County Maps as Historical Sources

A Sequence of Surveys in South-East Scotland

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Chronological sequences of county maps, selected for comprehensiveness, locational accuracy and originality, can provide a means of mapping and dating landscape changes. A sequence of maps of south-east Scotland is evaluated here and its application exemplified by reference to the mapping of deserted settlement sites. The synoptic distribution pattern and its approximate dating can be reconstructed by means of the maps, and generalisation from later studies of a few well-documented sites becomes less hazardous.

Developments in the rural economy of upland Scotland before the nineteenth century are often poorly documented. Thus the historian must sometimes rely on other evidence, for example landscape change, for the study of underlying economic and social change. Such evidence is more frequently extant because physical features of the landscape were more readily mapped in the past and may still be found on surviving estate-surveys and county maps. The latter have a particular advantage over other documents for they enable study of change both in time and in place, and thus permit the observation not only of the chronology of change but also of its spatial pattern. This promises a clearer understanding of its process and its explanation. The aim of this paper is to illustrate the value of county maps for synoptic studies of landscape features.

The questions raised by such studies tend to focus, first, on the extent and distribution of the feature on the landscape, whether it is a form of settlement, of land use or of communication. Secondly, they focus on the date of this distribution pattern; and, finally, on its explanation. There is thus a need both for comprehensive mapping and comprehensive dating. Chronological sequences of county maps in which individual surveys are known to be comprehensive, accurate and original can satisfy this need. The maps enable large numbers of features to be plotted and approximately dated. They provide a synoptic framework of distribution and timing upon which studies of more detailed, but spatially limited, documents will point to particular dates and explanations. The synoptic framework of mapping and dating should make generalisation from a few case studies less hazardous.

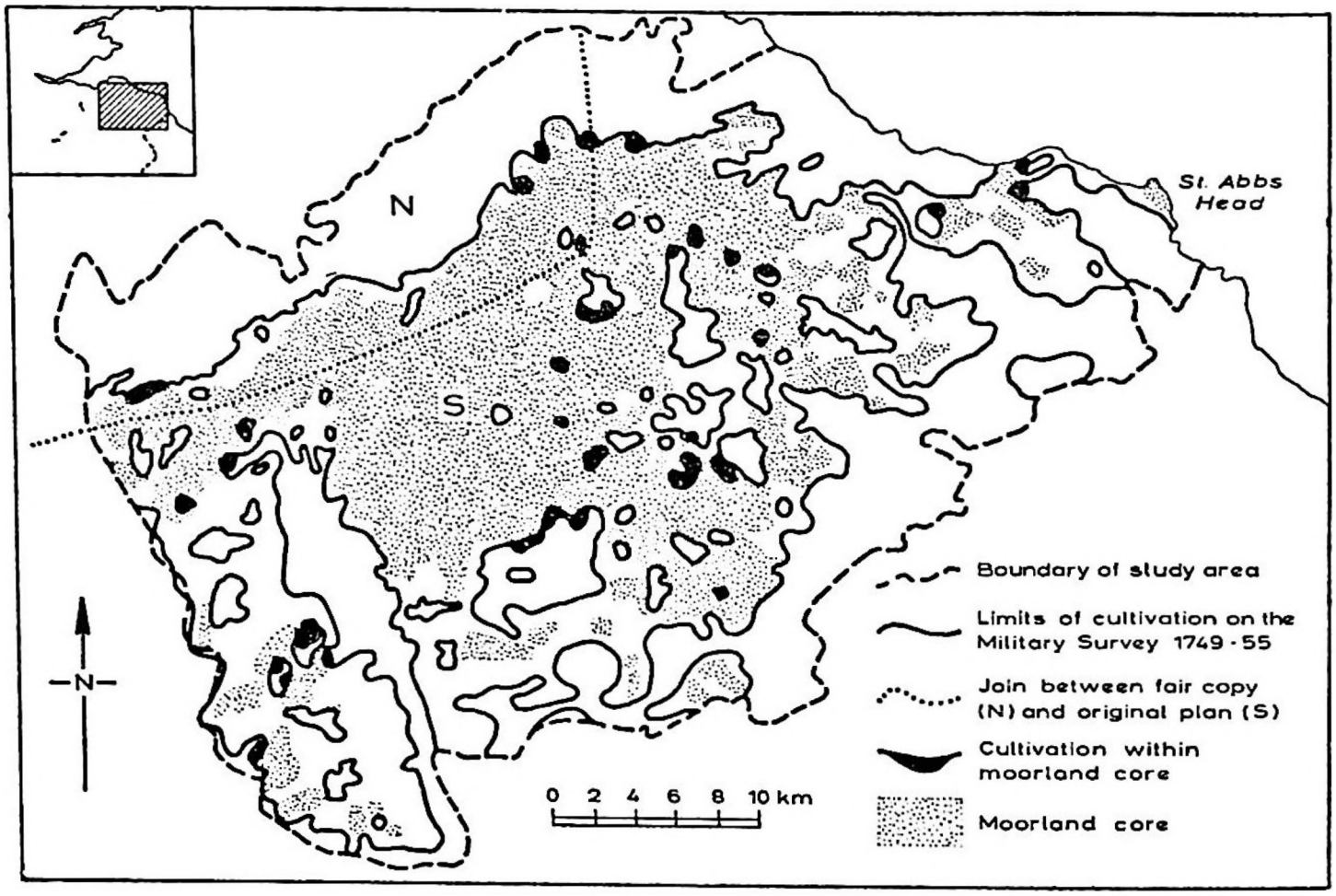

FIG. 1 Locational accuracy of the Military Survey.

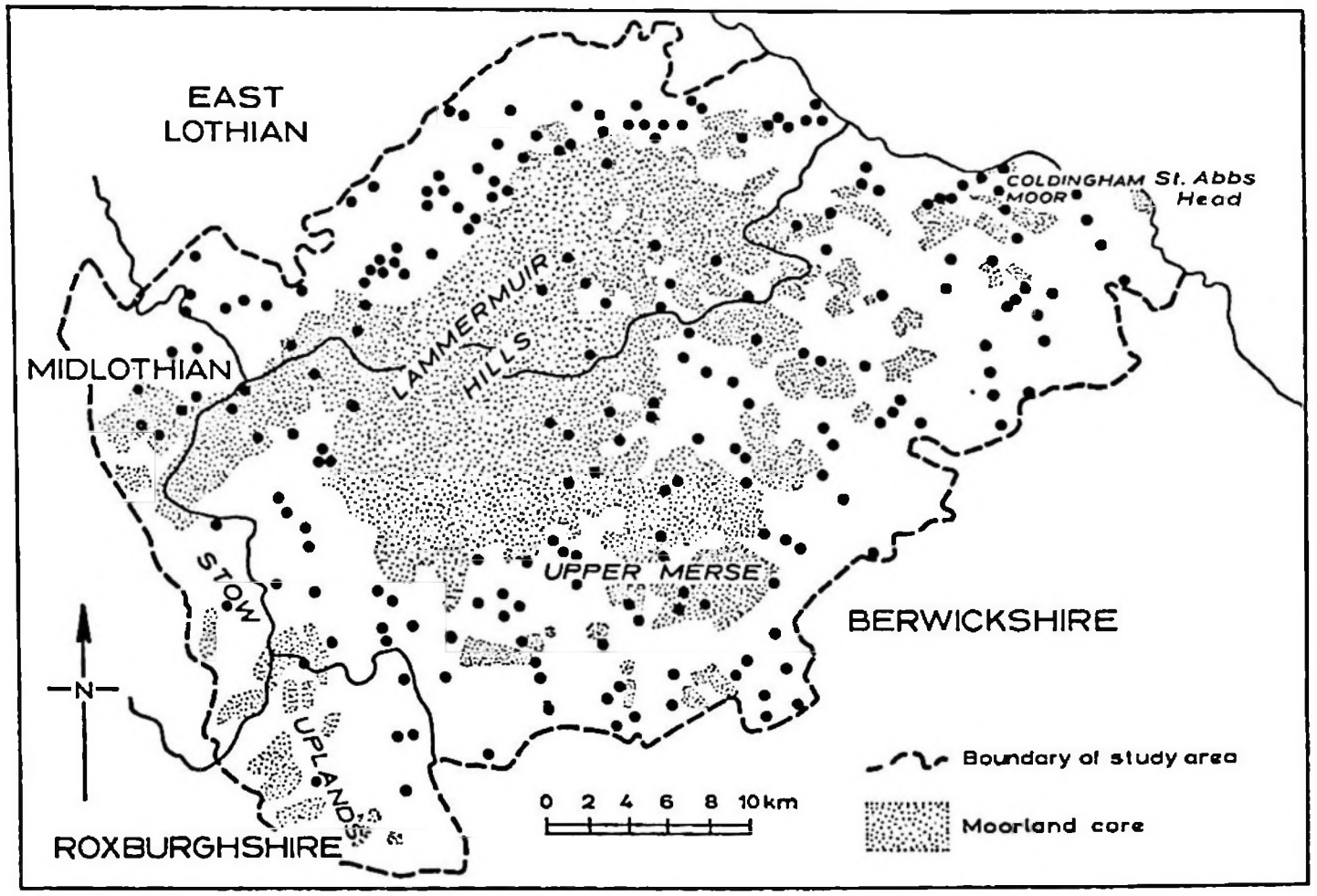

FIG. 2 Settlements abandoned *c.* 1596–1860.

Procedure

This paper outlines the construction of a sequence of county maps for the Lammermuir Hills and Stow Uplands which straddle the borders of four counties in south-east Scotland (Figures 1 and 2). The purpose of the sequence is to provide information on changes in the quantity and pattern of upland cultivation and settlement which occurred between about 1600 and 1860, the date of the first 'detail mapping' by the Ordnance Survey. Changes in the distribution of woodland, roads, enclosures, and other landscape features could, of course, also be studied usefully on such maps.

Each map is first evaluated to ascertain its completeness and locational accuracy and, since the maps will be compared amongst themselves to assess changes in quantity and distribution of settlement, it is necessary to select those which are representative of all stages of the period of study. The surveys are therefore dated and analysed in terms of their originality and the degree of plagiarism of earlier surveys which they may exhibit. This evaluation is based upon a comparison of map content rather than on a study of authorship and survey technique. Following the evaluation, a brief example is presented of the application of the map sequence to settlement studies.

The Early Map Coverage

Twenty-nine printed and three manuscript county maps at scales larger than 1 : 200,000 are extant for the Lammermuir Hills. These are listed in Table 1 (p. 18). Less detailed surveys of a larger scale and of the whole of Scotland, such as those of Dorret (1750), Ainslie (1789) and Arrowsmith (1807), are not included. The Military Survey of Scotland (1747–55) is the only national map of sufficient detail to warrant examination in this context.

Evaluation

The Military Survey of Scotland, 1747–55. In terms of landscape detail the Military Survey is the single most valuable record of eighteenth-century Scotland. The technique of the survey and the history of the maps themselves have been fully discussed (Skelton 1967: 7–11; RSGS 1973: 103–13). There remain, however, the questions of completeness and of locational accuracy.

The accuracy of the survey varies greatly. Most important, the original plan for the south of Scotland, of which no fair copy was made, may be less accurate and less comprehensive than the north, where major alterations, perhaps even involving re-survey, were made of the original plan (B.M. K.Top. XLVIII. 25–1a) for a fair copy (B.M. K.Top. XLVIII. 25–1b, c). Skelton (1967: 11) assumes that the original plan of the south and the fair plan of the north were designed as a single map since they fit together exactly. This fit, however, is achieved through a sharp increase in neatness toward the margin of the original plan. The suggestion is that it was originally designed only as a

TABLE I

County maps of the Lammermuir Hills and Stow Uplands

Those marked thus * are judged as original and accurate

Date of publication	*Approx. date of survey*	*Author/atlas*	*Engraver*	*Title*	*Approx. scale*
* 1610	1583–96	Pont, T.	Hondius, J.	A New Description of the Shyres of Lothian and Linlitquo	1 : 101,376
1631	1583–96	Pont, T.	Hondius, J.	The Shyres of Lothian and Linlitquo	1 : 101,376
1654	1583–96	Pont, T.	Jansson, J.	Provincae Lauden seu Lothien et Linlitquo	1 : 101,376
* MS	1636–48	Gordon, R.	MS	A Description of the Province of Merche (N.L.S. G.58)	1 : 147,480
1654	1636–48	*Atlas Novus*	Blaeu, J.	The Merce or Shirrefdome of Berwick	1 : 84,480
1654	1636–48	*Atlas Novus*	Blaeu, J.	Lauderdalia	1 : 50,688
1654	1583–96	*Atlas Novus*	Blaeu, J.	Lothian and Linlitquo	1 : 152,064
* MS	1682	Adair, J.	MS	East Lothian (N.L.S. A.10)	1 : 76,032
1736	1682	Adair, J.	Cooper, R.	Map of East Lothian	1 : 76,032
1744	1682	Elphinstone, J.	Smith, T.	Map of the Lothians	1 : 126,720
1745	1682	Millar, A.	Kitchin, T.	Complete and Exact Map of the Lothians	1 : 126,720
1745	1682	Adair, J.	Cooper, R.	The Lothians	1 : 50,688
* MS	1749–55	Board of Ordnance	MS	Military Survey of Scotland (B.M. K.Top. XLVIII. 25–lb,c, 38 sheets)	1 : 36,000
1763	1763	Laurie, J.	Baillie, A.	Map of the County of Midlothian	1 : 33,347
* 1770	1770	Stobie, M.	Bayly, J.	Roxburghshire	1 : 63,360
* 1771	1768–70	Armstrong, A. & M. J.	Bell, A.	County of Berwick	1 : 63,360
* 1773	1770–73	Armstrong, A. & M. J.	Kitchin, T.	Map of the Three Lothians	1 : 63,360
1772	1768–70	Armstrong, A. & M. J.	Gavin, H.	Berwickshire	1 : 126,720

TABLE I—*contd.*

Date of publication	*Approx. date of survey*	*Author/atlas*	*Engraver*	*Title*	*Approx. scale*
* 1797	1797	Blackadder, J.	Ainslie, J.	Berwickshire	1 : 63,360
* 1801	1801	Forrest, W.	Kirkwood, J.	Haddingtonshire	1 : 31,680
* 1816	1804–10	Knox, J.	Neele, S. J.	Shire of Edinburgh	1 : 42,240
1821	1797	Thomson's *Atlas*	Neele, S. J.	Berwickshire	1 : 92,160
1821–2	1804–10	Thomson's *Atlas*	Neele, S. J.	Edinburghshire	1 : 42,240
1822	1770	Thomson's *Atlas*	Hewitt, N. R.	Roxburghshire	1 : 101,376
1822	1799	Thomson's *Atlas*	Neele, S. J.	Haddington	1 : 67,584
* 1825	1824	Sharp, T., Greenwood, C. & Fowler, W.	Dower, J.	County of Haddington	1 : 63,360
* 1826	1825	Sharp, T., Greenwood, C. & Fowler, W.	Dower, J.	County of Berwick	1 : 63,360
* 1828	1827–28	Sharp, T., Greenwood, C. & Fowler, W.	Dower, J.	County of Edinburgh	1 : 63,360
* 1838	1838	Tennant, N.	Johnston, W.	County of Roxburgh	1 : 42,240
1842	1827–8	Johnston, W. & A. K.	Dower, J. & Johnston, W. & A. K.	Edinburgh–Midlothian	1 : 63,360
1845	1827–8	Fowler, W.	Johnston, W. & A. K.	County of Edinburgh	1 : 63,360
1845	1824	Fowler, W.	Johnston, W. & A. K.	Plan of the County of East Lothian	1 : 63,360

first draft but that circumstances forced a decision to adapt the draft so that it would stand as a final map. Indeed, there was a need to complete the survey swiftly for several engineers had already been recalled in 1755 to survey fortifications in southern England against a threatening French invasion (Roy 1785). The implication is that differences in accuracy between the north and south sheets may be significant. The junction between the sheets in the study area is therefore shown in Figure 1.

Comprehensiveness, however, is greater than might be expected. In all, 717 settlements are located in the study area, while 846 are recorded on the more detailed maps of the late eighteenth century. Of the difference (129), it is evident from other county maps and from estate documents that only thirty-five were in existence in about 1750 but were overlooked by Roy. The remaining ninety-four seem to have been established on newly-enclosed or reclaimed land toward the end of the century.

The accuracy, but not the comprehensiveness, of cultivation-mapping by the Military Survey can be checked by reference to the relict landscape. Field evidence of mid-eighteenth-century cultivation will, of course, have been obliterated where the cultivation limit has since advanced but, where the limit has retreated, evidence of early

cultivation ridges should exist in presently unimproved moorland. Figure 1 reveals that most of the 1750 cultivation limit now lies below the moorland edge. There are, however, twenty-eight locations, comprising 500 ha (1235 acres), at which cultivation-symbols on the Military Survey almost certainly correspond to areas of abandoned cultivation ridges mapped from aerial photographs.[1] At a further nine locations, comprising 105 ha (260 acres) the correspondence is less certain. Only two areas of tillage marked by the survey lie within the moorland core[2] of the Lammermuirs yet cannot be related to sites of former cultivation in the field.

Correspondence between the Military Survey and the field evidence suggests that, albeit in a limited number of cases, the Survey accurately located the distribution of early cultivation. It seems at least 600 ha (1480 acres), or about 1.5 per cent, of the moorland core of the Lammermuir Hills was cultivated in about 1750 but abandoned before 1860. A study of the content of the Military Survey thus suggests that it is a reasonably comprehensive record. But details of location and quantity may only be confidently accepted where these are confirmed by field evidence.

Pont, Gordon and Blaeu, c. 1583–1648. Since the work of Cash (1901, 1907) some attention has been given to the manuscript surveys which lie behind Blaeu's *Atlas Novus* of 1654 (RSGS 1936; Moir and Skelton 1968; Kinniburgh 1968; Megaw 1969; Stone 1968, 1970, 1971; RSGS 1973). Much of this has attempted to distinguish between the contribution of the surveys of Pont and those of Robert and James Gordon to the published maps. The conclusion is that the pioneer Pont surveys were executed between 1583 and 1601 (RSGS 1936), and probably before 1596 (Stone 1971). There is no indication that the later copies of 'Lothian and Linlitquo' were updated, but it seems that the Pont survey of Berwickshire, which does not survive, was probably supplemented with additional material by Robert and James Gordon over 1636–48 (Stone 1970, 1971). The Blaeu 'Merce' (1654) and 'Lauderdalia' (1654) are based on this Gordon manuscript. Thus the map record for East Lothian and Berwickshire may well refer to entirely separate periods. The absence of detailed earlier maps eliminates the possibility of plagiarism.

The completeness of these early surveys is difficult to assess without sufficient contemporary yardsticks, for there are no estate-plans extant for this period in the study area. The abstract layout of the maps gives an impression of a low level of comprehensiveness. Yet this is misleading, for an analysis of the maps reveals the close attention given to detail. A total of 405 towns, fermetouns, and steadings is located by Pont and Gordon in the study area, while 717 are exhibited by the later Military Survey of much larger scale. If, as analysis of other material suggests,[3] there was no substantial increase in the number of settlements in the intervening century, it seems that the Blaeu maps present about a 70 per cent coverage of then existing settlement. This conclusion is a qualification of Lebon's assertion that the Pont manuscripts are a faithful record of the seventeenth-century landscape (Lebon 1952).

The locational accuracy of the surveys is variable, with some large errors of distance. Yet all but six of the 405 settlements within the study area could be precisely located by association with place-names on later maps or by identification of the former settlement-site on aerial photographs and in the field. Given such corroboration of evidence, these early maps of Pont and Gordon's revision of Pont can be used with confidence in a sequence of landscape surveys.

John Adair, 1682. The 'Map of East Lothian' (1736) is an almost exact copy of a manuscript of 1682 (N.L.S., A.10). Some minor changes were made by the engraver, apparently for the benefit of neater production, for these included the omission of some settlements that continued to exist into the eighteenth century. Certainly none of the changes represents an up-dating of the original work.

Inglis (1918) has noted the precision with which Adair worked. The published maps of the survey by Pont would certainly have been available for reference but there is no indication that Adair borrowed from them. Indeed, he located a third more settlements than did the earlier cartographers for the same area. Three steadings are also omitted on his map which are indicated by Pont and are confirmed by place-name evidence, and since there is no mention of these by later surveyors or in estate documents, the suggestion is that they were abandoned between 1596 and 1682. It thus seems that Adair either did not refer to Pont's survey, or was at pains to check for changes that might have occurred in the preceding ninety years. It would be valid, then, to make comparisons between the Adair manuscript and the Pont maps with respect to changes in settlement.

Elphinstone, Millar and Adair, 1744–5. These are reduced copies of the Cooper engraving of Adair (1736).

Stobie, Armstrong and Laurie, 1763–73. It seems that the Military Survey may not have been made available to any of the county surveyors except Arrowsmith, who was allowed access to it in 1805–6 (Skelton 1967). Moreover, increases in detail and the omission of settlements marked by the Military Survey testify to the originality of later maps.

Matthew Stobie's 'Roxburghshire', surveyed in 1770, is apparently in part a compilation of his own estate surveys. A substantial increase in accuracy over the Military Survey is illustrated by the plotting of 17 per cent more settlements. About 5 per cent of the steadings marked by the Military Survey in the Roxburghshire part of the study area are not indicated by Stobie, and, since he evidently did not plagiarise earlier surveys, it would be valid to make comparisons between Stobie's work and the rolls of the Survey in order to ascertain the number of settlements abandoned in the intervening twenty years.

The surveys of Andrew and Mostyn Armstrong were probably executed over

1768–73. The 'Map of the Lothians' (1773) locates more than twice the number of steadings in the study area than did Adair for 1682, and 20 per cent more than did the Military Survey for 1750–2. The omission of 5 per cent of the Survey's steadings suggests that the Military Survey was never referred to by the Armstrongs. More individual settlements are to be found for the study area on both the 1771 and 1773 maps than on the 1 : 25,000 Ordnance Survey coverage of 1954. This confirms the completeness and originality of the work. The only suggestion of any reference made to earlier surveys is the similarity of some unusual place-names to those marked by Blaeu. It is possible that the Armstrongs used the Pont and Gordon surveys as a partial basis for their maps. The map of Berwickshire (1772) is a reduction of that of 1771.

Blackadder, Forrest and Knox, 1797–1812. The county maps on which John Blackadder and William Forrest were working in 1797 and 1799 were partly the product of their own estate plans. Both were surveying in East Lothian and Berwickshire in the 1790s, and both had established a reputation for their skills (Thomson 1832:v–vi). There is no doubt that they referred to the work of the Armstrongs: there are particular similarities in the spelling of place-names that must be more than coincidental. But it is evident that much information was both added and omitted by the later cartographers. Ten per cent more settlements were recorded by Blackadder and Forrest than by the Armstrongs. Moreover, seventy-one fermetouns and steadings that were located by the Armstrongs in 1768–73 and confirmed by aerial or place-name survey, were not noted on the later surveys. It is clear, then, that there was no wholesale transference of earlier data on to the county maps of the 1790s and that most of the discrepancies between the maps of 1768–73 and those of 1797–9 are due to real changes in settlement rather than to an improved quality of the map-work itself. Thus the conclusion is that, while no firm inferences may be made concerning the establishment of settlements between 1768–73 and 1797–9, the omission from later and more detailed maps of settlements marked on earlier surveys may be indicative of their abandonment over the intervening period.

Knox's 'Shire of Edinburgh' (1816) was surveyed between 1804 and 1810 (Thomson 1832:v). The originality and accuracy of this work is confirmed by a 22 per cent addition and 6 per cent omission of settlements in terms of the Armstrongs' surveys of 1768–73.

Thompson, 1821–2. The maps in Thomson's *Atlas of Scotland (1832)* are, without exception, based on the work of earlier cartographers. In most cases this debt is acknowledged: Neele's engravings of 'Haddington' (1822) and 'Berwickshire' (1821) are copies of Forrest (1799) and Blackadder (1797). 'Edinburghshire' (1821–2) is based on the survey by Knox, and Hewitt's 'Roxburghshire' (1822) is almost a facsimile of Stobie (1770). There is no evidence to suggest that the surveys were up-dated for their re-issue.

Sharp, Greenwood and Fowler, 1824–8. It is probable that the topographic basis of these maps is the work of an Ordnance Survey triangulation team which moved into Scotland in 1820 under the direction of Major-General Thomas Colby and surveyed in the region until 1825, after which it was called to Ireland at the time of the 'land question'. Detailed mapping by the Ordnance Survey did not begin in Scotland until the resumption of the trigonometrical survey in 1838 (Close 1926:89). It seems, therefore, that much of the data on settlement were collected in the field by Greenwood and Fowler for Berwickshire in 1825, for East Lothian in 1824 and for Midlothian in 1827–8. There is little correlation between these data and those on the maps of the 1790s: about 7 per cent of Blackadder's and Forrest's steadings are omitted and a further 8.5 per cent which were previously unrecorded are located.

The maps by Sharp, Greenwood and Fowler thus seem to provide a trustworthy coverage of the study area to bridge the period between the county maps of the late eighteenth century and the publication of the first edition of the Ordnance Survey in the 1850s.

Tennant, 1838. Tennant seems to have referred to the work of Stobie (or, at least, to Hewitt's copy) but made a large number of alterations to the map detail which are confirmed as accurate by contemporary estate documents.

Johnston, Fowler, 1842, 1845. The maps of Midlothian by W. and A. K. Johnston and by Fowler are either facsimiles or compilations of the surveys by Greenwood and Fowler.

Summary. It is evident from this discussion that only fourteen maps (less than half of the total coverage) provide a more or less complete, accurate and original basis for the study of past landscapes in south-east Scotland. These maps are distinguished in Table 1. The dates of surveys fall into five distinct periods: *c.* 1583–1648 (Pont, Gordon); 1749–55 (Military Survey); 1768–73 (Armstrongs, Stobie); 1797–1810 (Blackadder, Forrest, Knox); 1824–38 (Sharp *et al.* and Tennant). Roxburghshire is not represented for the 1790s, and East Lothian has an extra record for 1682 that is not available for the remainder of the study area.

Application of the Source Material

An indication of the value of such a map sequence to the student of economic history may be exemplified by brief reference to the pattern of settlement abandonment in the Lammermuir Hills.

The relative accuracy and originality of maps in the sequence make it unlikely that steadings which continued to function would be overlooked by all later surveyors, particularly when several of them had access to earlier maps. The implication is that

those settlements which disappear from the map record were in fact abandoned and became derelict. In most cases this dereliction is confirmed by field evidence as well as by disappearance from estate maps and from the Register of Sasines.

Comparison of the maps shows that 262 settlements appear at least once in the sequence but are unrecorded on any later map. Of these, the sites of only six, all of which are mapped by Pont or Gordon alone, cannot be located accurately, and it is possible that these were inaccurately recorded by their surveyors. The remaining 256, however, may be located by reference either to their association with place-names on the first edition 1 : 10,560 Ordnance Survey maps, or to relict evidence of their sites in the field or on aerial photographs. The existence of 98 per cent of the settlements may thus be confirmed by place-name or field evidence. Of these, 248 were evidently farmsteads or fermetouns rather than inns or mills.

The distribution of these steadings, illustrated in Figure 2, exhibits a marked concentration at high elevations near the edge of the moorland core. More than one-fifth lie in the moorland or within 0.25 km of it. This suggests that a cause of abandonment may have been those changes affecting the economic status of marginal agriculture in the area. The pattern of abandonment itself may thus point to an explanation.

Moreover, the dating of this abandonment might be interpreted, in an approximate fashion, from the period in the map sequence at which the settlements disappear. Nineteen steadings disappeared before 1750, 27 over 1750–70, 75 over 1770–1800, 54 over 1800–25, and the remaining 73 between 1825 and about 1860.

Conclusion

The evaluation of a coverage of thirty-two maps for south-east Scotland suggests that fourteen surveys executed between about 1596 and 1860 are original and reasonably comprehensive. This sequence of surveys may be useful in mapping and dating changes in several types of landscape feature. An example is that of settlement abandonment. Evidently about 24 per cent of the total number of settlements existing in the study area after *c.* 1596 was deserted before 1860.

Several questions are thus raised: the date, process and cause of this abandonment, the function and life-span of the settlements, the extent of abandonment elsewhere. Some questions, such as the approximate date of abandonment, may be answered by the county-map sequence, others require investigation of more specific sources. Yet it is clear that a sequence of county maps may be used in three ways as a source for the study of economic change. First, it may provide a framework of comprehensive information on quantity and location upon which may be founded subsequent, more specific studies of date, process and explanation. Secondly, it enables the approximate dating of change through the comparison of different surveys. These two applications comprise a synoptic approach which makes less hazardous the generalisation from later studies of a few, well-documented sites. Finally, the sequence of maps may be used to reconstruct spatial patterns of change which may assist in its explanation.

NOTES

1 For details of the mapping from aerial photographs see Parry 1973:43–95.
2 The moorland core defines the area consistently recorded by Ordnance Survey maps since about 1860 as rough pasture.
3 See Parry 1973:213–34. Upland settlement exhibits a pattern of retreat and consolidation over 1600–1750. Evidence for this conclusion is drawn from a variety of estate documents, and from Mitchell (1908) and MacGrigor (1835).

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