

## I.

## CULTIVATION TERRACES IN SOUTH-EASTERN SCOTLAND.

BY A. GRAHAM, M.A., F.S.A.Scot., F.S.A.

## I. INTRODUCTORY.

The terraced hillsides of the eastern Lowlands have already formed the subject of four papers presented to this Society in the past,<sup>1</sup> but there are at least two good reasons for reopening the subject. In the first place, the current theory regarding the origin and date of similar remains in England<sup>2</sup> has recently become the subject of renewed controversy;<sup>3</sup> while, in the second place, the *Proceedings* papers just quoted, having been limited to the discussion of comparatively few examples, have prompted certain generalizations<sup>4</sup> which now, in the light of further data, no longer appear tenable. Actually the papers in question mention no more than twenty terrace-groups in Scotland and a further three in a neighbouring district of Northumberland; other publications<sup>5</sup> give notes of a small additional number, but the total amount of material thus made available for study is still meagre. I have therefore thought it worth while to consider the facts afresh, having first prepared as complete a list as possible of the terrace-groups and other analogous remains in the area dealt with.<sup>6</sup> And here I desire<sup>7</sup> to express my thanks to the Royal Commission on Ancient and Historical Monuments for having allowed me to include in this study some unpublished material collected by myself and its other officers in the course of our official duties. As a result of this permission I have been able to include in my list no less than a hundred and thirty-six sites; the great bulk of these I have walked over and examined myself, while all but a few of the remainder I have observed carefully with glasses from a suitable view-point.<sup>7</sup> I also wish to thank my colleagues on the Commission's staff for the valuable observations and suggestions that they have kindly put at my disposal, as well as numerous other friends who have helped me in one way or another.

<sup>1</sup> *P.S.A.S.*, i. pp. 127-33; lxii. pp. 107-20; lxv. pp. 388-98; lxvii. pp. 72-81.

<sup>2</sup> Seebohm, *English Village Community*, pp. 5 f.; Crawford, *Air Survey and Archaeology*, pp. 8-10; Congress of Archaeological Societies, *Report of the Thirty-ninth Congress and of the Research Committee for the Year 1931* (1932), pp. 30 ff.; *Antiquity*, i. pp. 273-81; iii. pp. 165 ff.; vi. pp. 389 ff.

<sup>3</sup> C. S. and C. S. Orwin, *The Open Fields*, pp. 319 ff., and *Antiquity*, xiii. pp. 45 ff.

<sup>4</sup> E.g. some of those summarized in *Antiquity*, vi. pp. 402-4.

<sup>5</sup> Gordon, *Itinerarium Septentrionale* (1726), pp. 41, 114 f.; Small, *Interesting Roman Antiquities recently discovered in Fife* (1823), p. 187; Wilson, *Prehistoric Annals of Scotland* (1863), i. pp. 491-2; *Proceedings of the Berwickshire Naturalists' Club*, viii. (1876-8), p. 424; *ibid.*, xi. (1885-6), p. 26; *ibid.*, xiv. (1892-3), p. 12; *Scottish Geographical Magazine*, xxxv. p. 303.

<sup>6</sup> The limits of this area are given on pp. 301-3 below and are shown on the map (fig. 2).

<sup>7</sup> Some practice is often required for the proper identification of terraces, as their appearance varies greatly according to the strength and direction of the light and the state of the vegetation.

## II. LITERARY EVIDENCE.

By way of clearing the ground before proceeding to consider actual observations, it will be well to glance at such literary sources as might be expected to contribute something to the inquiry. The most recent of the relevant works are probably the volumes of the series of *General Views* of the agriculture of the various counties, prepared for the Board of Agriculture at the end of the eighteenth century. These books provide us with a fairly adequate idea of the agricultural practice of the time, including the working of the runrig system of tenure; and it is safe to say that there is nothing—*e.g.* in the description of that system which occurs in the Aberdeenshire volume<sup>1</sup>—to suggest that the use of terraces as such necessarily entered into it in any way at all. Indeed, it is clear from Gray's whole account of the early agricultural systems<sup>2</sup> that the use of terraces is quite unlikely to have been an intrinsic feature of any one of them; although terraces may well have been built, or have been allowed to form, or have been used if already in existence, as a matter of convenience under any administrative system. The complete silence of the Roxburghshire volume on the subject of terraces is particularly significant in view of the large numbers of terraces that are now to be seen in that county. It is also clear from the *General Views* that S-shaped rigs, which in some cases at least appear to be definitely later than terraces occurring in the same areas,<sup>3</sup> were themselves passing out of use at the time when the series was being prepared.

The *Statistical Account of Scotland*, which dates about twenty years earlier than the *General Views* series, is again remarkable for its silence on the subject of terraces. No mention is made of them in the accounts of the parishes of Hownam, Morebattle, Oxnam, Yetholm, Innerleithen, Peebles, Newlands, Culter, or Dunsyre, which contain between them most of the really striking examples; while the author of the account of Markinch parish evidently had no real knowledge of the origin or purpose of the group to which he alludes.<sup>4</sup> A very small scrap of evidence may be found in the statement<sup>5</sup> that several farms in the higher part of Hownam parish had "scarcely been ploughed in the memory of man," for this suggests that a region in which terraces are particularly common had gone out of cultivation at least as early as the beginning of the eighteenth century and that the terraces may consequently reflect an agricultural system that was in use before 1700. Similarly, the writer of the account of the adjoining parish of Morebattle argued, from "traces of the plough" which could be seen in his day on the higher ground, that "much more of this

<sup>1</sup> Anderson, *General View of the Agriculture of the County of Aberdeen* (1794), pp. 54 ff., quoted by Gray, *English Field Systems*, pp. 158-61.

<sup>2</sup> *English Field Systems*, *passim*.

<sup>3</sup> See *infra*, p. 304.

<sup>4</sup> *Stat. Acct.*, xii. p. 551.

<sup>5</sup> *Ibid.*, i. p. 49.

and the adjacent country was anciently under tillage than at present.”<sup>1</sup> It is tempting to connect the abandonment of these lands with the great English raids of the middle of the sixteenth century,<sup>2</sup> and to conclude that terraces were in use in the later Middle Ages; but this construction cannot be put on the evidence, as terraces similar to the Hownam and Morebattle groups can equally be found in adjoining valleys on the English side of the Border. Pennant, writing of a tour made in 1772,<sup>3</sup> was evidently unfamiliar with terraces, while Gordon, writing in 1726, or more than two generations before the *Statistical Account* was compiled, failed to discover any local tradition of the use of the Romanno group.<sup>4</sup> Earlier again than Gordon’s work are the illustrations of Sleser’s *Theatrum Scotiæ*—this book was published in 1693, but some or all of the drawings were made about twenty years earlier. Sleser frequently incorporates views of ploughed fields and of standing crops, and it is clear that the system of agriculture with which he was familiar made use of ordinary rigs, well piled up in their centres and laid out for the most part across the lines of the contours. His scenery suggests just such farming methods as are described in the *General Views* series; only four of his pictures<sup>5</sup> show fields laid out in lines running parallel to the contours, and even in these cases it cannot be said that he intended to depict terraces rather than horizontal rigs. For an earlier period than the late seventeenth century I have only been able to find Small’s record of the finding of what seem to have been incinerated burials on the vanished terraces of the Wester Pitlour group.<sup>6</sup> On the face of it this find would seem to put the group in question back to pre-Christian times, but the record is not reliable enough to form a basis for argument. Finally, Chambers’s statement that “by the country-people, these terraces are called ‘deases,’ from their resemblance to grassy seats,”<sup>7</sup> suggests that, in Peeblesshire, all memory of their real purpose had completely died out by the middle of the nineteenth century.

The foregoing facts thus make it difficult to believe that terraces were being at all commonly used, and still less that they were being constructed, at as late a date as, say, 1700; and it will therefore be safe to conclude that their general supersession in favour of oblique or vertical rigs was not a result or concomitant of the process of “improvement” which set in in the earlier part of the eighteenth century. Moreover, as at least a century should no doubt be allowed for the fading of what must have been a well-established folk-memory, we can hardly suppose that the Romanno terraces,

<sup>1</sup> *Ibid.*, xvi. p. 509.

<sup>2</sup> *Proc. Ber. Nat. Club*, x. (1882-4), p. 10, records a tradition that Kale Water was nearly depopulated as a result of the raid of 1545.

<sup>3</sup> *A Tour in Scotland*, part ii., p. 281.

<sup>4</sup> *Op. cit.*, p. 114. The allusion to the Picts cannot be supposed to be founded on real folk-memory. However, neither his uncritical acceptance of what he was told nor his doubtful reliability as a field observer invalidate the deduction that the Romanno terraces were no longer understood in his time.

<sup>5</sup> Nos. 32, 39, 40, 43.

<sup>6</sup> *Op. cit.*, p. 188.

<sup>7</sup> *History of Peeblesshire*, p. 40.

at any rate, can have been under cultivation at any period of the seventeenth century. In other words, the literary evidence provides some grounds for believing that the terraces are probably not of later date than the late Middle Ages,<sup>1</sup> though of their possible upper limit in time it gives us no hint whatever.

### III. PHYSICAL CHARACTERISTICS.

Except at the price of expanding this paper to intolerably large bulk, it would be quite impossible to give complete descriptions of all the groups of terraces and other traces of bygone cultivation on which I have recorded notes. In the present section, therefore, I will only attempt to summarize the principal facts, and to discuss such of them as seem to bear upon the origin and date of the remains. A complete list of the sites noted in Scotland, with their locations, will be found below in an Appendix.

1. *Summary Statement of Facts.*—It must be stated at once that the material does not exhibit such features as would form a basis for its differentiation into clearly defined types. In particular, the heights and breadths of the individual terraces do not afford a basis for the classification of the groups of which they form part, as these dimensions are apt to vary widely even within a single group. Such variations, in fact, are evidently conditioned by changes in the steepness of the slope and in the aspect of the ground. Again, if an attempt is made to define even the broadest of types on any given basis, individual examples are constantly found to fall between one such type and another, to the stultification of the scheme, whatever it may be. I have therefore confined myself to listing selected examples under headings that are designed to bring out certain features, in order to provide both a general idea of the nature of the various groups and also a basis for discussing their probable origin and date.<sup>2</sup>

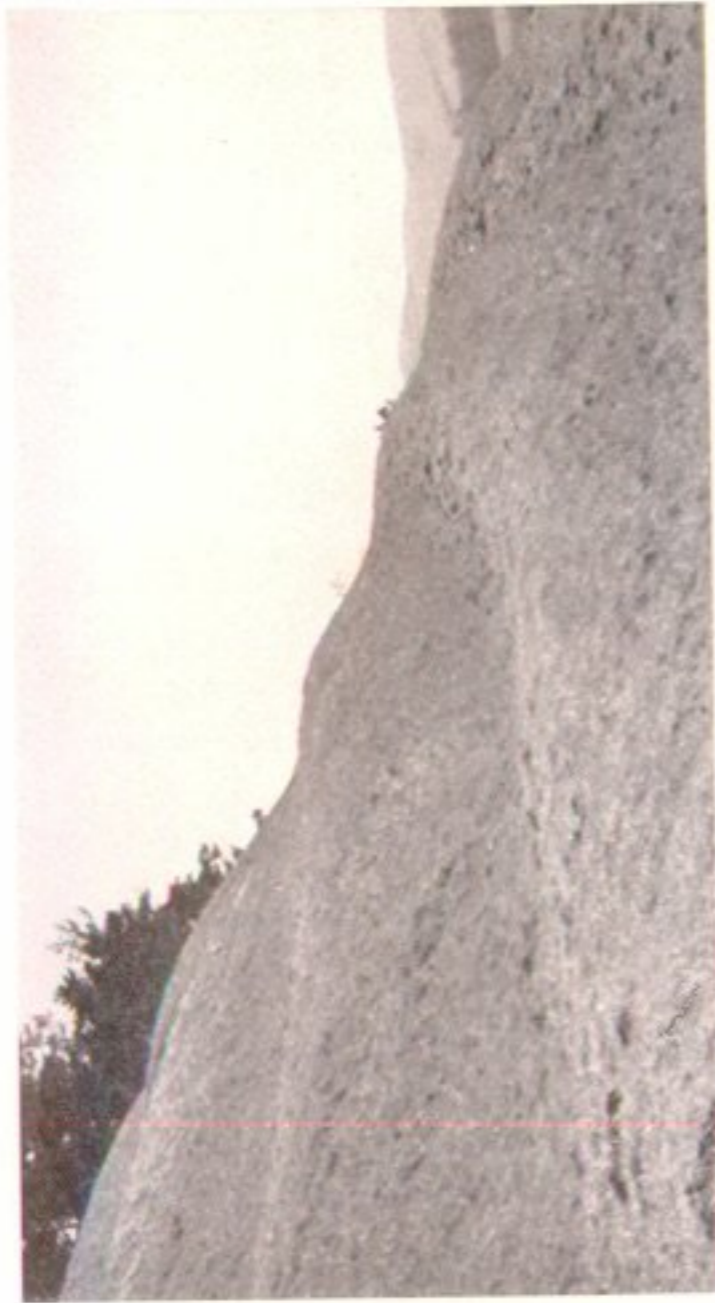
A. *Step-like terraces* (Pl. LXXXVII, 1 and 2, and Pl. LXXXVIII, 3).—In some cases the terraces are remarkable for their bold step-like profile, as they have steep fronts<sup>3</sup> which often attain to a considerable height while their upper surfaces<sup>4</sup> are more or less flat. *Examples*: Tullymurdoch, Markinch, Dunsyre, Nisbet Water (upper), Mitchelhill, Romanno, Purvis Hill, Braemoor Knowe, Headshaw Law, Countridge Knowe. The line between this variety and the next one is not at all easy to draw, as the former fades off into the latter in proportion as the fronts of the terraces decrease in height and their upper surfaces depart from the horizontal. Actually the distin-

<sup>1</sup> Watson's suggestion (*Celtic Place-Names of Scotland*, pp. 153 f.) that the Romanno and Arthur's Seat groups owe their origin to the canons of Holyrood is interesting, but no evidence can be produced either for or against it.

<sup>2</sup> As a result of this procedure, a group of terraces which exemplifies more than one noteworthy feature will naturally appear in more than a single list.

<sup>3</sup> *I.e.* the surfaces corresponding with the "risers" of a flight of steps.

<sup>4</sup> *I.e.* those corresponding with the "treads" of a flight of steps. These arbitrary terms are used throughout this paper for the sake of convenience.



2. Part of Romanno group, showing step-like construction.



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4. Part of Braemoor Knowe group, showing rigs (in foreground) aligned with terraces (in middle distance).



1. Part of Purvis Hill group, showing step-like construction and trees growing in terrace fronts.

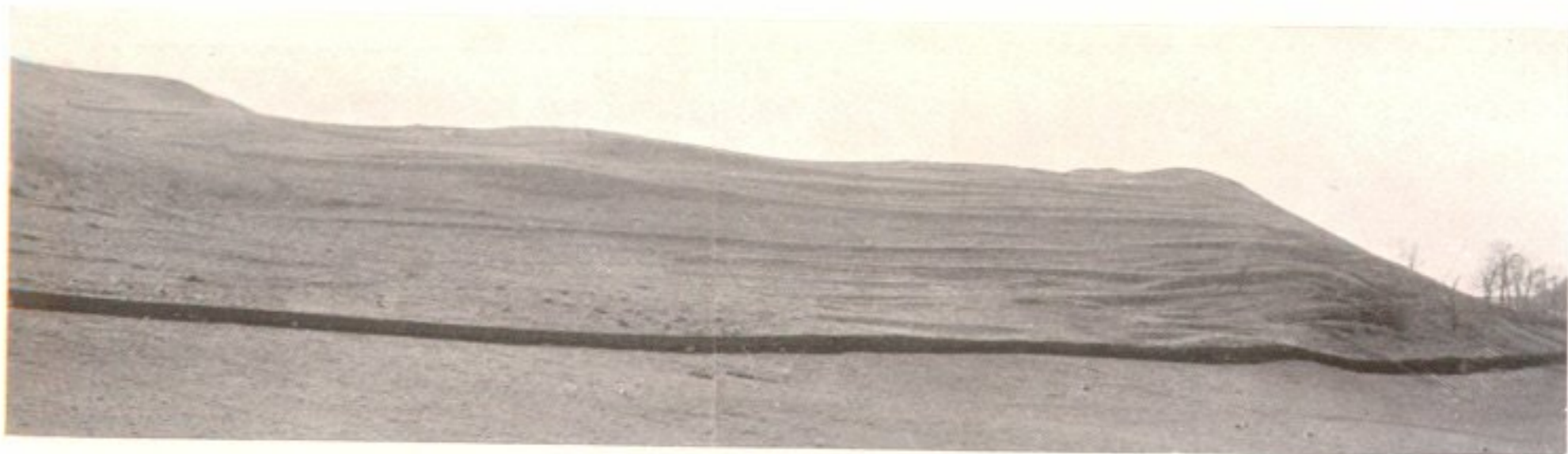


3. Boulder reinforcement of a terrace front in the Duddingston group.

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PLATE LXXXVII.

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1. Chatto Craig group, showing terraces separated by strips of the natural hillside.



2. Culter Shaw group, showing terraces criss-crossed by later vertical rigs.



3. Romanno group, showing step-like construction.

guishing feature of List B appears in parts of several of the foregoing groups.

B. *Terraces separated by strips of natural hillside* (Pl. LXXXVIII, 1).—In this, the largest, class, terraces do not rise above one another in the fashion of a flight of steps, but are separated by strips of the natural face of the hillside. The dimensions of their fronts and upper surfaces, as well as the breadths of the intervening strips of hillside, vary considerably; but the fronts of these terraces are, in general, a good deal lower than in the case of List A, few of them being more than 5 feet high. In some cases fronts measuring as little as 12 inches have been noted. *Examples*: Alva, Nisbet, Goseland Hill, Glenternie, Cademuir, Edston, Bowerhope, Catlee Burn, Hutton Mill, Kelso Hill, Chatto Craig, Calroust, Cock Law and Kingseat Burn. Ven Law and Stotfield Hill likewise fall into this class, but may be special cases (see p. 300). Many other probable examples have been seen at a distance only, but these cannot be distinguished with certainty from the horizontal marks that are given in List C.

C. *Horizontal marks*.—The hillsides flanking Bowmont Water and Kale Water, in Morebattle and Hownam parishes, are in many places heavily scored with horizontal marks. They can be seen so readily from the main valley roads that individual examples do not require to be named. These marks evidently represent terraces of the kind that are listed under B above, being either their imperfect beginnings or, much more probably, their last vestiges, almost destroyed by later cultivation. They have not been examined in detail for the purposes of this paper, as such marks generally appear most clearly when viewed from a considerable distance, and in fact may be quite invisible to an observer who actually walks across them. Even more elusive are crop-marks, of which a very good example was seen by Culter Mill Lead, and others, less definite, at Skirling, Kirkurd, and Romanno.

D. *Oblique terraces*.—Reverting to tangible remains, I must next mention those terraces which lie, either in whole or in part, at a considerable angle to the horizon. *Examples* are to be seen at Dunsyre, where the terraces dip down across the contours in steep curves and then flatten out; at Cademuir, where the same thing happens but the dip is less pronounced; at Swineside, where both ends curve downwards to a low point in the centre; and at Inverkeithing, Woodhouse, Old Thornylee, and Buchtrig, where the terraces dip sharply but in straight, not in curving, lines. This effect may probably be due, at least in the last four cases, to an attempt to lay out strips for "vertical"<sup>1</sup> cultivation on ground that slopes in more than a single plane.

E. *Oblique curving marks*.—Perhaps to be compared with the oblique

<sup>1</sup> This word is used loosely, here and elsewhere in this paper, to indicate rigs which are laid out across the contours, whether obliquely or at right angles.

curving terraces, which have just been mentioned, are the curved marks that can be seen, from across the Lyne valley, sweeping down and across the western face of Whiteside Hill. Similar marks can be seen on Dod Law and, under certain conditions of light, on the south-west side of Muirburn Hill. (These sites have not been included on the distribution map.)

F. *Terraces which bear rigs.*—It is by no means uncommon to find rigs, indistinguishable from those seen in any area of abandoned cultivation, running along such terraces as are broad enough to hold them or along the strips of hillside that occur between the terraces of List B. *Examples:* Middleton, Dunsyre, Nisbet, Culter Shaw, Logan Burn, Woodhouse, Old Thornylee, Countridge Knowe, Braemoor Knowe, Calroust. The number of rigs on each terrace naturally varies with the breadth of both terraces and rigs, but two or three rigs, each about 18 feet broad, are often present. An exceptionally broad terrace of the Calroust group bears a large number of these rigs, which curve downhill J-wise until their ends terminate at the face of another terrace which cuts obliquely across them.

G. *Terraces which merge into rigs.*—A rather surprising fact which this study has brought to light is that terraces and rigs in some cases actually merge into one another. *Examples* are to be seen at Logan Burn, where low terraces take the place, as the ground rises, of the rigs which lie parallel with them on the flatter area below, while these rigs in turn acquire the form of terraces at their upper ends; at Braemoor Knowe (Pl. LXXXVII, 4, and Pl. LXXXIX, 1), where rigs and step-like terraces occur in the same series and where a rig can often be seen becoming a terrace to conform with a change in the direction or steepness of the slope; at Dunsyre, where the terraces, on descending to the lower-lying ground, flatten and expand into broad rig-like strips, themselves subdivided into rigs; at Calroust, where some of the rigs almost assume the proportions of low subsidiary terraces; and at Tullymurdoch (Pl. LXXXIX, 2), where terraces occur on the lower and steeper slopes but rigs on the flatter ground above—the ends of these rigs, however, assuming the form of terraces where they curve round and end on the flank of a shallow gully.<sup>1</sup> In some of these cases it is quite impossible to decide whether a given irregularity in the ground should be called a terrace or a rig; for example, at Newton Bridge and at Kilbucho March normal rigs can be seen tending to acquire a terrace-like form in consequence of having been laid out obliquely to a slope.

H. *Terraces which show traces of masonry or of placed stones.*—I have chosen the foregoing words as a heading for this list in order to avoid prejudicing the question of "revetment," which will fall to be discussed shortly. True masonry revetment has only been found in a single case, which will be discussed below (p. 296). Eckford records that some of the

<sup>1</sup> The terrace-like ends of these rigs are paralleled at Heriot Siding, at Nisbet Water (lower), and at Elghope Burn, though in all these cases the rigs themselves have been destroyed by later cultivation.



Purvis Hill terraces were found, when dug into, to have "large stones in front,"<sup>1</sup> an expression which does not suggest true revetment. The Duddingston group (Pl. LXXXVII, 3) provides the best example of terraces with placed stones or boulders in their fronts, while the quantity of stones of all sizes to be seen at Old Thornylee is also very considerable. The Dunsapie group shows lines of earth-fast boulders marking the former positions of the fronts of terraces which have now been more or less completely removed. Stonework which was evidently not intended as revetment was seen at Girron and will be discussed later. A few odd stones were observed in terrace fronts at Woodhouse, Calroust, and Bowerhope, as well as a row at Kaim Burn; but in none of these cases was there definite evidence of building. I have failed to identify the example quoted by Christison<sup>2</sup> as having been observed by Geikie on Bowmont Water. The stone-revetted garden-beds at Neidpath Castle need not detain us, as they belong to the class of terraced gardens rather than to that of cultivation terraces; while the small terraced plots at Bloodylaws and on Elghope Burn, although they show no stonework, are no doubt in the same tradition.

J. *Special and doubtful cases.*—In this list I have included a number of examples which are either of doubtful authenticity or which seem, for one reason or another, to be irrelevant to the present study. The terraces at Inverkeithing, for example, may possibly have had some connection with the mediæval burgh, and, if anything more than ruinous revetments remains on the slope below Johnston Terrace, Edinburgh,<sup>3</sup> a similar explanation would probably apply there. Both cases should be regarded as special ones and treated with caution. Again, the "terracing" noted at Maiden Castle (Bracks)<sup>4</sup> consists only of some irregular ledges and is in no way comparable with the rest of the material here dealt with; while that at Maiden Castle (Dunipace)<sup>5</sup> is probably no more than a series of low narrow rigs. The supposed terraces at Primrose Hill<sup>6</sup> are probably parts of the outer defences of the fort, as those recorded by Gordon at the Keir, Ardoch,<sup>7</sup> are without question. The group reported on hearsay by Chambers,<sup>8</sup> at Castle Semple, is probably to be identified with a series of high steep rigs which, as I am informed, still exist there; there are no traces of Chalmers' group at Currie,<sup>9</sup> nor of Gordon's groups at Denoon Castle<sup>10</sup> or at Castle Hill Fort;<sup>11</sup> while the very narrow shelves on Kildownies Hill, though

<sup>1</sup> *P.S.A.S.*, lxii. p. 115.

<sup>2</sup> *Early Fortification in Scotland*, p. 373.

<sup>3</sup> Cf. *Scottish Geographical Magazine*, xxxv. p. 303.

<sup>4</sup> Royal Commission on Ancient and Historical Monuments, *Inventory of the Ancient Monuments of Fife*, No. 242.

<sup>5</sup> *Ibid.*, No. 421.

<sup>6</sup> *P.S.A.S.*, lxii. p. 120; Royal Commission on Ancient and Historical Monuments, *Inventory of the Ancient Monuments of Berwickshire*, fig. 63.

<sup>7</sup> *Op. cit.*, pp. 41–2.

<sup>8</sup> *P.S.A.S.*, i. p. 129.

<sup>9</sup> *Caledonia*, ii. pp. 469–70. But he may have intended to indicate the Middleton group.

<sup>10</sup> *Op. cit.*, p. 115.

<sup>11</sup> *Op. cit.*, p. 164.

regarded by Gordon<sup>1</sup> as terraces, are unquestionably natural features. I have not been able to verify Wilson's report of built terraces in Islay,<sup>2</sup> and therefore do no more than record it for the benefit of future inquirers. Finally, I must confess—with the greatest regret, in view of the care bestowed on their survey and description—that I cannot regard the so-called "Celtic lynchets" at Torwoodlee as being examples of cultivation terraces at all.<sup>3</sup>

Of the foregoing only the Inverkeithing group is included in the distribution map.

2. *Discussion of Physical Characteristics.*—The first point that calls for notice in the foregoing summary of the facts is the extent to which the terrace-groups differ in character among themselves. Nothing could be more dissimilar than the high steep terraces at Romanno on the one hand, and the very low ones at Kilbucho Church or Bowerhope on the other; while many other instances of wide diversities of type could easily be taken from the lists. In view of these differences, a question inevitably arises as to whether the body of material here assembled can properly be treated as a unit, or whether the name "terrace" is not, in fact, being stretched to cover a collection of remains the origins, purposes, and histories of which may be just as diverse as their physical types. No answer to this question can be offered at present, but the possibility of more than a single explanation being needed to account for all our material must nevertheless be borne in mind.

In the second place, something must be said about the problem of whether the terraces were originally designed and constructed as such before being put into use, or whether they came into being, as it were automatically, in the course of ploughing. Proof of the former of these alternatives would, of course, be afforded by regular masonry revetment, but this has been found in one case only,<sup>4</sup> that of a solitary terrace on Fasset Hill which does not form part of a group, and no general conclusions should therefore be based upon it. Almost equally strong evidence is, however, forthcoming in the boulder-work seen at Duddingston (Pl. LXXXVII,

<sup>1</sup> *Op. cit.*, p. 115.

<sup>2</sup> *Prehistoric Annals of Scotland* (1863), i. pp. 491-2.

<sup>3</sup> On these, see *P.S.A.S.*, lxvii, pp. 74 ff. But I prefer a reading of the site suggested to me by Mr C. E. Stevens, who regards all except the lowest bank as essentially natural features, though perhaps somewhat altered in shape by human agency—*e.g.* the topmost bank appears to represent the original outline of the fort, while those lying between the 725-ft. and 765-ft. contours (*loc. cit.*, fig. 3), below which there seems to have been an enclosure with a small house, may well have been quarried or cut back to a certain extent. The lowest bank, again, though doubtless formed as a lynchet, appears simply to mark the lower side of the enclosure, the E. and W. sides of which can also be seen clearly when the grass is short; it can therefore hardly be regarded as a cultivation terrace. Finally, the ground lying immediately S.W. of the supposed "Celtic lynchets" differs astonishingly from the photograph of it which figures on p. 76 of the *Proceedings* volume quoted: the long straight terraces there shown do not exist in fact, and their appearance in the photograph must be due to some accidental effect of light, in combination with certain conditions of vegetation or moisture or both.

<sup>4</sup> Revetted terraces which are obviously structural in purpose, such as occur at Old Thornylee (*cf.* p. 308) and on several "homestead" sites, are not taken into account.

3) and Dunsapie.<sup>1</sup> This is not true revetment, as the boulders do not constitute an actual wall but seem to be embedded in the earth of the terrace fronts rather than to support it. Raistrick and Chapman make use of the convenient expression "reinforced turf bank" in describing a similar type of construction found by them in Wharfedale.<sup>2</sup> But it is clear enough that the steepest and highest, at least, of the Duddingston terraces must have been constructed as such before they were used, notwithstanding the fact that the Dunsapie group, which adjoins them, provides some evidence that may tell in a contrary sense.<sup>3</sup> At Old Thornylee there are extensive remains of reinforced banks, and at Robertson, some less definite indications of the same kind, but no opinion can be formed about their origin on the strength of superficial observations alone.

Additional evidence of purposeful construction might also, perhaps, be looked for in the step-like profiles of the groups included in List A, but this would be unsafe in view of the dimensions of certain lynchets which have been proved to be the result of ploughing only.<sup>4</sup> Nevertheless, it may be worth while to recall that terraces which to-day appear to be completely without revetment may originally have been supported by stakes or fascines which have long since rotted away, or again that the loose material of the terrace fronts may have been held together by the roots of trees growing in such positions as those which are now to be seen at Purvis Hill (Pl. LXXXVII, 1) or Stotfield Hill. Eckford remarked such differences between the soil excavated on the Ven Law terraces and that found on adjoining unterraced ground as convinced him that these terraces had been constructed artificially; at Dunsyre and Romanno he found some rather less definite evidence of the same character,<sup>5</sup> while he believed that at Purvis Hill signs of excavation could be detected rather than of building up.<sup>6</sup> It seems difficult to draw conclusions on points of this kind unless the presence or absence of an old turf-line below the "positive lynchets" is actually noted; I must, however, admit that this may be little better than a counsel of perfection as, in the case of a terrace that I sectioned for this very purpose, it was impossible to detect any dividing line between the very thin gravelly soil and the underlying till.

As against the foregoing evidence for purposeful construction, signs are by no means wanting in support of the ordinarily accepted view that the terraces—or some of them, at least—have been formed during use, by

<sup>1</sup> For description, see Royal Commission on Ancient and Historical Monuments, *Inventory of the Ancient Monuments of Midlothian*, No. 11. An air-photograph will appear in *Antiquity*, xiii. No. 51 (September 1939).

<sup>2</sup> *Antiquity*, iii. p. 173.

<sup>3</sup> *Infra*, p. 298.

<sup>4</sup> *E.g.* Thundersbarrow Hill (*Antiquaries Journal*, 3rd series, xiii. pp. 118 ff., and *Antiquity*, xiii. p. 48).

<sup>5</sup> *P.S.A.S.*, lxii. pp. 111 f. The use of imported soil in terrace-building in Malta is suggested in *Antiquity*, ii. p. 23. Masonry terrace-walls, evidently intended to be filled with imported soil but abandoned before completion, may be seen near the village of La Sine, A.-M., France. There is but little natural soil in this locality, the unimproved land being extremely rocky.

<sup>6</sup> *Ibid.*, p. 114.

gradual and fortuitous accumulation. This process would provide an easy explanation for the terraces which are divided from one another by strips of the natural hillside, and this explanation is, in fact, the one which leaps to the mind as one views the sites of List B. Moreover, a clear demonstration of its working can be seen on the site at Girron, included in List H above. The site in question is a low hummocky ridge, sloping in diverse directions in its different parts. It is traversed by rickles of stones, probably the remains of low dykes originally intended to divide its surface into strips, or possibly no more than elongated dumps of land-stones cleared from cultivated ground. Where the level of the surface is the same on both sides of these rickles, they lie quite free and their true nature is plain; but where they separate two strips lying one at a higher and the other at a lower level, they appear as stony steps with flattish surfaces of turf lying above and below them. In one or two cases a rickle can actually be seen disappearing under the turf, where the lie of the ground changes, and a better proof than this of the reality of automatic lynchet-formation could hardly be looked for. Consequently, in other cases where stones or boulders can be seen in positions which suggest that they may have marked the divisions between adjoining strips, we are justified in asking whether accumulation may not have occurred in the same way as at Girron.

An interesting case in point can be found in the Dunsapie group. In some of the terraces here the boulders occurring in the terrace fronts are so few and far between that their presence could be explained by assuming that they had been thrown to, or piled along, the edges of strips of land that were in process of being cleared for cultivation, while those which are actually fixed in the original surface of the ground might well have been intended to mark the divisions between adjoining strips. In some places, above the Queen's Drive, where terraces have been destroyed by later cultivation, rows of earth-fast boulders can be seen marking the former positions of the terrace fronts; and there can be no doubt that, if strips had originally been divided from one another in this way and the continuity of ploughing interrupted along such dividing lines, terraces would have formed through the gradual accumulation of soil washed down from the cultivated strip above. And this process would, no doubt, have been accelerated if large land-stones and other rubbish had been piled between and upon the boulders that marked the lines. The remains of boulders or stonework at Old Thornylee—to say nothing of those at Calroust, Roberton, and Woodhouse, which are on a much less considerable scale—suggest the same possibility; while the few stones appearing at Bowerhope, though negligible in point of numbers, occur in a lynchet so low (about 12 inches) that revetment can hardly be in question. We have thus some material evidence to support the idea that some, at least,

of the terraces may have come into existence through the automatic accumulation of rain-washed soil.

I believe that this conclusion can be drawn without prejudice to the question of whether, where, or for what purposes balks were left between the strips of an open field, which, as it is intimately bound up with the further question of the origin of the southern English lynchets, cannot be discussed within the limits of the present paper.<sup>1</sup> Whatever may be the proper answers to these questions—and it seems possible that they may not admit of being answered by general statements—we may note that at least one definite record exists<sup>2</sup> of uncultivated balks, such as we presume might give rise to lynchets, being left, in Scotland, between the cultivated strips of fields worked under the runrig system. Again, it is not unreasonable to suppose that where slopes were steep and soil thin, as in much of our area, farmers may have purposely promoted the formation of terraces by artificial means, in order to prevent loss of soil by denudation.<sup>3</sup> And for this purpose a row of stones, such as those seen at Dunsapie, or even a less substantial obstacle to the passage of the plough, would certainly have been sufficient. In this case the distinction between terraces constructed as such before being used, and those formed automatically in the course of ploughing, loses a good deal of its meaning.

In the third place, something must be said about the signs of use observable on the terraces included in List F. It is easy, particularly in view of the narrowness or awkward situation of some of the better-known examples, to fall into the belief that all terraces are necessarily of early date and are to be connected with extremely primitive methods of tillage. However, List F provides ample evidence that many of the terraces were under the plough at a time when rigs were in use that cannot be distinguished from those of the "vertical" systems. It is natural enough to argue<sup>4</sup> that the presence of these rigs indicates that the terraces in question date from the same time as the rigs—that is to say, presumably from the Middle Ages or later. It is necessary, however, to remember that the facts as we find them could be explained equally well by attributing the rigs to what the Orwins call<sup>5</sup> the opportunism of farmers of a later period, who may have made use of ground that was already terraced and, in so doing, employed, as was natural, their ordinary technique of rigs. Other indications of the working-over of terraces by later users are to be found at Dunsyre, where some intermediate terraces have been removed wholesale with the apparent object of obtaining broader expanses of flat ground on the adjoining

<sup>1</sup> On this, see the Orwins, *op. cit.*, pp. 47 f., and *Antiquity*, xiii. pp. 50 ff.

<sup>2</sup> Robertson, *General View of the Agriculture in the County of Perth* (1799), p. 392, quoted by Gray, *op. cit.*, p. 165.

<sup>3</sup> For the intentional production of lynchets, by ploughing alone, on a modern African coffee-estate, see *Antiquity*, vi. pp. 334 ff.

<sup>4</sup> As with Crawford in the case of Calstone in *Wessex from the Air*, p. 166.

<sup>5</sup> *Op. cit.*, p. 320.

terraces below them (fig. 1); at Calroust, where a low subsidiary ledge appears on one of the main terraces; and at Countridge Knowe and Braemoor Knowe, where some evidence appears of the cutting-back and steepening of terrace fronts—again no doubt, to widen the cultivable strips.<sup>1</sup> That such working-over may have taken place in very recent times is suggested by a statement made to me by the present farmer of Nisbet, to the effect that his grandfather had grown potatoes on the terraces behind the house; while the presence, on the fronts of certain terraces, of trees, which may represent the remains of overgrown hedge-timber,<sup>2</sup> suggests that the terraces in question may have been abandoned as lately as between

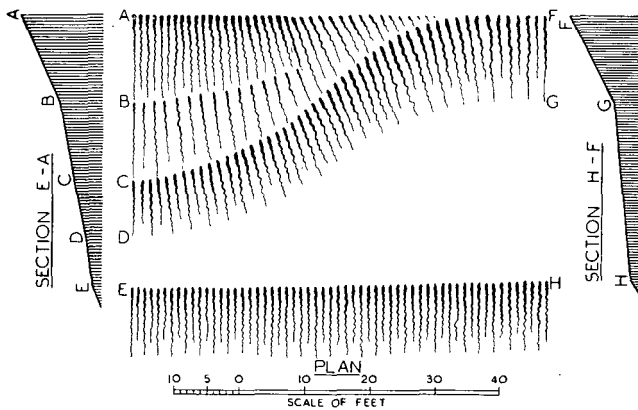


Fig. 1. Sketch plan of part of the Dunsyre group, showing how a terrace has been dug away to broaden the surface of the adjoining one.

problem—that presented by the terraces included in List G, which either have rigs so closely associated with them as to form part of the same group, or which actually turn into rigs on running out on to flat or flattish ground. The situation at Dunsyre can hardly be explained on any other hypothesis than that the lower ends of the terraces, where they descend from the steeper to the gentler slopes, were flattened to some extent and laid up into lands along which rigs could be driven; and this explanation accords very well with the presence of an extensive system of rig-cultivation above, or north of, the terraces, as well as with the remains of other rigs occurring between the lowest terrace and the head-wall of the modern farm—the rigs having thus, as it seems, encroached closely on the terraced land wherever conditions permitted.<sup>3</sup> At Braemoor Knowe (Pl. LXXXVII, 4, and Pl. LXXXIX, 1), again, the confusion of terraces and rigs is so profound that

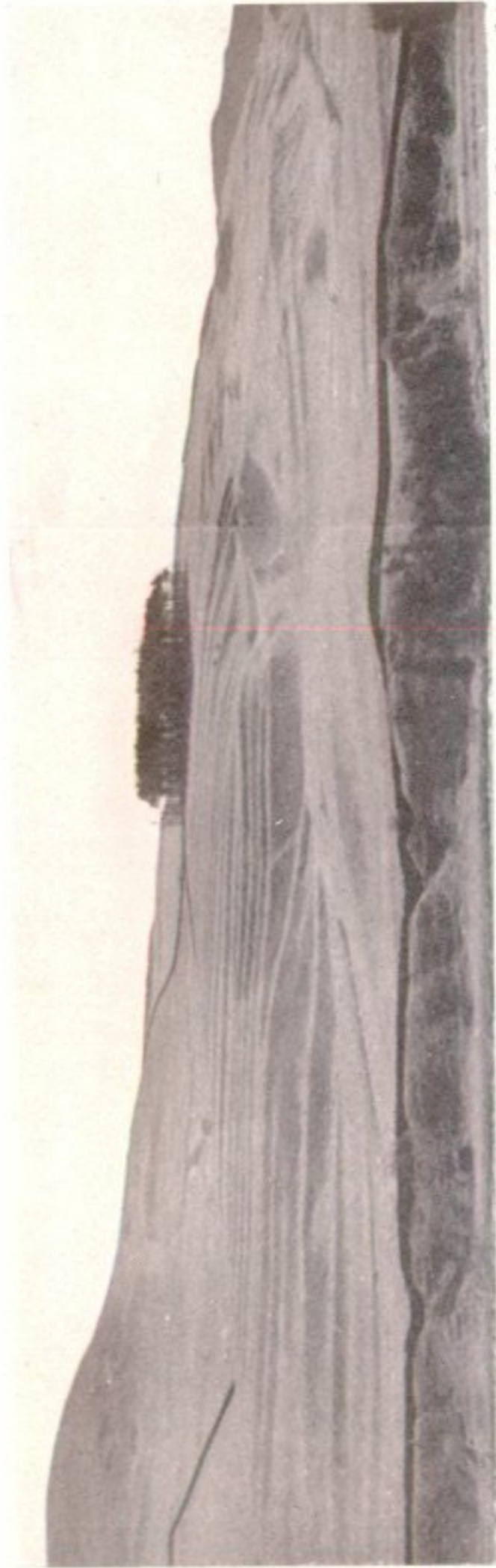
<sup>1</sup> It is possible that the very wide spacing of the terraces at Ven Law and Stotfield Hill may likewise be due to the destruction of intermediate members of an originally continuous group.

<sup>2</sup> Particularly at Purvis Hill, where many of the trees have originated as coppice shoots.

<sup>3</sup> Nothing can be said about the N.E. side of the site, where modern cultivation has destroyed everything. The S.W. side abuts on a steep and rocky hillside.

a hundred and a hundred and fifty years ago. It goes without saying, of course, that a process of lynchet-formation begun in the distant past would have continued at any subsequent period at which the ground was again brought under cultivation.

The idea of the possible re-working at a later date of previously formed terraces deserves to be considered in connection with another troublesome



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1. Braemoor Knowe group, showing combination of step-like terraces and horizontal rigs. Note faint traces of later vertical rigs in lower left corner.



2. Part of Tullymurdoch group, showing terrace-like ends of rigs and, on left, ends of true terraces which occupy lower slopes of bluff not included in picture.



2. Terraces and rigs near Ingram, Northumberland.



4. Part of Alva group, showing terraces and path.



1. Part of Headshaw Law group, showing later rigs (left) cutting across ends of terraces.  
(*Crown copyright reserved.*)



3. Arthur's Seat, from Dunsapie, showing relation of terraces (in middle distance) and rigs (in foreground).



it could only have arisen from the rigs having been laid out expressly in order to coincide with terraces which already existed, or—what is much more likely—from terraces and rigs having come into being together, representing respectively the forms assumed by strips of “horizontal” cultivation on steeper and gentler slopes.<sup>1</sup> At Tullymurdoch (Pl. LXXXIX, 2) only the latter of these explanations could possibly be held valid. A return will be made to this subject on p. 307.

#### IV. DISTRIBUTION.

The outline of the area covered by the present study, and the general distribution of the sites, are shown on the accompanying map (fig. 2). The regions most carefully examined comprise Strathmore and the Sidlaws; the S.E. corner of Perthshire; the counties of Clackmannan, Kinross, and Fife; the N.E. and E. fringe of Stirlingshire; the Lothians, Berwickshire, Peeblesshire, and Selkirkshire; Roxburghshire, less upper Liddisdale and Teviotdale above Hawick; and the Clyde valley from near Carstairs to above Elvanfoot, with the Moffat district. For comparison with these, I have also visited the Mennock and Dalveen passes, upper Nithsdale, the neighbourhood of Moniaive, the Ken and Dee valleys, some ground S.W. of Dumfries, parts of the triangle Glenluce–Wigtown–Newton Stewart, and the valley of Girvan Water; and, in Northumberland, the valleys of the College Burn, the Breamish, the Coquet, Rede Water, and the North Tyne, as well as the line of Hadrian’s Wall.

Mr G. P. H. Watson and Dr K. A. Steer have also been so kind as to give me their respective observations on areas N.E. of Kirkcudbright and on upper Eskdale.

Special and doubtful cases<sup>2</sup> being set aside, we are left, as has been said, with a hundred and thirty-six sites on the Scottish side of the Border, of which seven, not shown on the distribution map, may be ignored for one reason or another. The most salient facts concerning the distribution of the remaining hundred and twenty-eight sites may be stated as follows (*cf.* also fig. 2). There are two smallish areas which between them contain eighty-five per cent. of all the sites recorded. These areas are (*a*) S.E. Roxburghshire, where sixty sites are closely grouped together in the parishes of Yetholm, Morebattle, Hownam, and the E. part of Oxnam, while a further five are strung out along a line extending S.W. These Roxburghshire sites evidently form part of a considerably larger series, the E. portion of which is represented by the very numerous terraces that occur on the College Burn, Breamish, and Coquet. (*b*) The upper Tweed and Clyde, with their tributaries and the passes that unite them. These

<sup>1</sup> It must be clearly understood that these terraces are largely of the high and step-like form covered by List A. There is no question here, as there is in certain cases mentioned under List D, of oblique rigs belonging to “vertical” systems having acquired a lynchet-like form.

<sup>2</sup> *Supra*, pp. 295–6.

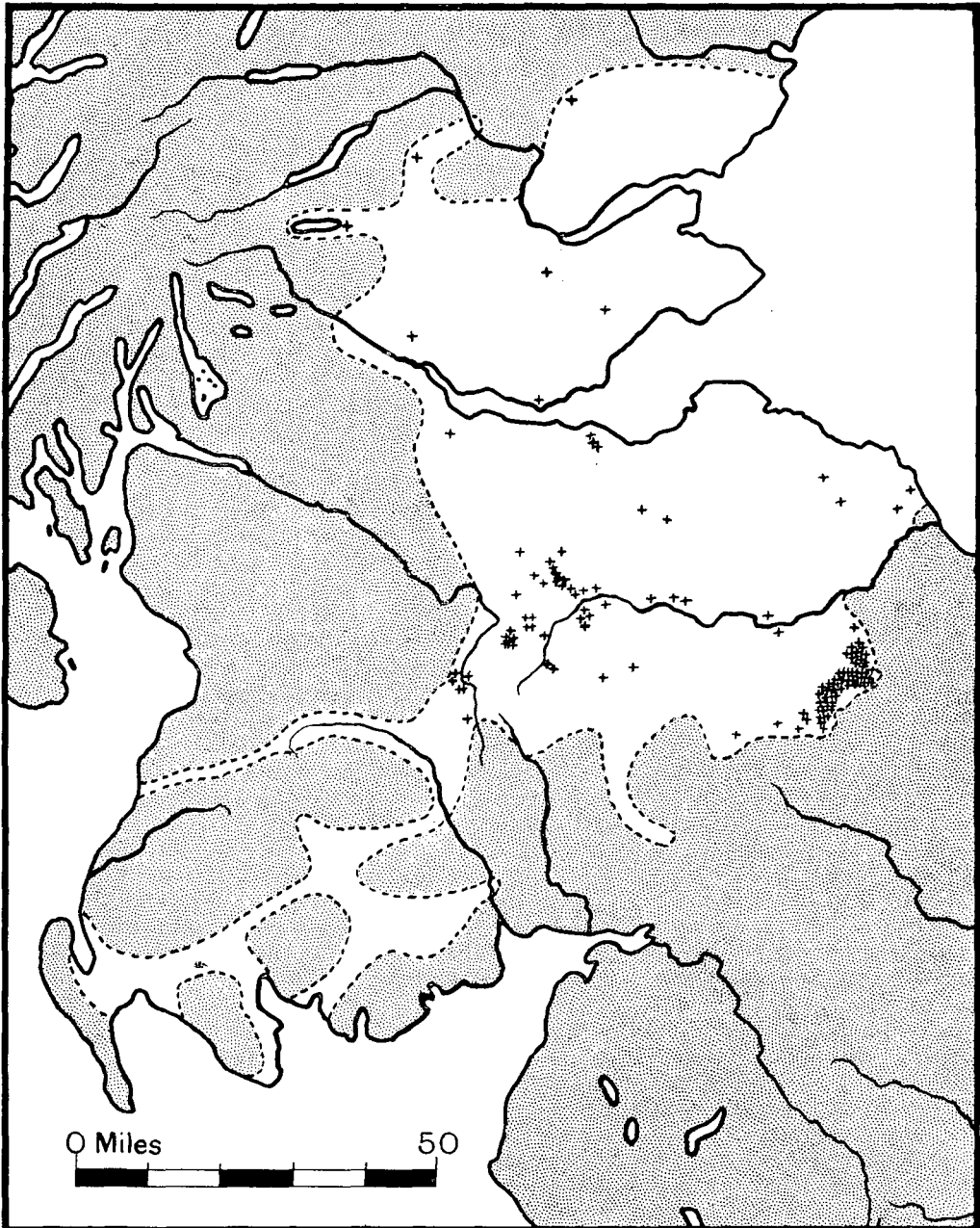


Fig. 2. Map of southern Scotland showing distribution of sites. The stippled areas have not been explored.

valleys contain a total of forty-five sites. Outside the foregoing areas we find no more than nineteen sites in all. Of these twelve are S. of the Forth, while N. of the Forth there are six still in existence, with a seventh, at Wester Pitlour, destroyed but known from record. In the S.W. counties I have neither seen nor heard of so much as a single example.

Having stated the facts shown by the distribution map, I must hasten to say that I attach but little importance to them. It is possible that the contrast presented by the S.E. and S.W. Lowlands may be significant, and so may also be the high concentration noted in the Cheviot parishes; but very much further than this it would probably be unsafe to go. A great deal of evidence exists to show that many of the terrace groups, as they now exist, are only the remnants of larger groups that have been partly destroyed by recent or modern cultivation; and if to this evidence we add the records of groups which have actually vanished, we are left with the suspicion that this process may have had very far-reaching results. The following summary of the evidence will show how this matter stands. To begin with the terraces that have vanished in the course of the last two centuries, we are told that the Wester Pitlour group was destroyed about 1800 in the course of agricultural expansion; <sup>1</sup> that "baulks," which were evidently terraces, existed near Pallinsburn about 1772,<sup>2</sup> in a region where no vestige of a terrace can now be seen; that terraces existed in 1726 at Kirkurd and Skirling;<sup>3</sup> and that at the same date the Romanno group was a mile in length.<sup>4</sup> My own observations of crop-marks seem to bear out the last two records, and the crop-marks of other vanished terraces on the bank of Culter Mill Lead have already been mentioned. Signs of partial destruction can be seen at many sites, but a few examples may be noted as showing how later cultivations have encroached upon and partially obliterated parts of the terrace groups. The commonest thing to find is a modern system of enclosed fields extending uphill for some distance from a valley-bottom and cutting into the lower side of a group, while the higher-lying terraces rise to the natural limits of the cultivable ground. On sites of this kind the surviving terraces evidently owe their preservation to a worsening of the quality of the land at higher elevations; some typical examples may be seen at Halmyre Mains, Tor Hill, Brotherstone, Easter Manuel, and Chester Hill—at the last-named site, in particular, an original westwards extension of the group to better ground is proved by the existence of crop-marks.<sup>5</sup> On Staneshiel Hill, again, much more is left of the terraces above than below the head-wall of the modern farm, and the same thing can be seen at many places in the Cheviot district. In contrast with the foregoing are some cases in which terraces have survived in especially low

<sup>1</sup> Small, *loc. cit.*

<sup>2</sup> Pennant, *loc. cit.*

<sup>3</sup> Gordon, *op. cit.*, p. 115.

<sup>4</sup> Gordon, *op. cit.*, p. 114.

<sup>5</sup> The foregoing interpretation of this site is given notwithstanding *P.S.A.S.*, lxix. pp. 166 f.

situations, as on the banks of streams, the flatter or better-drained ground which adjoined the terraces at rather higher levels having been preferred by modern farmers. Hutton Mill, Flemington, and Catlee Burn are sites of this kind, while at Edston and at Woodhouse the terraces occupy a middle position on an awkward rocky slope which separates two cultivable zones. In some few cases it seems that plantations of trees, and not topographical features, have prevented the destruction of the terraces, as at Buchtrig, Romano Bridge, and Dunsapie (outside the Park boundary) it is only under the trees that anything survives. Sites on which marks of later cultivation can be clearly seen cutting into, or across the ends of, groups of terraces, but where no topographical or other division exists between the two, are Dunsapie (Pl. XC, 3), Countridge Knowe, Braemoor Knowe (Pl. LXXXIX, 1), Headshaw Law (Pl. XC, 1), Swindon, Kelso Hill, Nisbet Water (upper), Culter, and Whiteside Hill. A Northumbrian example is illustrated in Pl. XC, 2. In all these cases the later cultivation takes the form of rigs, whether straight or twisted; though at Whiteside Hill the terraces are cut off by the rigs on one side only, and on the other by the system of curving marks mentioned in List E. At Culter Shaw (Pl. LXXXVIII, 2), again, vertical rigs can be seen criss-crossing the terraces and extending to a considerably higher elevation; while at Stevenson and at Venchen a similar criss-cross appearance was noted. The foregoing facts, to which parallels could be found on some of the Northumbrian sites, are enough to suggest that a map of the existing groups may not really represent their original distribution at all, but only a distribution of those areas in which conditions—topographical, economic, or social—have permitted terraces to survive.

Support for this view may also be obtained from a comparison of the topography of, say, East Lothian, a district from which terraces are absent, with that of the upper Tweed valley, in which they are tolerably plentiful. In East Lothian the slopes are gentle and the features are rolling, rocky bluffs and crags being rare even at the highest elevations; and as a result, apparently, of this, and also no doubt of the excellent quality of the soil, modern cultivation has been able to spread everywhere, right up to the edges of the moorlands. On the Tweed, however, where the ground is much more broken, we find that a good deal of land, even at quite low elevations, has been omitted from the scheme of the modern arable farms; and it is just on these "left-out" areas, as has been explained above, that remains of terraces have frequently managed to survive. Again, in the Cheviot region, where terraces are commoner than anywhere else in Scotland, there are also innumerable traces of other cultivations—straight, twisted, and curving rigs of all dimensions and types, as well as remains of old turf dykes, ruined enclosures, and obscure superficial marks—which are almost as rare as terraces themselves in the districts that maintained an economy of arable farms throughout the nineteenth century. If, therefore,

modern ploughing has destroyed, as it evidently has destroyed, the rigs which must once have covered the arable lands of East Lothian, it may well have destroyed at the same time an unknown number of terraces—unless, indeed, the makers of the rigs had already done so at a much earlier date.

There thus appears to be every reason for using the map only with the greatest caution, the danger of errors arising from the factors just detailed being, in my opinion, great enough to make it unsafe to base any detailed arguments on mere geographical data. For example, certain other types of monuments, such as forts or early village-settlements, normally occur at higher altitudes than terraces, or on knolls or hill-tops, and must consequently have enjoyed a much better chance of survival than the terraces, which lie on the more easily cultivable slopes. Consequently, to compare the distribution of terraces with that of other monuments would almost certainly lead to fallacious results. This rule could only be departed from with safety in the case of a comparison that was stated on the very broadest lines, and I believe that the general contrast made by the presence of terraces in the eastern part of the country with their apparent absence from the west is the only fact connected with their general distribution on which it might be possible to build. For what it is worth, this contrast seems to tell equally against attempts to relate the terraces to Early Iron Age forts, to mediæval castles or monasteries, and to the centres of modern life. For a connection with the Dark Age, however, there is perhaps more to be said, as the concentration of terraces in the eastern Lowland counties cannot but tempt us to connect them with the Dark Age English settlements. It is true that the absence of terraces from East Lothian and from the lower Tweed basin does not accord with this theory, but I have already given reasons<sup>1</sup> for believing that terraces may have existed formerly in these districts, and that their present apparent local distribution inside the area of the eastern counties may consequently be misleading. If objection is made to a Dark Age date on the score that such sites as Tullymurdoch, Dundurn, or Markinch are outside the probable zone of Anglian influence, the facts reviewed in Part III can be quoted as suggesting considerable diversity in the dates and possible methods of formation of the various terrace-groups; and it might therefore be allowable to think of the practice of terrace cultivation as having spread gradually to outlying districts from a hypothetical region of origin, or of local introduction, situated, *e.g.*, in Bernicia.<sup>2</sup> This theory, moreover, agrees in a general way with that put forward by Crawford<sup>3</sup> and by Raistrick and Chapman<sup>4</sup>

<sup>1</sup> *Supra*, p. 304.

<sup>2</sup> In this connection, *cf.* an interesting suggestion made by Collingwood and Myres, *Roman Britain and the English Settlements*, pp. 211 f. and 442.

<sup>3</sup> *Loc. cit.* And it is well to recall that the Orwins' arguments (*op. cit.*, pp. 319 ff.) are directed only against the association of these lynchets with an open-field system, and not specifically against their attribution to the Dark Age.

<sup>4</sup> *Antiquity*, iii, pp. 173 ff.

for similar material in Wessex and Wharfedale respectively. Unless, however, we suppose that the use of terraces, once introduced in this way, persisted for many centuries, the theory will conflict with the rather better-founded conclusions that will be reached below in Part V.

A further point which emerges from a study of the distribution of the terrace-groups is the complete unimportance both of elevation, whether absolute or relative, and of aspect. I have taken a note of these details on most of the sites that I have visited, and find that terraces may face any point of the compass and may occur at any height, within the cultivable zone, above either the level of the sea or the bottom of the adjoining valley. The highest-lying terraces noted are two groups on Goseland Hill; these lie between 1000 and 1200 feet above sea-level, and between 350 and 550 feet above the valley-bottom. The Culter Shaw group is also a high one, running up to about 1000 feet above sea-level though only some 250 feet above the valley-bottom. On Goseland Hill, however, rigs occur at a higher elevation than the terraces, and at Culter Shaw land was under the plough in 1937 to about 1100 feet. The lowest-lying groups known to me are those on Haggis Knowe and above Duddingston Loch, the former lying about 150 feet and the bottom of the latter just under 200 feet above sea-level. Records of aspect made on a hundred sites were subjected to statistical analysis, and this showed that the total discrepancy between the frequencies of the various aspects as actually observed and as expected (*i.e.* on the hypothesis that no particular aspect was favoured) was nowhere near the significance level and could consequently be ignored with safety. No further notice need therefore be taken of these matters, except for the purpose of correcting the erroneous views that are sometimes expressed regarding them.

One definite, though perhaps not very important, fact does appear to emerge from a study of the local distribution of the terraces, and that is that terraces are regularly found in close proximity to lands that are still under the plough, or that have been so in the fairly recent past. A great deal of evidence of this has already been given by implication in the foregoing discussion of the destructive effect of modern farming operations, and even a hasty tour of the Cheviot valleys will provide very full corroboration. Subject to the proviso that terraces generally occur on higher ground,<sup>1</sup> often on more difficult or less fertile ground, and sometimes on less accessible ground than that which modern farmers affect, it might almost be said that their local distribution coincided to a substantial degree with that of the eighteenth- and nineteenth-century farms. They thus appear to reflect an agricultural system which possessed a basis similar to that of our own.

<sup>1</sup> Possibly on account of the uncleared or undrained state of the lower-lying lands.

## V. ASSOCIATION WITH OTHER REMAINS.

Suggestions have sometimes been made that terraces are to be associated with other remains, of one kind or another, on grounds of geographical distribution; and it is true that, in respect of forts at least, a geographical argument might seem superficially plausible in view of the occurrence of terraces in such districts as the upper Tweed valley or the Cheviots, where forts are plentiful.<sup>1</sup> But enough has already been said to show that this question cannot be dealt with on a wholesale scale by geographical methods, while arguments based on individual cases involve the difficulty of proving the existence of a real "connection" between a given terrace-group and a neighbouring fort or castle. To hold that connection is proved by mere proximity, however close this may be, involves an obvious fallacy; and even if this point were ignored, the difficulty would remain of fixing an arbitrary limit of distance within which connection should be considered to hold good. But to fix any arbitrary limit would involve such a number of other arbitrary assumptions as would vitiate the argument from the outset, and statistics obtained in this way would consequently be valueless. If, therefore, terrace-groups are to be associated with other monuments, this can only be done on the strength of real structural connections found to obtain between them. The problem is thus resolved into one of identifying cases in which such structural connections exist.

Something bearing on this subject has already been said in connection with the relation of terraces to other forms of cultivation. On the one hand,<sup>2</sup> it has been noted that modern enclosed fields regularly encroach upon, and are therefore later than, the adjoining terrace-groups; but on the other hand, contradictory evidence has been adduced regarding the apparent relative dates of terraces and rigs, as in some cases<sup>3</sup> the rigs seem clearly to be intrusive, while in others<sup>4</sup> their connection with the terraces is so intimate as to suggest that terraces and rigs were simply alternative forms of the "horizontal" cultivated strip, occurring the one on steeper and the other on flatter ground. Nor is it possible to explain away all these latter cases as exemplifying the adaptation of terraces by farmers accustomed to use rigs, notwithstanding the real occurrence of this in certain places.<sup>5</sup> It seems necessary to accept the contradiction and to conclude that terraces and rigs are not manifestations of two sharply differentiated periods, but that, while some rigs are certainly later than some terraces, and terraces in general seem to have been forgotten long before rigs finally became obsolete, the two were in use together for some period of indefinite length. No positive evidence exists for dating either

<sup>1</sup> Cf. also Chambers, *History of Peeblesshire*, pp. 40 f., and Pennecuik, *Description of Tweeddale*, p. 187.

<sup>2</sup> *Supra*, p. 303.

<sup>3</sup> *Supra*, p. 304.

<sup>4</sup> *Supra*, p. 300.

*Supra*, p. 299.

end of this period, which may have begun, as has been said,<sup>1</sup> under Anglian influence, and may likewise have persisted throughout the Middle Ages, to give it no later extension.

If we pass from the rig-cultivations to remains that admit of rather more accurate dating, we find that, in Scotland, reasonably convincing evidence is forthcoming only at Old Thornylee. Within the terraced area at this site there is a complex of ruins, belonging apparently to two periods, and perhaps going back as early as the late Middle Ages.<sup>2</sup> The ruins stand upon ground which has been partly levelled up by means of a terrace having masonry revetment in its face. The shape and disposition of the lynchett plot that lies immediately below this terrace evidently presuppose the existence of the inhabited site, as does also the lay-out of the dyke which formerly bounded the S. side of the area. We have thus some definite grounds for dating the origin of the Thornylee group to the late Middle Ages at earliest. It must, however, be remembered that this group is peculiar in respect both of the size and shape of its constituent parts, most of which could be better described as lynchett plots or fields than as actual terraces, and also of their disposition inside a boundary dyke and with their lynchets lying at a wide angle to the contours.<sup>3</sup> It would therefore be unsafe to use the foregoing conclusion, without other supporting facts, as evidence for dating all types of terraces alike to the Middle Ages. The possibility of important modifications having been made at Thornylee in fairly modern times must also be borne in mind, on account both of the plentiful traces of rig-cultivation on the plots and also of a local tradition which records the former existence of a community of weavers somewhere in this vicinity.

A real connection between terraces and a path can be seen in the case of the Alva group (Pl. XC, 4). Here it is evident that the path, which leads up Alva Glen into the Ochils, existed before the formation of the terraces, as these are "staggered" on either side of it in a way that presupposes its existence. However, this fact is of little practical value, as the age of the path is unknown.

Other evidence of this kind is at once unreliable and scanty. Suggested connections with forts can be ruled out for reasons already given,<sup>4</sup> while the true relation of the uppermost terraces of the Purvis Hill group to the

<sup>1</sup> *Supra*, p. 305.

<sup>2</sup> The lands of Thornylee originally belonged to the Crown, forming part of the Forest of Ettrick. They were granted to Sir James Douglas in 1321 or 1322, but in 1455 were resumed by the Crown, Thornylee being mentioned as a forest-stead in 1468. In 1510 the lands were granted to Patrick Crichton, who was bound to build upon them a house of stone and lime and to effect certain other improvements (see Buchan, *History of Peeblesshire*, ii. pp. 390-4, and Craig-Brown, *History of Selkirkshire*, i. p. 475, where further details are given). It would, however, be unsafe to correlate any of the existing ruins with Patrick Crichton's house.

<sup>3</sup> A certain similarity with the Buchtrig group may, however, be noted, particularly the existence at the latter site of the foundations of a small rectangular house.

<sup>4</sup> *Supra*, p. 307.



ridges and lynchets that mark the outline of the enclosures surrounding Purvis Hill Tower,<sup>1</sup> or the farm-house that succeeded it on the site,<sup>2</sup> could only be cleared up by excavation. Nor can anything be learned from superficial observation of the oblong enclosure that stands on the uppermost terraces of the Dunsapie group, high up on the E. side of the Lion's Haunch.

It is, fortunately, possible to supplement the Scottish data with evidence obtained in Northumberland. This time the connection proved is one between terraces and early village-settlements. Definite proof of the temporal relation of terraces and village settlements has not as yet been found on any of the Scottish sites,<sup>3</sup> and I am therefore very greatly indebted to Mr A. H. A. Hogg, of King's College, Newcastle-upon-Tyne, for having shown me two sites discovered by him near Ingram,<sup>4</sup> where the priority of the settlements to the terraces appears with convincing clearness. At Middledean "Large Village," terraces which are precisely similar to those existing outside the inhabited area may be seen intruding among the huts at more than one place; while elsewhere stones from the ruined ramparts seem to have been cleared away to leave space for terraces which skirt the exterior of the settlement. At Middledean "Small Village," again, some adjoining terraces<sup>5</sup> actually cut through and destroy part of the structure. On the current assumption that settlements of this type are datable to Roman times, these facts give us a satisfactory *upper* limit for the possible age of at least these groups of terraces. On the converse question, of how much *later* than the Roman period the terraces may be supposed to have originated, they naturally tell us nothing; and there is thus no conflict between the conclusions drawn from these sites on the one hand and from Old Thornylee on the other.

A conflict does, however, appear to arise when we consider the case of Housesteads, where a terrace was held, as a result of excavation, to have originated during the period of Roman occupation,<sup>6</sup> and a word of explanation is therefore necessary. The fact appears to be that the ground lying S. and S.E. of the fort bears two different systems of terraces, the distinction between which may readily be overlooked. In the first place, there is a system which flanks the two sides of the Roman road between

<sup>1</sup> Chambers, *History of Peebleshire*, p. 41.

<sup>2</sup> *P.S.A.S.*, i. p. 128.

<sup>3</sup> On Kaim Burn a terrace reaches to within 10 yards of the rampart of a settlement, but failing excavation there is nothing to show whether the terraces of this group represent the arable land belonging to the settlement or whether they were made—or were allowed to form—along lines which purposely just avoided an already existing, and probably ruinous, settlement. A similar difficulty was encountered at Westnewton, near Kirknewton, Northumberland.

<sup>4</sup> O.S. 6-inch sheet Northumberland NXXVII S.W. These sites have been planned by Messrs E. G. Taylor, H. E. Couzens, and A. L. H. Pratt, of King's College, Newcastle-upon-Tyne, and publication is to be looked for shortly.

<sup>5</sup> At the point in question these terraces are running almost at right angles to the contours, but not far off they swing round into a more nearly horizontal position. They are thus comparable with some of those included in List G.

<sup>6</sup> *Arch. Ael.*, 4th series, xi. p. 186.

the Vallum and the S. gate of the fort; these terraces carry the foundations of the *vicus* buildings, and may be regarded as terraced building-sites made necessary by the steep slope of the ground. In the second place, there is a group of cultivation terraces, marked with longitudinal rigs, lying E. of the *vicus* and covering a considerable area S.E. of the fort; these intrude upon the terraces of the *vicus*, which are narrower, and at the junction of the two systems there are some indications that the stonework of the Roman terraces and foundations has been cleared up to leave space for the plough. As the cultivation terraces do not penetrate as far W. as the Roman road, it is to be presumed that the terrace dated by the excavation was one of *vicus* building-sites; and on this reading of the evidence the cultivation terraces must be dated to some period that is definitely later than the abandonment of the *vicus*. A mediæval or even later date would, therefore, be perfectly compatible with the Housesteads evidence.

#### VI. SUMMARY OF CONCLUSIONS.

The few positive conclusions that seem to emerge from the foregoing paper may be stated shortly as follows:—

1. Terraces are of several different kinds; it is possible that no single theory as to origin or date will fit all alike.

2. Some terraces have, in all probability, formed themselves, through the accumulation of disturbed soil along the edges of cultivated strips; while others appear to have been constructed purposely, or to have had their formation assisted by artificial means.

3. Local distribution, in areas where considerable numbers have survived, indicates that terraces occur on much the same ground as the rig-cultivations. Their location is not governed by elevation or aspect.

4. Modern cultivation has destroyed all trace of earlier systems over such large areas that little faith can be placed in the distribution map.

5. Subject to the warning stated in No. 4, general distribution points to Northumbria as a likely place of origin; and this fact in turn suggests a connection with the Anglian occupation of the country.

6. The few groups of terraces that are associated<sup>1</sup> with other remains are, respectively, earlier than the modern enclosed fields and later than (a) an apparently mediæval building, (b) two early village-settlements; while their relations with rig-cultivations are confused—the rigs being later than the terraces in certain cases and contemporary with them in others. These facts could be explained by dating the terraces in question to the late Middle Ages or later, and supposing that terraces and rigs were in use jointly over a long period of time. This theory is preferable to one connecting the terraces with the Anglian occupation, but the two

<sup>1</sup> In the strict sense of actual contact.

need not necessarily conflict if the terraces are supposed to have remained in use for a sufficiently long period.

7. The literary evidence supports the idea that terraces had gone out of general use by the middle, if not by the beginning, of the seventeenth century.

## APPENDIX.

*List of terrace groups and other sites noted for the purposes of the present paper.*

NOTE.—**Clarendon** type is used for the names of particularly large or important groups, and *italics* for those which are not shown on the distribution map.

## I. CHEVIOT DISTRICT.

**ROXBURGHSHIRE** (6-inch O.S. map revised in 1918).

- Venchen.—N.N.E. of Venchen Farm, below fort on Castle Law. NXI.  
 Staerough Hill.—On N.N.E. face of hill, above road. NXI.  
 Davie Rig.—On N. face of hill, above head-wall. NXV.  
 Burnhead.—On hillside W. of Burnhead. NXV.  
 Crookedshaws.—On N.W. slope of Crookedshaws Hill. NXV.  
 Shereburgh Hill.—On N.W. slope, above plantations and head-walls. NXV.  
 Shereburgh Hill.—On S.W. slope, extending to S. NXV.  
 Elghope Burn.—On right bank of burn, W. of lower Countridge plantation. NXV (marked).  
**Countridge Knowe**.—On S.W. face of Countridge Knowe, S. of plantation. NXV (marked).  
 Wood Hill.—At N. end of hill, S.W. and S.E. of plantation. NXV.  
 Wood Hill.—Above Woodside Farm. NXV.  
 Cliftoncote.—Immediately N.W. of the house. NXV.  
 Place Hill.—On slopes S.W. of Belford. NXXI.  
 Wondrum Hill.—N., N.E., and E. slopes of hill, from above Mow to enclosed lands of Calroust. NXXI.  
**Calroust Burn**.—On right bank of burn, N. of plantation opposite Calroust house. NXXI (marked).  
 Singingside Burn.—W. of burn, below square plantation. NXXI.  
 Singingside Burn.—At head of burn, between Green Cleugh and The Street. NXXI.  
 Calroust.—Above the house. NXXI.  
 Mow Law.—On N.E. slope of N. spur of Mow Law. NXXI.  
 Swindon Shank.—On left bank of Bowmont Water, below and E. of site marked "Fort." NXXI.  
 Swindon.—S.E. of the last, and immediately W. of upper part of enclosed lands lying above old houses. NXXI.  
 Bught Slack.—On S.W. face of Bught Slack. NXXI.  
 Sourhope Sike.—N.E. of the last, on right bank of Sourhope Sike. NXXI.  
 Sourhope Burn.—On right bank of burn, above houses. NXXI.  
 Sourhope Burn.—N. of the last, and adjoining Gloomy Cleugh. NXXI.  
 Fasset Hill.—On S. slope of Fasset Hill, about 400 yards E. of Sourhope. NXXI.  
 Cock Law.—N.W. of fort on point 1223, and above turf dyke marked "Earthwork." NXXI.

- Fundhope Rig.—On bluff between Kingseat Burn and tributary. NXXI.
- Braemoor Knowe.**—On lower S.W. slopes of Braemoor Knowe. NXIV and NXX (marked).
- Braemoor Knowe.—About 600 yards N. of N. end of the last, above head-wall. NXIV.
- Hownam Burn.—On slope above left bank of burn, N. of Hownam Rings fort. NXXI.
- Haystack Knowe.—In forks of Hownam Burn and Crooked Burn. NXXI.
- Bierhope Burn.—On left bank, E. of Over Whitton. NXX.
- Bierhope Burn.—On right bank, opposite Over Whitton. NXX.
- Thowliestane Hill.—On S.W. slope. NXX.
- Thowliestane Hill.—On S.E. slope, near Allerton Syke. NXX.
- Hownam Steeple.—On W. slope. NXX.
- Horseshoe Wood.—To S.W. and S. of the wood. NXX and NXXI.
- Tronshaw Hill.—On E. face, from S.W. of Greenhill to enclosed lands S. of Hownam. NXX.
- Headshaw Law.**—On the lower S. and W. slopes, extending much farther to N. and S.E. than is shown on O.S. map. NXXI.
- Big Law.—Below Biglaw Plantation. NXXI.
- Little Rough Law.—On N.E. slope, above Heatherhope Burn. NXXI.
- Little Rough Law.—On S.W. slope, flanking valley above The Yett. NXXI.
- Henshaw Law.—On lower W. slope of Henshaw Law, in enclosed ground of The Yett. NXXI.
- Philogar Hill.—On E. face of hill, below a horizontal strip of trees. NXX.
- Chatto Hill.—On W. face of hill, above Nether Chatto. NXX.
- Dod Law.—On N. slope of Dod Law, opposite Over Chatto. NXX.
- Over Chatto.—On left bank of Coldside Burn, W. of Over Chatto. NXX.
- Chatto Craig.**—On the N.E. slope of the hill, towards Over Chatto. NXX.
- Chatto Craig.—On E. and S.E. slopes of shoulder which extends E. from the fort. NXX.
- Wideopen Cleugh.—On left bank of Wideopen Cleugh and extending to left bank of Kale Water. NXX.
- Shank End.—On left bank of Kale Water S. of Wideopen Cleugh. NXX.
- Buchtrig.—Under trees 400 yards S.W. of house. NXXVI.
- Hangingshaw Hill.—On S.W. slope of hill, opposite Tow Ford. NXXVI.
- Woden Law.—On N.W. slope of hill. NXXVI.
- Woden Law.—On S.W. slope of hill. NXXVI.
- Loddan Hill.—On lower E. slope of hill, above left bank of Kale Water. NXXVI.
- Nether Hindhope.—On lowest slopes of Hindhope Law, S.E. of Nether Hindhope Farm. NXXVI.
- Kelso Hill.—On W. slope of hill, S.E. of Swineside Hall. NXX.
- The Law.—On N.E. slope of The Law, S.W. of Swineside Hall. NXX.
- Bloodylaws.*—Between farm buildings and bank of Oxnam Water. NXX.
- Pier Knowe.—On W. slope of Pier Knowe. NXXVI.
- Stotfield Hill.**—On S.W. slope of hill, opposite Edgerston policies. NXXVI.
- Letham.—About 600 yards N.E. of Letham, on S.E. slope of spur extending N.E. from point 984.6. NXXV.
- Southdean Law.—On N. side of summit, above head-wall. NXXV.
- Catlee Burn.—On left bank of burn immediately N. of Hell's Hole. NXXX.

## II. TWEED-CLYDE DISTRICT.

*SELKIRKSHIRE* (6-inch O.S. map revised in 1897).

- Bowerhope.—On S.E. shore of St Mary's Loch, immediately E. of enclosed lands of Bowerhope. XIII N.E.  
 Eldinhope.—On N.W. slopes of Eldinhope Knowe, and extending S.W. to shoulder of Hill 1291. X S.E. and S.W., and XIV N.W.  
 Clovenfords.—On W. slope of Meigle Pots, about 300 yards E. of Meigle Farm and just outside the wall bounding the cultivated lands. VII N.E.

*PEEBLESSHIRE* (6-inch O.S. map revised in 1897-8).

- Old Thornylee.**—On lower S.E. slopes of Cauld Face, and descending to Thornylee-Bow side-road. XIV A S.W.  
**Purvis Hill.**—Above road, immediately W. of Walkerburn. XIV S.W. (marked).  
 Tor Hill.—On N.E. slope of hill. XIII S.E.  
 Ven Law.—Between Venlaw House and Edinburgh road. XIII N.W.  
*Neidpath Castle.*—Near castle, on S.S.E. XIII N.W.  
 Edstone.—Immediately W. of Edstone Quarry Plantation, above head-wall. XIII N.W.  
 Cademuir Hill.—On N.W. slope of Cademuir Hill, about half-way between Red Well and fort site on point 1314. XII S.W.  
 Woodhouse.—Between Woodhouse and Glack, above road, XII S.E.  
 Glenternie.—Above head-wall of enclosed lands lying S.W. of policies. XVI N.E.  
 Macbeth's Castle.—On slope of Wood Hill, N.E. of Macbeth's Castle, just S. of wall running E. and W. XVI N.E.  
 Meldon Cottage.—Immediately adjoining W. side of Eddleston-Lyne road, about 300 yards N. of Meldon Cottage. XII N.E.  
 Stevenson.—On S.W. side of S. end of Stevenson Hill, above head-wall. XII N.E.  
 Wood Hill.—At N. end of scrub-wood 500 yards S.S.W. of Flemington. VIII S.W.  
 Wood Hill.—At a higher elevation than the last and nearly half a mile farther downstream, about opposite eighth milestone from Peebles on road. VIII S.W.  
 Whiteside Hill.—On lower W. slope of hill, opposite B.M. 718.7 on Lyne-Romanno road. VIII S.W.  
*Whiteside Hill.*—On same slope, S. of the last. VIII S.W.  
 Newlands.—S. of old church, at point marked "Grahames Walls." VIII N.W.  
**Romanno.**—Between Newlands Church and Romanno Bridge. VIII N.W. (marked).  
 Romanno Bridge.—In lower ends of two strips of wood adjoining road just N.E. of houses at Romanno Bridge. VIII N.W. (one group marked).  
 Halmyre Mains.—On N.W. face of summit of Hill 1171, above head-wall. VIII N.E.  
 Woolshears Wood.—Just within enclosed ground below felled portion of wood (crop-mark). XII N.W.

- Shaw Hill.—On E. face of hill, at elevation c. 950–1050 feet. VII S.E.  
*Muirburn Hill*.—On S.S.E. face of hill. XI N.E.  
 Skirling.—On S.E. slope of Mill Hill, c. 300 yards N.W. of church (crop-mark). XI S.E.  
 Goseland Hill.—On both sides of hollow at head of Bamflat Burn. XV N.E.  
 Goseland Hill.—On right bank of Cleugh Burn, near its head. XV N.E.  
 Mitchelhill.—On face of bluff forming left bank of burn from E. to S.W. of Mitchelhill Farm. XV N.W. (marked).  
 Kilbucho Church.—Just above head-wall of field lying S.W. of church. XV N.W.  
**Logan Burn**.—On both banks of Logan Burn, above and below junction with Dry Burn. XIX N.E.  
 Cockiland Hill.—On S.W. slope of hill, just above and E. of S.E. corner of stone wall enclosing fields on right bank of Talla Water. XIX S.E.  
 Victoria Lodge.—About 600 yds. S.E. of the last, behind and N.W. of Victoria Lodge. XXIII N.E.

*LANARKSHIRE* (6-inch O.S. map revised in 1896).

- Dunsyre**.—On lower E. and S.E. slopes of Dunsyre Hill. XXI S.E.  
*Kilbucho March*.—S. of Kilbucho-Culter track, c. 200 yards W. of county boundary. XL N.W.  
 Nisbet.—On slope immediately behind Nisbet Farm. XL N.W.  
 Nisbet Water (lower).—On left bank of burn, between enclosed land and lip of ravine. XL S.W.  
**Nisbet Water** (upper).—Above left bank of Nisbet Water, c. 1000 yards upstream from farm. XL S.W.  
**Culter Shaw**.—On S.E. face of Shaw Hill, c. 400 to 900 yards N.E. of the farm. XL N.W.  
**Culter**.—On W. extremity of Eastmains Hill, S.E. of manse. XL N.W.  
 Culter Mill Lead.—At foot of slope rising from left bank of mill lead c. 300 yards W. of bridge on Culter-Birthwood road (crop-mark). XL N.W.  
*Roberton*.—Immediately above modern cultivation on slope above left bank of Roberton Burn, N. of village.<sup>1</sup>  
 Fagyad Hill.—On N.W. slope of hill, about 150 yards above road and beside a circular enclosure. XLVI N.E.  
 Hartcleugh Burn.—On bluff dividing basin of Hartcleugh Burn from main valley, on W. of burn. XLVI N.E.  
 Kirkton Rig.—On lower N.E. slopes of Kirkton Rig, in basin of Hurl Burn. XLVII N.W.  
 Hurl Burn.—About 200 yards E. of Hurl Burn and 300 yards above road. XLVII N.W.  
 Gair Gill.—On right bank of Gair Gill, above modern fields. XLVII N.W.  
 Elvanfoot.—On slope of Reeve Gair, above marshy flat and c. half a mile W.S.W. of Elvanfoot Station. L N.W.

<sup>1</sup> This group could not be included in the distribution map as it was only found—by Mr O. G. S. Crawford, during an aerial reconnaissance—after the block of fig. 2 had been prepared.

## III. OTHER DISTRICTS.

*BERWICKSHIRE* (6-inch O.S. map revised in 1896-8).

**Hutton Mill.**—On left bank of Whiteadder, c. 400 yards above Hutton Mill. XVII N.E.

**Chester Hill.**—On steep slope below and N.E. of fort. XII N.W.

**Primrose Hill.**—Adjoining and below Staneshiel Fort. X S.E.

**Staneshiel Hill.**—On S. slope of hill, W. of Staneshiel Fort. X S.W.

**Barnside Hill.**—On right bank of Monynut Water, above Abbey St. Bathans. X N.W.

**Brotherstone.**—Below crags on S. face of Brotherstone Hill West, between Brotherstone and Craig House. XXX N.E.

*ROXBURGHSHIRE* (6-inch O.S. map revised in 1918).

**Rutherford.**—In a plantation bordering Kelso-St Boswells road, immediately N. of Rutherford Station. NIX.

*MIDLOTHIAN* (6-inch O.S. map revised in 1892-4).

**Heriot Siding.**—Immediately above N. end of siding, at foot of slope of Cakemuir Hill. XV S.W.

**Middleton.**—On right bank of Middleton North Burn, in second field upstream from lime-works. XIV S.E.

**Duddingston.**—On slope between Duddingston Loch and Queen's Drive. III S.E. and IV S.W.

**Dunsapie.**—On E. slope of Arthur's Seat above Queen's Drive, with outliers to S. and E. of Dunsapie Fort—the latter outside Park wall, under trees. III N.E. and S.E. and IV N.W.

**Haggis Knowe.**—On N.E. slope of Haggis Knowe. III N.E.

*STIRLINGSHIRE* (6-inch O.S. map revised in 1895-6).

**Easter Manuel.**—Near and to S. of Linlithgow-Polmont road, c. half a mile W.N.W. of Linlithgow Bridge. XXXI S.E.

*CLACKMANNANSHIRE* (6-inch O.S. map revised in 1899).

**Alva.**—On S. slope of Wee Torry, immediately above Alva and W. of Alva Glen. CXXXIII N.E.

*FIFE* (6-inch O.S. map resurveyed in 1893-5).

**Inverkeithing.**—On slope above and below cemetery. XLIII N.W.

**Wester Pitlour.**—Just below fort; now destroyed. XII S.W. (marked).

**Markinch.**—On N.W. face of Markinch Hill. XX S.W. (marked).

*PERTSHIRE* (6-inch O.S. map revised in 1894-1900).

**Dundurn.**—On W. slope of St Fillan's Hill, below fortifications of Dundurn. XCIII S.E.

**Newton Bridge.**—On lower slopes of Meall Reamhar, above house standing N.W. of bridge. LXXXIII N.E.

**Girron.**—Between farm-house and main road. LXXI S.E.

**Tullymurdoch.**—On N. side of road, c. 300 yards E.S.E. of Tullymurdoch. XLII S.E.