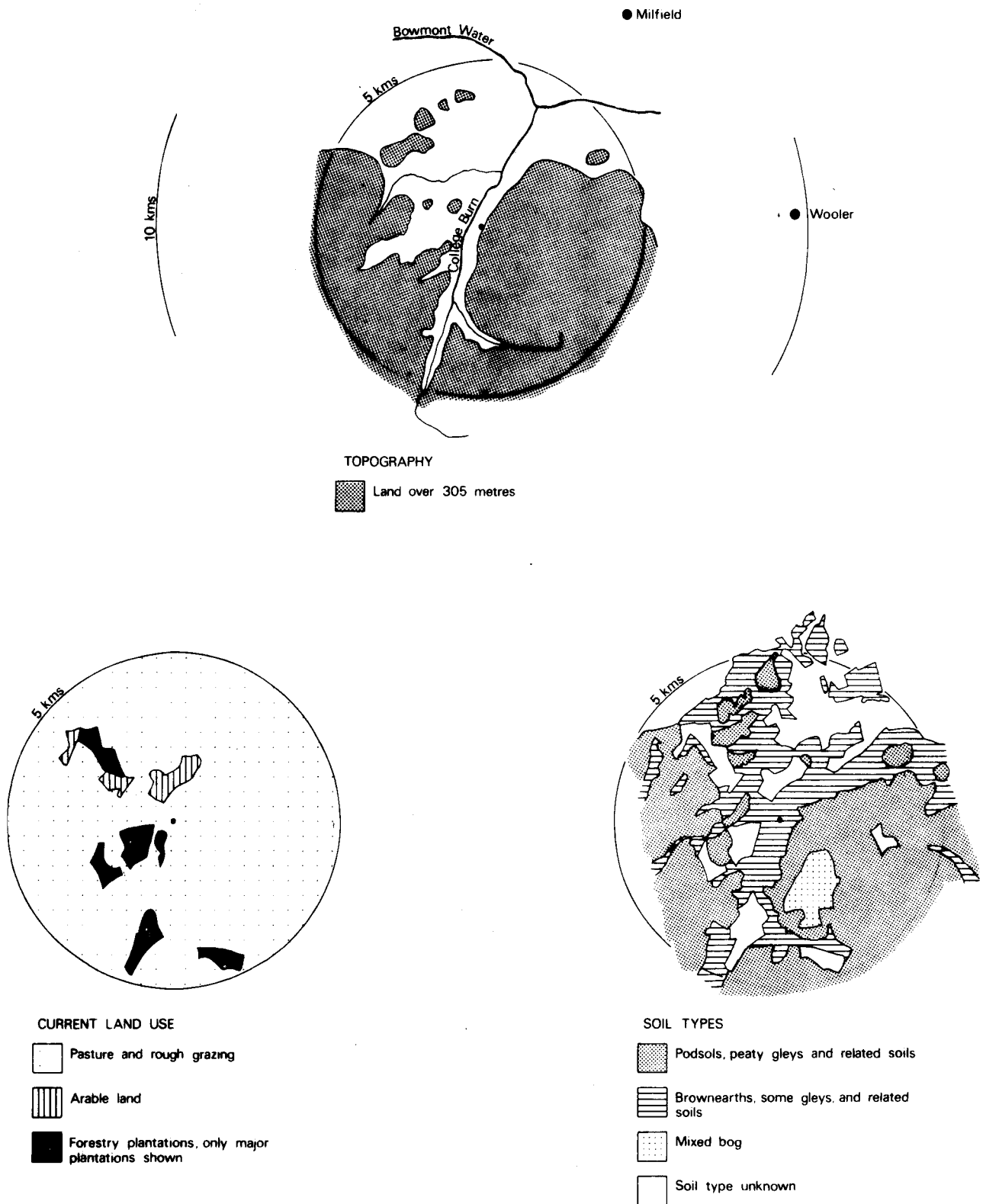


Fig. 11 Site location strategies

(Burgess 1980 A), it is now apparent that there is a much greater chronological depth to the settlement patterns in the Cheviots than had previously been suspected. Both of these sites date to the Middle and Early Bronze Ages respectively, with the possibility of earlier settlement evidence at the Houseledge site.

It seems likely that the Houseledge settlement, along with other local examples of this form of site, reflects movement by the Neolithic communities of the Milfield Plain onto the upland areas for the purpose of clearance and colonisation during the climatic optimum spanning the Atlantic and Sub-Boreal periods, pollen zones VIIa and VIIb, a period typified by anticyclonic, very warm summers and cyclonic wet winters (Taylor 1975, 11). In other areas of highland Britain, such as Wales and south west England, this settlement form of unenclosed hut-circles and associated field systems has already been chronologically ascribed to the late Neolithic through the early to middle Bronze Ages (Feachem 1973). Notable examples include such sites as Stannon Down on Bodmin Moor (Mercer 1970) and Swine Sty, Derbyshire (Burgess 1980 B, 233). Locally, the field system of Chatton Sandyford, Northumberland, contained many clearance cairns, five of which were excavated yielding three Beaker inhumations and two cremations, one in an Enlarged Food Vessel. A radiocarbon date of 1670 ± 50 b.c. was obtained for the earliest Beaker burial (Jobey 1968; Feacham 1973). Quite clearly there is now sufficient evidence from various areas of the highland zone to establish a late Neolithic/early Bronze Age date for the establishment of these field systems, although it should be remembered that morphologically this form does continue in use during the latter half of the first millennium BC at sites such as Kilphedir, Sutherland (Fairhurst and Taylor 1981).

Typologically the unenclosed hut-circles and field boundaries of South East Whitehall would appear to fit into this category, and the fragmentary remains of hut-circles and field walls (CV 29 and CV 28) in the field system at Southernknowe seem also to be of similar form. The lack of unenclosed sites in the North East Whitehall field system may suggest a later date for the onset of the economic exploitation of this area.

If the above suggestions are correct, then the initial colonisation of this area was typified by a certain amount of cereal cultivation which may have flourished during the relative warmth of the climatic optimum when the newly cleared soils would have been at a stage of maximum fertility. Economic supplements would have been gained from hunting and gathering, both activities would have been aided by the adjacent areas of uncleared deciduous woodland.

The termination of this phase typified by the predominance of cereal cultivation again can only be inferred. The continual exploitation of the soils in the field systems of the valley sides coupled with increased erosion due to the loss of the woodland canopy, may well have resulted in the podzolisation of previous brownearth soils (cf. fig. 11) as has been noted in North Yorkshire where soils

ALTITUDINAL DISTRIBUTION OF SITES IN COLLEGE VALLEY

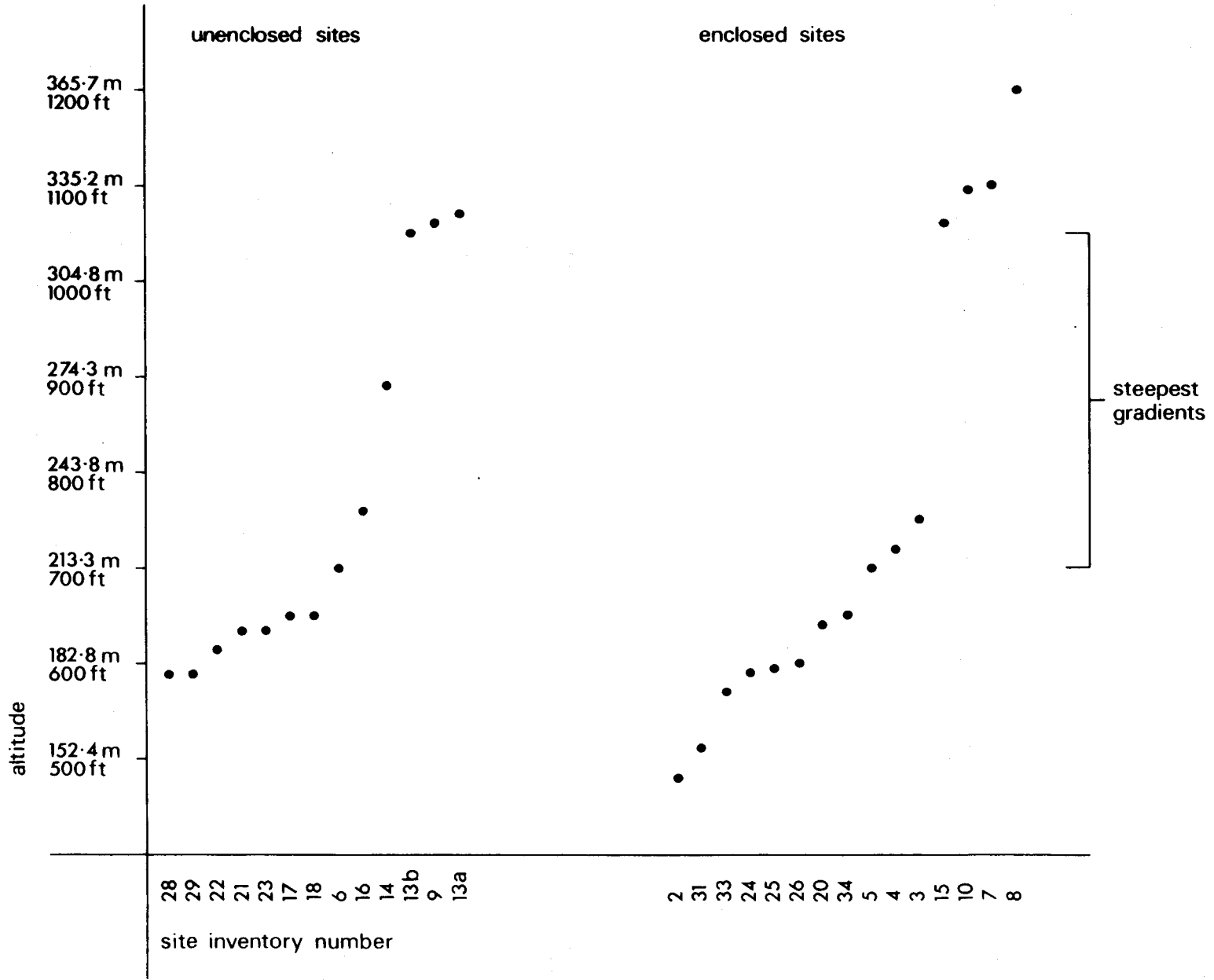


Fig. 12 Altitudinal distribution of sites in College Valley



associated with Neolithic and Bronze Age monuments became podzolised (Dimbleby 1962). In addition, the climatic deterioration which coincided with the onset of the Sub-Atlantic period, c. 900-400 BC, which saw the advent of cool summers, unsettled winters and increasing cyclonic activity throughout the seasons, (Godwin 1960; Taylor 1975, 11) may well have forced the communities in the valley to redevelop their economic strategies. Consequently it may have been during this period that the transformation from the predominance of cereal cultivation to stock agriculture occurred. This is represented by the enclosed settlements which may have functioned as animal kraals. From their spatial distribution and the fact that they exploit largely the same altitudes as the unenclosed sites (cf. fig. 12), and that potentially transitional forms may be represented by the partially enclosed sites, suggests that there was a gradual changeover to the newer economic strategy rather than a drastic depopulation of the hills followed by re-colonisation at a later date.

The dating of the enclosed sites is again beset with problems accompanied by a dearth of scientific dates. In the adjacent area of the Hetha Burn valley, a scooped settlement produced fragments of Neronian glass (Burgess 1970, 24) from its latest phases, but the beginning of the settlement was typified by a large diameter timber building set on a platform very reminiscent of the type found at Green Knowe. The similarity of many of these sites to some of the Late Bronze Age settlements of southern England such as Itford Hill or New Barn Down has already been noted (Jobey 1962, 57), but until further evidence becomes available it is difficult to add further to this speculation.

So to summarise, if the above speculation is accurate, the South East Whitehall field system and the earliest field system at Southernknowe became established sometime during the late Neolithic and Early Bronze Age period, and principally developed cereal cultivation in the area. That late Neolithic-Early Bronze Age activity existed is borne out by the presence of the stone circle at Hethpool at the entrance to the valley (Topping, 1981, forthcoming).

However with the appearance of the Sub-Atlantic climatic deterioration, which coupled to probable soil degradation on the slopes of South East Whitehall, the communities on the valley sides were forced to convert the emphasis of their economies to stock-based agriculture to compensate for the inevitable decline in crop yields. This settlement pattern and economic strategy will then have become firmly established through the course of the first millennium BC and into the Roman period, as shown by the finds from the Hetha Burn site. It is only the areas of the valley floor such as Southernknowe where the soil type remained a brownearth that cultivation may have outlived that at South East Whitehall, but for whatever length of time is another unknown factor.

## ACKNOWLEDGEMENTS

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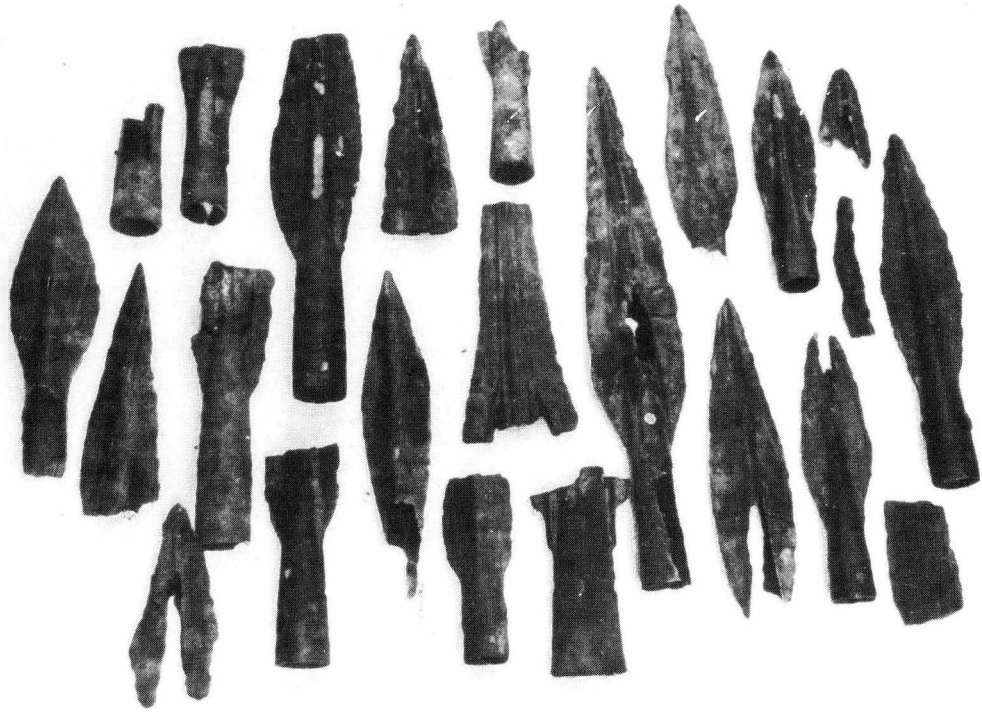
## BIBLIOGRAPHY

- Bowen, H. C., and Fowler, P. J., (1978) Early Land Allotment, B. A. R. 48.
- Bradley, R., (1978) The Prehistoric Settlement of Britain.
- Burgess, C. B., (1970) Excavations at the Scooped Settlement Hetha Burn I, Hethpool, Northumberland. Transactions of the Architectural and Archaeological Society of Durham and Northumberland, Vol. II.
- Burgess, C. B., (1980 A) Excavations at Houseledge, Black Law, Northumberland, and their implications for earlier Bronze Age settlements in the Cheviots, Northern Archaeology 1, part 1.
- Burgess, C. B., (1980 B) The Age of Stonehenge.
- Clapperton, C. M., Durno, S. E., and Squires, R. H., (1971) Evidence for the Flandrian History of the Wooler Water, Northumberland, Provided by Pollen Analysis, Scottish Geographical Magazine Vol. 87, No. 1, April, 1971.
- Colson, E., (1962) The Plateau Tonga of Northern Rhodesia.
- Davies, G., and Turner, J., (1979) Pollen Diagrams from Northumberland, New Phytologist 82.
- Dimbleby, R. C., (1962) The development of British Heathlands and their soils, Oxford Forestry Memoir No. 23.

- Evans, J. G., and Limbrey, S., (eds.) (1975) The Effect of Man on the Landscape : the Highland Zone, C. B. A. Research Report No. 11.
- Evans, J. G., (1975) The Environment of Early Man in the British Isles.
- Evans, J. G., (1978) Environmental Archaeology.
- Fairhurst, H., and Taylor, D. B., (1981) A Hut-Circle settlement at Kilphedir, Sutherland, P. S. A. S. 103
- Feachem, R. W., (1973) Ancient Agriculture in the Highlands of Britain, P. P. S. 39.
- Forde, C. D., (1934) Habitat, Economy and Society.
- Fox, A., (1954) Celtic Fields and Farms on Dartmoor, in the Light of Recent Excavations at Kestor, P. P. S. 20.
- Fox, A., (1973) South West England.
- Godwin, H., (1960) Prehistoric Wooden Trackways of the Somerset Levels, P. P. S. 26.
- Harding, A. F., (1980) Excavations at Milfield, Northumberland, P. P. S. (forthcoming).
- Hodder, I., and Orton, C., (1976) Spatial Analysis in Archaeology
- Hubbard, C. E., (1968) Grasses
- Jobey, G., (1962) A note on scooped enclosures in Northumberland . Archaeol. Aeliana 4th series, XL.
- Jobey, G., (1965) Hillforts and settlements in Northumberland, Archaeol. Aeliana 4th series, XL III.
- Jobey, G., (1966) Excavation on palisaded settlements and cairnfields at Alnham, Northumberland, Archaeol. Aeliana 4th s. XLIV.
- Jobey, G., (1968) Excavations of cairns at Chatton Sandycroft, Northumberland, Archaeol. Aeliana 4 s, XLVI.
- Jobey, G., (1980) Unenclosed Platforms and Settlements of the Later Second Millennium B. C. in Northern Britain, Scottish Archaeological Forum 10.
- Leakey, R. E., and Lewin, R., (1977) Origins.
- Lunn, A. G., (1976) The Vegetation of Northumberland. (map)

- Maxfield, V. A., (ed) (1979) Prehistoric Dartmoor in its Context, Devon Arch. Soc. Jubilee Conference Proceedings No. 37.
- Mercer, R., (1970) The Excavation of a Bronze Age hut circle settlement, Stannon Down, Cornish Arch. 9.
- Nichols, J. E., (1960) Shelter Needs in Relation to Land Use, Forestry 33.
- R. C. H. M. (Scotland) (1956) The County of Roxburgh.
- R. C. H. M. (Scotland) (1967) Peeblesshire.
- Smith, R. T., (1975) Early Agriculture and Soil Degradation, in The Effect of Man on the Landscape : the Highland Zone, eds. Evans, J.G., and Limbrey, S., C. B. A. Research Report No. 11.
- Taylor, J. A., (1975) The Role of Climatic Factors in Environmental and Cultural Changes in Prehistoric Times, in The Effect of Man on the Landscape : the Highland Zone, eds. Evans, J.G., and Limbrey, S., C. B. A. Research Report No. 11.
- Tomkeieff, S. I., (1965) Cheviot Hills, Geologists Association Guides No. 37.
- Topping, P., (1981) A Survey of College Valley, North Northumberland, B. A. Thesis, University of Durham.
- Topping, P., (1981) The Stone Circle at Hethpool, North Northumberland, Northern Archaeology (forthcoming)
- Vita-Finzi, C., and Higgs, E. S., (1970) Prehistoric economy in the Mount Carmel area of Palestine : site catchment analysis, P.P.S. 36.
- Whittle, A., (1979) Scord of Brouster, Current Archaeology 65.

Plate I



The Gilmonby, County Durham, Bronze Hoard.

Plate II

