

# Northumberland Field Systems

By R. A. BUTLIN

THE AGRARIAN history of the county of Northumberland has been the subject of much speculative enquiry, yet its main outlines are still unknown. Gray thought the county to be a "region which in regard to its settlement and field systems was transitional between Celtic and Midland areas."<sup>1</sup> Uhlig, in his study of the landscape of north-eastern England, states that "the former use of permanent arable land in small, long strips, and its location on the naturally best drained fields close to the settlement, whilst the outer fields remained a *Block-Flur* with a field-grass system, show striking similarities not only to the Scottish run-rig system, but also to the *Esch*, the strip infield of the oldest nuclei of the North Western German villages."<sup>2</sup> The Orwins were satisfied that "in the Middle Ages the system (open-field) prevailed all over Northumberland, except in the moorland areas,"<sup>3</sup> and Tate, in the preface to his study of Northumberland enclosures, says: "one would expect the county to fall into a group of transitional districts, whose agriculture shows traces of Celtic 'run-rig' and of the more pure Germanic open fields of the Midlands."<sup>4</sup> It is perhaps unfortunate that none of these authors has chosen to make extensive use of the surveys and maps of the county which appeared during the course of the sixteenth and seventeenth centuries, for these, in many instances, give a detailed picture of the anatomy of the Northumberland field system, and confirm the suspicion, voiced by some of these authors, that the field systems of the county show marked affinities with both Scottish and Midland arrangements.

The immediate impression given by these surveys is that regional variations in agricultural practices were strongly related to the varied physiographic and edaphic conditions which obtain in Northumberland, and the most significant contrast appears not to be between areas which had experienced differing ethnic or social histories, but between the high barren moorlands in the western, central, and southern districts, and the lower,

<sup>1</sup> H. L. Gray, *English Field Systems*, 1915, p. 227.

<sup>2</sup> H. Uhlig, *Die Kulturlandschaft: Methoden der Forschung und das Beispiel Nordost England*, Cologne, 1956. See also an article by same author: 'Old Hamlets with Infield and Outfield systems in Western and Central Europe', XIXth Internat. Geog. Cong., Symposium on The Morphogenesis of the Agrarian Cultural Landscape, Stockholm, 1960.

<sup>3</sup> C. S. and C. S. Orwin, *The Open Fields*, Oxford, 1954, p. 66.

<sup>4</sup> W. E. Tate, 'A Handlist of English Enclosure Acts and Awards, Part 26—Northumberland', *Proc. Soc. of Antiquaries of Newcastle-upon-Tyne*, ix, 4th Series, p. 39.

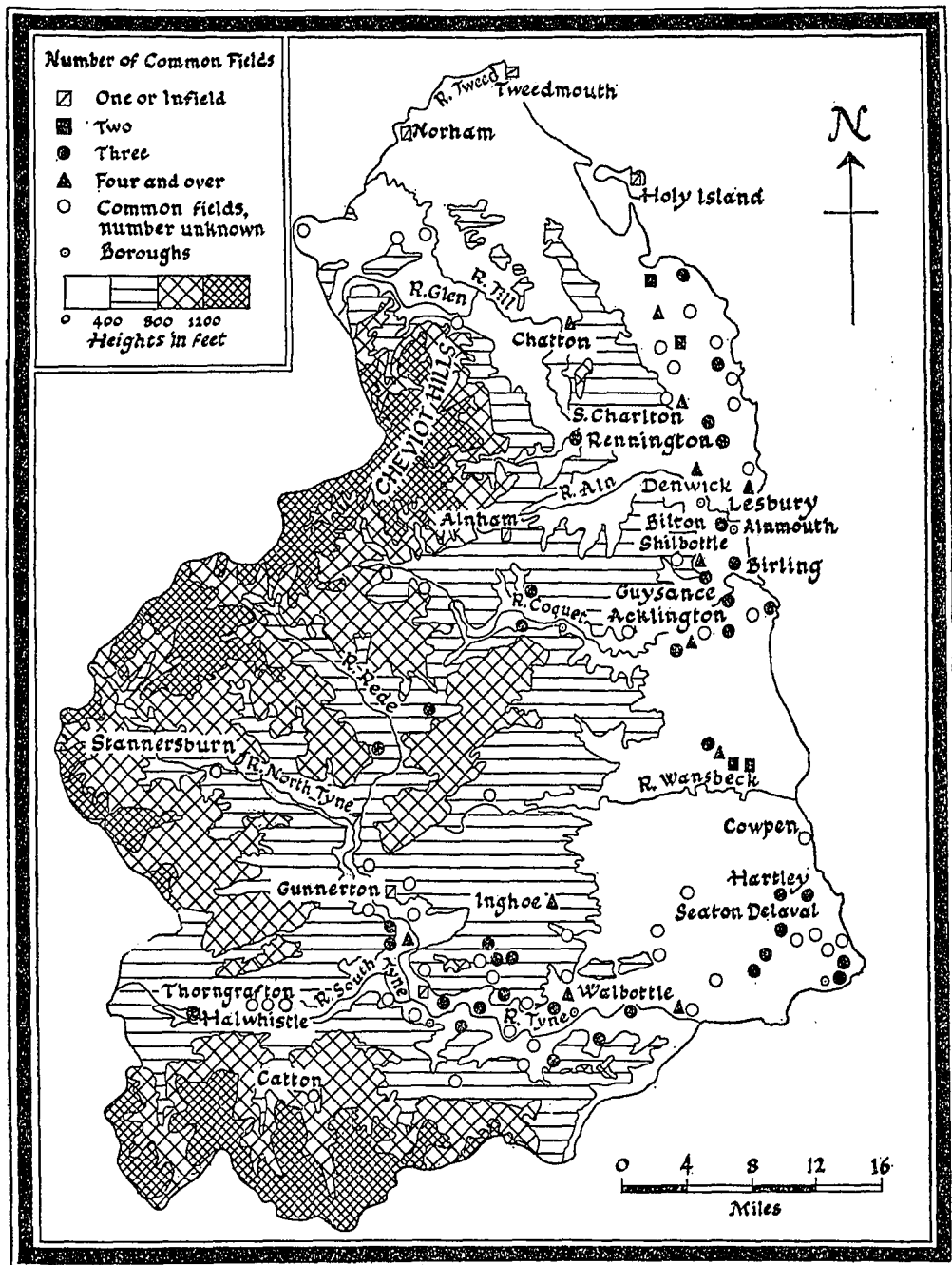


FIG. I  
NORTHUMBERLAND FIELD SYSTEMS

drift-covered, scarps and coastal plain, and the alluvial valley floors of such rivers as the North and South Tyne, Wansbeck, Blyth, Till, Glen, Aln, Rede, and Coquet.<sup>1</sup> The importance of the physiography of the county in this respect is mirrored in the varied amounts of arable land recorded in the sixteenth- and seventeenth-century estate surveys, for these indicate a marked concentration, in the coastal plain and major river valleys, of townships with 200 or more acres. There seems to have been a remarkable concentration on Tweedside and in the valleys of the Till and the Beamish, where the soils are derived in large measure from boulder clay, glacial gravels, river alluvium, and terrace gravels. The heavier concentration of arable land in the northern half of the coastal plain, in contrast to the lesser amounts of the southern half, can also be seen as a reflection of edaphic conditions, for the boulder clay of the northern half is less heavy than that in the south. It would be wrong to assume that all the arable land recorded in the surveys was common and open, but the maps and terriers show that almost 90 per cent of the arable was both common and open, and was located in large fields which were greatly subdivided into small elongated parcels. It is these quantities of common arable, when studied in conjunction with the number of fields and the distribution of holdings within them, that point to the fact that many parts of Northumberland had, at this time, field systems which bore strong resemblance to the systems of lowland and Midland England. From these they differed only in respect of the large areas of pasture and waste, appropriated or lying adjacent to many of the townships, which facilitated a process of temporary expansion of the arable area.

Of a total of 115 townships in the county which, in the sixteenth- and seventeenth-century surveys, record the existence of common and open fields, 4 had two fields, 36 had three, 10 had four, one had five, one had six, 6 had 'infields' or 'ingrounds', 51 had 'common fields' but make no mention of the precise number, and there were 6 boroughs with open 'town fields'. Within each of these groups there was naturally a great deal of local variation, but a number of common characteristics can be discerned in some of them.

There are a number of townships where the basis of intensive cultivation was three common fields, between which the highly fragmented holdings of the tenants were equally divided. These two facts indicate the similarity of the field systems of parts of Northumberland to the 'Midland' three-field system, and they are illustrated by the agrarian arrangements of the townships of Shilbottle, Chatton, Walbottle, Hartley, Seaton Delaval, and many others.<sup>2</sup>

<sup>1</sup> See note on "Maps and Surveys" at end of paper.

<sup>2</sup> For location of examples cited see Fig. I.

In 1618, the common arable and part of the common meadow of Shilbottle consisted of four parts: the North Field (347a. 1r. 37p.), Middle Field (268a. 9p.), South Field (349a. 3r. 32p.), and the 'Four farms at the head of Shilbottle' (200a.). This latter part of the township had been separated from

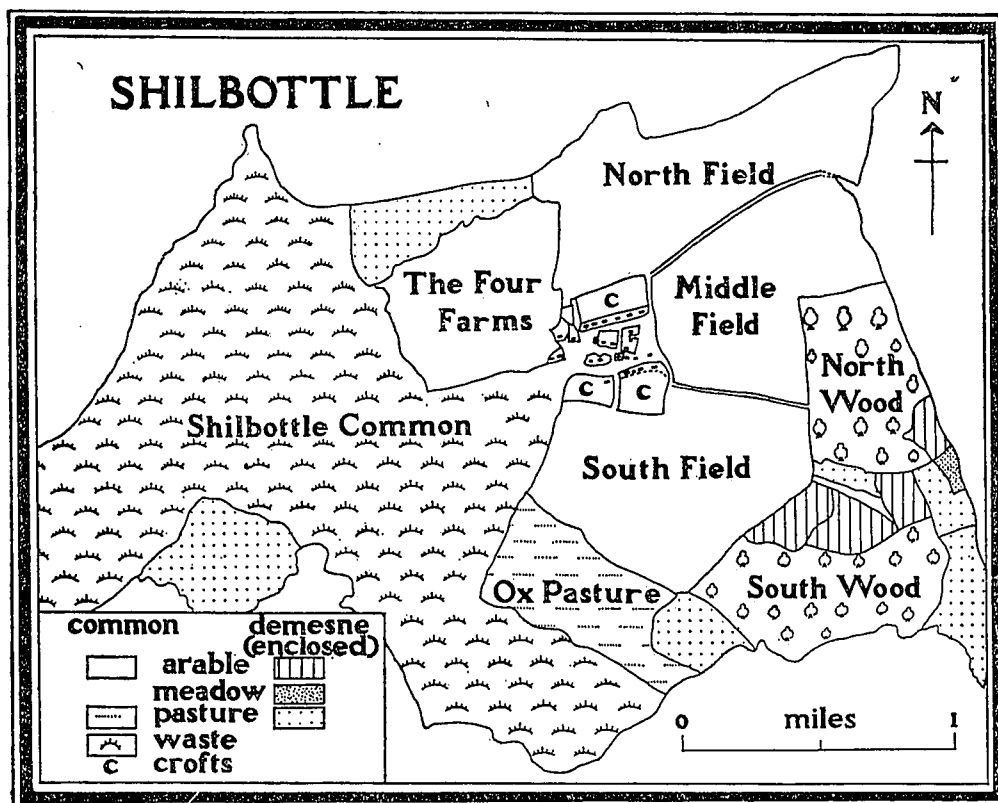


FIG. II  
SHILBOTTLE

Based on Norton's map of 1624 (Aln. Mss. O. IV, 1 (a)). The North and South woods were enclosed demesne land (pasture and woodland) demised to Thomas Stamp.

the rest by four customary tenants during the course of the sixteenth century: "for they have their arable land and medowe lyinge together with a certain parcell of pasture ground enclosed with hedges within themselves which is more comodyous to them than yf yt lay as thother doth."<sup>1</sup> The land of the other tenants lay in the three common fields, with their "lands lying on the fielde rigge by rigge to his neighbours according to the old devysion of lands

<sup>1</sup> G. Clarkson, A description and survey of divers of the possessions of the Right Honble the Earl of Northumberland in the County of Northumberland etc., 1566 (1567) (=Clarkson), MS. Alnwick Castle (=Aln. Mss.) A.11.

in this country." There were nineteen customary tenants in Shilbottle at this date of whom four occupied the four farms "at the head of" the town.<sup>1</sup> Table A shows the disposition of the holdings of the others. Gray considers that "this is unquestionably the fundamental trait of the system under con-

TABLE A  
DISTRIBUTION OF HOLDINGS IN SHILBOTTLE COMMON FIELDS

| Size of Field       | NORTH FIELD  |              |                | MIDDLE FIELD |           |           | SOUTH FIELD |           |           |
|---------------------|--------------|--------------|----------------|--------------|-----------|-----------|-------------|-----------|-----------|
|                     | <i>Acres</i> | <i>Roods</i> | <i>Perches</i> | <i>A.</i>    | <i>R.</i> | <i>P.</i> | <i>A.</i>   | <i>R.</i> | <i>P.</i> |
|                     | 341          | 1            | 37             | 268          | 0         | 9         | 349         | 3         | 32        |
| Copyholders         |              |              |                |              |           |           |             |           |           |
| John Johnson        | 12           | 3            | 25             | 12           | 1         | 15        | 17          | 2         | 10        |
| Richard Garrat      | 15           | 0            | 8              | 14           | 1         | 0         | 17          | 3         | 38        |
| John Garrat         | 14           | 0            | 8              | 12           | 1         | 10        | 18          | 2         | 10        |
| Thomas Stamp Sen.   | 14           | 3            | 27             | 13           | 0         | 23        | 16          | 3         | 12        |
| Thomas Stamp Jun.   | 13           | 3            | 16             | 13           | 3         | 14        | 17          | 0         | 24        |
| Oswald Chambers     | 15           | 1            | 26             | 12           | 3         | 27        | 15          | 3         | 25        |
| John Emleton        | 14           | 0            | 2              | 13           | 0         | 35        | 15          | 3         | 30        |
| Nicholas Horne      | 14           | 0            | 11             | 11           | 3         | 17        | 15          | 0         | 23        |
| Robert Huntley      | 15           | 2            | 6              | 12           | 3         | 1         | 16          | 1         | 39        |
| Thomas Emleton      | 14           | 2            | 12             | 13           | 3         | 3         | 14          | 1         | 20        |
| Christopher Lishman | 13           | 1            | 4              | 13           | 0         | 5         | 18          | 1         | 10        |
| John Stamp          | 13           | 3            | 33             | 14           | 3         | 34        | 15          | 3         | 27        |
| Arthur Strother     | 28           | 3            | 0              | 24           | 1         | 19        | 33          | 3         | 30        |
| William Turner      | 16           | 1            | 12             | 13           | 0         | 26        | 17          | 1         | 18        |
| Nicholas Stamp      | 12           | 3            | 21             | 15           | 0         | 11        | 16          | 0         | 20        |

*Notes:* In addition to houses and garths, the copyhold tenants of whom there were 19 (four having the 'Four Farms') held *c.* 3 acres of meadow land in the common fields and had 8 oxgaits in the ox pasture, together with common of pasture in Shilbottle common. The remaining land in the township was held in four cottage farms (*c.* 13 acres each), the church farm, four freehold farms, and the demesne land (largely enclosed). There were 1,079 acres, 1 rood, 30 perches of unenclosed arable in Shilbottle, of which the land of the copyholders and cottars totalled 820a. 1r. 26p., or *c.* 76 per cent. The enclosed demesne arable was 132a. 3r. 6p.

sideration. It depends of course on the fact that a fixed ratio had to be maintained year after year between tilled land and fallow. Any departure from an equal division of the acres of a holding between fields involved shortage for a tenant during the year in which his largest group of holdings lay fallow.

<sup>1</sup> The information relating to size of fields and holdings is based principally on: A General Survey and Terrier of the Possessions of the Earl of Northumberland, 1612-20, by Wm. Mayson (=Mayson's Survey), Aln. Mss. A. IV, 10, and The Exemplification of Mayson's Survey being a general survey and terrier of the possessions of the Right Honble Henry Earl of Northumberland . . . 24th day of June 1622 (1622-4) (=Mayson's Exemp.) Aln. Mss. A.V. (2).

This approximately equal distribution of the acres of a holding between fields must therefore be employed as a crucial test."<sup>1</sup> The application of this test to Shilbottle suggests that over the three common fields a normal three-field system of management operated.

Another example of a similar three-field arrangement is the township of Chatton, in the Till valley, where in 1616 there were five fields, Milneside Quarter (248a. 2r. 1p.), Peppott Quarter (255a. 3r. 10p.), Henlaw Quarter (246a. 9p.), Gorbutt Quarter (85a. 13p.), and East Field (18 a. 2r. 37p.). East Field was held by one tenant, and was apparently excluded from communal management, and the common arable of Gorbutt Quarter was largely tilled by a minor class of tenant—the cottars. The size of the other three common fields, and the distribution of holdings between them, again suggests that a regular three-field system was in operation, with a small quantity of supplementary arable in the Gorbutt Quarter.<sup>2</sup> This is of particular interest, for the common land at Chatton had been re-arranged during the sixteenth century to obviate the inequalities in the size and value of the holdings of the customary tenants, and in spite of this the basis of farming had remained a three-field system.<sup>3</sup>

The occurrence of this regular type of three-field system in more southerly parts of the county is shown by the townships of Walbottle, Hartley, and Seaton Delaval. In 1613, at Walbottle, in the Tyne Valley, there were three common arable fields: East Field (162a. 3r. 7p.), Quarrell Field (187a. 3r.), and West Field (196a. 3r. 32p.), within which the holdings of the customary tenants were distributed in the ratio of 1:1:1 $\frac{1}{3}$ , i.e. a simple three-field system.<sup>4</sup> Hartley, in the south-east, was surveyed in 1563, and the survey gives the names of shotts and fields in which the holdings of William Taylor were distributed, and refers to three common fields: West Field, North Field, and South Field. Further information relating to the distribution of holdings in the fields is provided by a deposition, made in 1596, against Robert Delaval, who had obtained possession of more than two-thirds of the township, and had evicted a number of tenants. The deponent states that before 1596 there were 15 tenants and 15 ploughs in the township. "Sixty

<sup>1</sup> Gray, *op. cit.*, p. 40.

<sup>2</sup> Mayson's Survey (1616-20), Aln. Mss. A.I.V. No. 5, and Mayson's Exemp., *ibid.*, A.V., 8. The ratio of holdings between Henlaw Quarter, Gorbutt Quarter, Milneside Quarter, and Peppott Quarter was in the order of 3 $\frac{1}{2}$ :1:3:3 $\frac{1}{2}$ , e.g. William Shell had 10a. 1r. 36p. in the first, 3a. 2r. 23p. in the second, 10a. 1r. 28p. in the third, and 9a. 2r. 13p. in the fourth.

<sup>3</sup> For a detailed account, see Northumberland County History Committee, *A History of Northumberland*, 15 vols., Newcastle upon Tyne and London, 1893-1940 (=H.N.), xiv, pp. 211-13.

<sup>4</sup> Mayson's Survey, Aln. Mss. A. IV. 3, Mayson's Exemp., *ibid.*, A.V.7.

acres of arable land at least to every plough, twenty acres in each field."<sup>1</sup> Similar evidence is given for the neighbouring townships of Seaton Delaval, where, previous to the evictions in 1596, "the said seven farmholds displaced had to every one of them sixty acres of arable land, viz., twenty in each field at the least."<sup>2</sup> Gray did not think this was reliable evidence for a three-field system. He thought it possible "that the author, speaking as it were parenthetically, may have been referring to a three-course rotation of crops. This method of tillage might appear where open-field furlongs were not grouped into three compact fields . . . even in the most typical of midland townships the acres of the copyhold were not divided with this precision among the fields."<sup>3</sup> Unfortunately, in neither instance does Gray take note of the words "at the least," spoken by the deponent. They are, however, important, for in Northumberland at this period surveys of other townships and estates (such as Clarkson's Survey) frequently suffix statements of acreages with the phrase "by estimation." The exact science of the measurement of area was largely unknown at this time, and was not practised in the county until the second decade of the seventeenth century, and then only on the estates of the more important landowners. The deponent's statement was in all probability an assessment of the size of a tenant's holding in each common field, figures to the nearest ten being typical of such assessment. The idea behind this assessment was the notion of the equal division of a holding between three common fields—a feature which other examples show to have been fairly common at this time.<sup>4</sup>

This three-field system appears to have been modified in many areas of Northumberland by physiographic influence, and this modification is widely shown by the existence of a number of townships whose cultivation was based, either temporarily or more permanently, on more than three common fields. The relief map shows that a large area of the county is of an altitude of 800 feet or more, which consists for the most part of vast areas of unimproved pasture, heathland, and moorland, developed on the Fell Sandstone, the Scremerston Series, Millstone Grit, and the lavas and granites of Cheviot. Although the highest of these moorlands have never been conducive to tillage except on a very small scale, the lower slopes of these common wastes and pastures were effectively utilized, at least from the sixteenth century (and probably from a much earlier date) onwards, as valuable supplementary sources of arable land. It is interesting to note Gray's opinion in this context: "One influence only the waste had upon the tillage of the arable fields, and

<sup>1</sup> H.N., IX, p. 124.

<sup>2</sup> H.N., IX, p. 201.

<sup>3</sup> Gray, *op. cit.*, p. 221.

<sup>4</sup> One must also bear in mind the fact that the existence of a three-course rotation of such a precise nature in any part of England is now widely disputed.

this arose from the relative size of the two areas. If, in any township, the waste was extensive in comparison with the open-field arable, utilization of the latter for pasturage might be a matter of little moment, the former sufficing for cattle and sheep. In consequence, deviation from a strict two- or three-field system in the cultivation of the arable and in the rotation of crops became relatively easy."<sup>1</sup> Although the use of the common fields as shack land was widespread and therefore more important than Gray imagined, the large quantities of common waste either within or near to a township strongly influenced the nature of field systems, and this influence took two principal forms.<sup>2</sup> First, where the common arable fields were adjacent to unimproved common waste, land was frequently ploughed from it and became an integral part of one or more of the fields, thus creating, in some instances, inequality in the size of the fields. Secondly, the alternative was to plough out one or more additional fields from the unimproved common which could be cultivated for a number of years and then be allowed to revert to its original form, or, in some cases, these became permanent features.

The process of supplementing the area of the common fields is well illustrated in the case of Acklington where, in 1616, there were three common fields: South Field (195a. 1r.), East Field (206a. 3r.), and North Field (291a.).<sup>3</sup> In each of the larger fields, the surveyor refers to land newly ploughed from the common, for example, to Deane's Flatt, in East Field, which had an area of 23 acres: "this furshott last goienge before was common pasture and now lately ploughed upp, and devided among the tenants themselves, with their appointment, without privity of the officer." Part of the 'Moore Landes' (whose total area was 98 acres) which virtually constituted a separate field, though reckoned as being part of the North Field, had recently been converted from the common: "some of this field called the Moore Landes, being all lately taken out of the common, and converted to arable." The selions in this field were allocated in strict rotation, Henry Johnson, for example, receiving the first, twenty-first, and forty-first allotments. The smallest of the three fields—South Field—did not contain land which had been recently converted to tillage, and in fact the reverse process operated in this instance, for the 'Brocks haining', had been "formerly arable, but now laid to pasture because of the barrenness:" this had an area

<sup>1</sup> Gray, *op. cit.*, p. 47.

<sup>2</sup> Even the townships of the coastal plain had high percentages of waste or 'common': in the early seventeenth century, the figure for Shilbottle was 50 per cent, Alnwick 40, Rennington 59, Denwick 42, South Charlton 65, and the figure was much higher in the west, and to the south of the Tyne.

<sup>3</sup> Mayson's Survey, Aln. Mss. A IV. 6; Mayson's Exemp., Aln. Mss. A.V. 6.

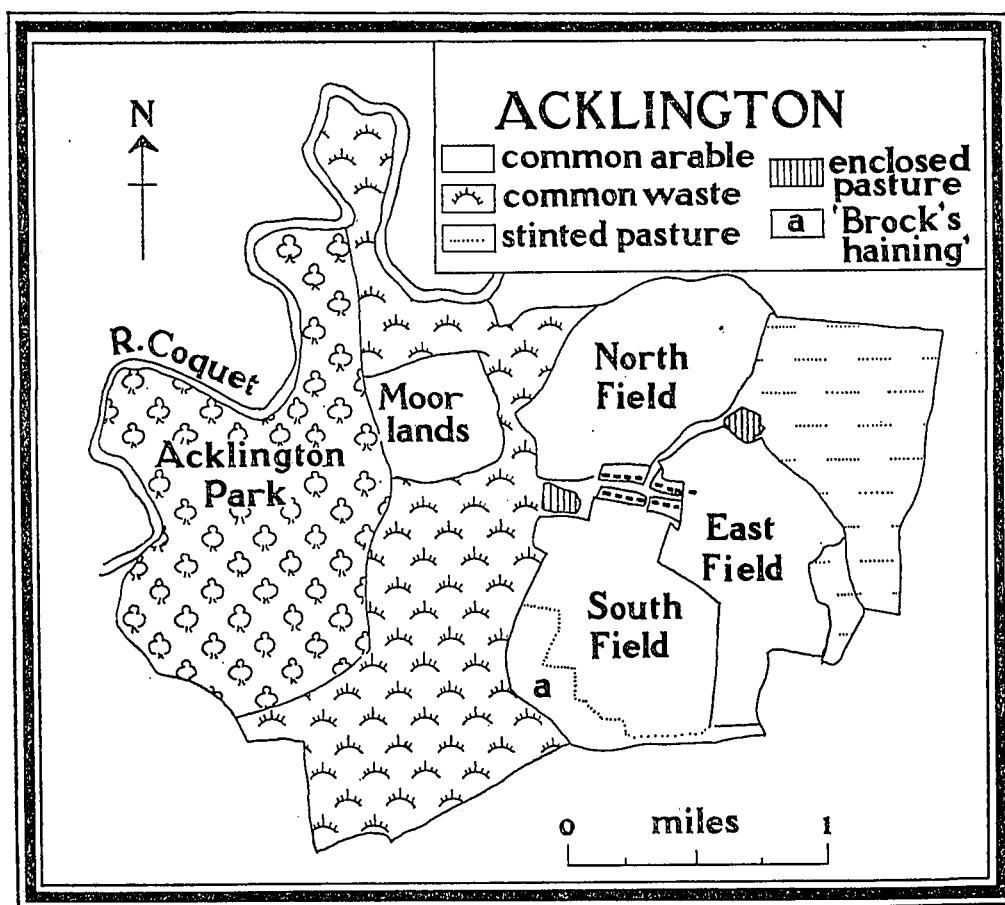


FIG. III  
ACKLINGTON

Based on Norton's map of c. 1624 (Aln. Mss. OXVI, 1 (d)). The part of Acklington Park shown on the map was enclosed demesne well-timbered pasture land, held by Lawrence Rishforth.

of 34 acres. There are other examples of this process in other parts of the township. Another interesting feature of the Acklington fields is the occurrence of the term 'cavill' in shott names—as in 'Long Cavills', 'West Cavills', and 'Eastland Cavills'—suggesting that these had originally been allocated by the drawing of lots, for a 'cable' or 'cavel' or 'Kyeval' was "a stripe or share of land apportioned by lot."<sup>1</sup> Two important conclusions can be drawn from this example: first, that a township such as Acklington which had a reasonably large area of improvable 'common' or waste could supplement the arable area by periodically converting parts of this land to arable cultivation, and still maintain land fertility and also a reasonable balance between

<sup>1</sup> R. O. Heslop, *Northumberland Words. A Glossary*, London, 1892.

the areas of the three common fields (and therefore of the distribution of holdings) by allowing part of the common fields to revert to its original state.<sup>1</sup> Secondly, conversion to arable could vary in scale, from a few acres added to a shott, to the creation of what was almost a new field. Subsequent examples show that both types of modification were frequent. The temptation arises, however, at this stage, to argue that this modification is no more than an infield-outfield system, and Gray has suggested this in the case of the township of Cowpen, which has many features similar to those of Acklington. In the case of Acklington, the evidence is very much in favour of a three-field (or modified three-field) system, as shown by the existence of three common fields, not greatly dissimilar in size, and the disposition of the holdings of the customary tenants. These facts, together with the absence both of the terms 'infield' and 'outfield' and of evidence of a regular rotational system of land improvement from the waste, tend to refute the idea of an infield-outfield system. For the township of Cowpen, there is a valuable account of the improvement of waste in similar fashion to that described for Acklington. This account, of the queen's demesne lands at Cowpen in 1599 states that "att the layenge forth of any decayed or wasted corne feilde, and takinge in any new feildes of the common wastes in lieue thereof, everie tenaunte was and is to have so much land in everie new feilde as everie of them layde forth in everie wasted or decayed corne feilde." The deponent also refers to the occupation "of all their arable lands by partinge by lott," and states that such conversion and reversion of arable was by general consent.<sup>2</sup> Gray's suggestion that "this description might well apply to the Scottish outfield" is only partly true, for it might equally apply to a process similar to that described for Acklington, and there is no reference to an infield or an outfield.<sup>3</sup> Furthermore, when articles were drawn up on November 15th, 1619, for a division in severalty of the township, reference was made to the existence of two open fields, North Field(s) and Mill Field, in which the holdings of at least two tenants were divided in the ratio of 1:2.<sup>4</sup> Although the re-allocation of land was practised at Cowpen, this 'run-rig' is not in itself indicative of infield-outfield, and seems to have been experienced in townships (such as Acklington) where this system did not operate.

Further examples of the expansion of the area of tillage land at this time are furnished by the townships of Guysance and Rennington. Clarkson, in

<sup>1</sup> William Clay, a customary tenant, had for example 12a. 3r. 23p. in the South Field; 12a. 2r. 37p. in the East Field; and 15a. 1r. 31p. in the North Field.

<sup>2</sup> P.R.O. Northumberland Exchequer Com. and Dep., 41 Eliz., Easter 19.

<sup>3</sup> Gray, *op. cit.*, p. 223.

<sup>4</sup> J. C. Hodgson, *A History of Northumberland*, 1820-58, II, part 2, p. 272.

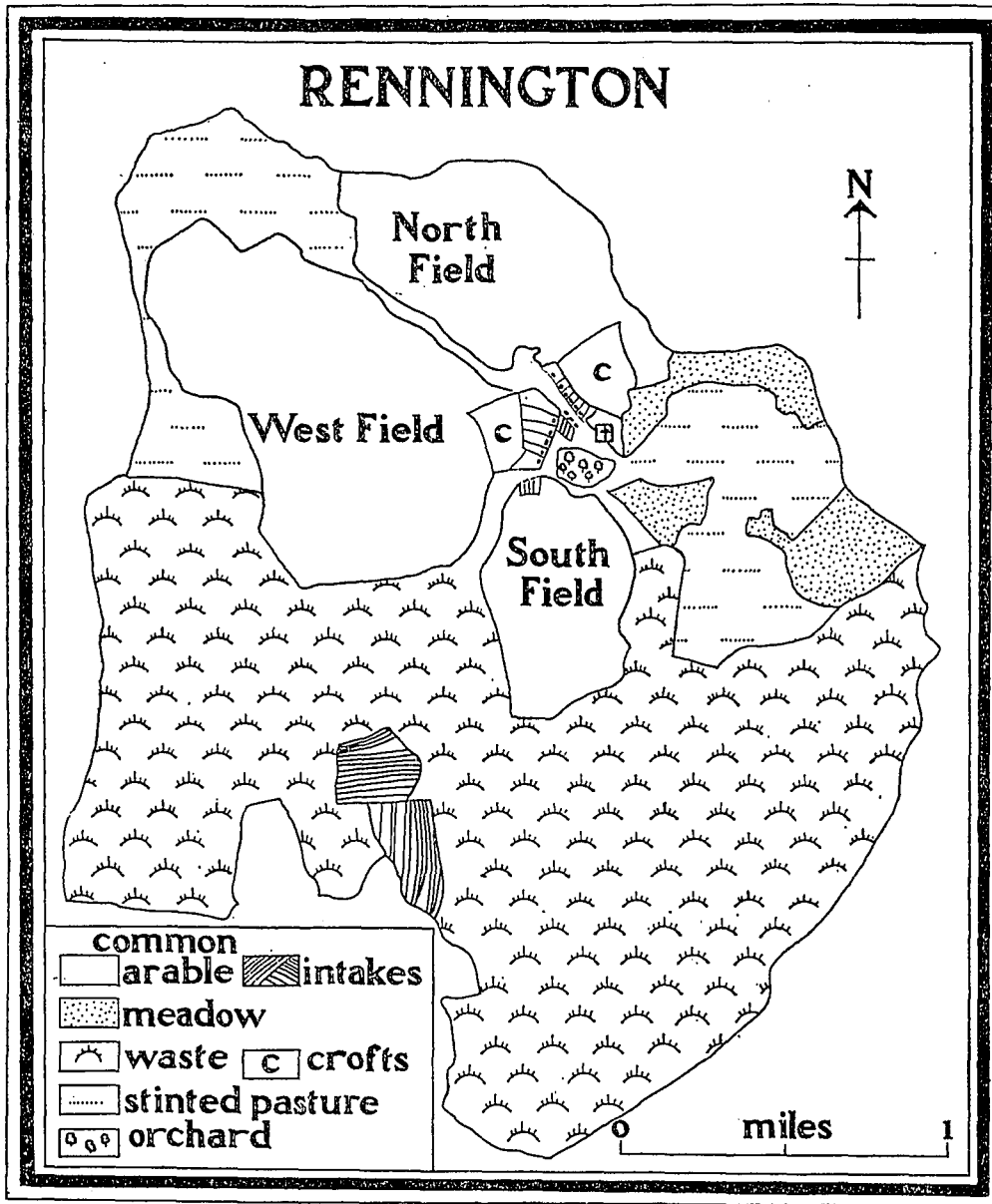


FIG. IV  
RENNINGTON

Based on Norton's map of c. 1624 (Aln. Mss. O. VIII 1 (a)).

his survey, states that in Guysance certain tenants have "the xvi<sup>th</sup> rigge in every new rifte which is to be made arable and which before was lee or pasture ground."<sup>1</sup> In 1619, there were three fields at Guysance: East Field

<sup>1</sup> Clarkson, Aln. Mss. A.I. 11.

(113a. 30p.), North Field (121a. 1r. 5p.), and West Field (77a. 22p.).<sup>1</sup> This arrangement may well have been produced by a disproportionate increase in the size of the East and North Fields. Rennington, in 1618, had three fields of unequal size: South Field (892a. 36p.), West Field (282a. 24r. 11p.), and North Field (145a. 3r.),<sup>2</sup> located on soils derived from boulder clay and river alluvium, which Clarkson described as good corn soil "if the same were used with good husbandry."<sup>3</sup> These fields lay to the south, west, and north of the village (see Fig. IV) at a much lower elevation than the common or moor which lay to the south. In his attempt to discover the field system which operated at Rennington, Gray uses a terrier of the holding of Trestram Philipson, printed in the *History of Northumberland*.<sup>4</sup> On the basis of this terrier, he concludes that "the acres of a Northumberland holding, whether apportioned to two, three, or four fields, were not disposed as they would have been in a normal township of the midland area."<sup>5</sup> This conclusion is unfortunate, for it is partly based on a terrier of a holding which was definitely not typical of tenant holdings of this particular township. Table B shows Philipson's holding compared with the others, which bear much

TABLE B  
DISTRIBUTION OF HOLDINGS IN RENNINGTON COMMON FIELDS

| Size of Field      | SOUTH FIELD |    |    | WEST FIELD |    |    | NORTH FIELD |    |    |
|--------------------|-------------|----|----|------------|----|----|-------------|----|----|
|                    | A.          | R. | P. | A.         | R. | P. | A.          | R. | P. |
|                    | 89          | 0  | 36 | 248        | 2  | 11 | 145         | 3  | 0  |
| Copyholders        |             |    |    |            |    |    |             |    |    |
| Trestram Philipson | 10          | 0  | 27 | 21         | 0  | 5  | 8           | 3  | 11 |
| William Watson     | 8           | 3  | 7  | 22         | 2  | 7  | 10          | 3  | 33 |
| Thomas Erneton     | 8           | 0  | 29 | 21         | 0  | 35 | 11          | 0  | 17 |
| John Richardson    | 5           | 3  | 32 | 13         | 1  | 13 | 12          | 2  | 16 |
| William Blith Jun. | 8           | 1  | 17 | 19         | 2  | 13 | 13          | 1  | 14 |
| Symon Richardson   | 6           | 3  | 6  | 11         | 1  | 39 | 13          | 0  | 0  |
| Robert Wilson      | 5           | 0  | 22 | 21         | 3  | 30 | 13          | 1  | 25 |
| Michael Wilson     | 9           | 2  | 12 | 19         | 1  | 2  | 11          | 0  | 27 |
| Bartram Wilson     | 7           | 1  | 22 | 20         | 2  | 21 | 14          | 0  | 16 |
| William Blith Sen. | 2           | 1  | 23 | 21         | 3  | 11 | 12          | 3  | 11 |

Notes: The copyhold tenants (holders of 'tenement farms') of whom there were ten at this period, also held land in Rennington orchard and c. 2 acres each on Barelaw field (a small improvement of some 28 acres), meadow in the meadow 'dayles', and 8 'gaits' (stints) in the Oxpasture. The remaining land in the township was held by 7 cottars and 1 freeholder (whose holding was approximately equal in size with those of the tenants listed above). There were 498 acres, 3 roods, 37 perches of unenclosed arable in the township, held by the copyholders, the freehold tenant, and the cottars. There was no demesne arable.

<sup>1</sup> Mayson's Survey, Aln. Mss. A.IV. 10; Mayson's Exemp., *ibid.*, A.V. 2.

<sup>2</sup> Mayson's Survey, Aln. Mss. A.IV. 8; Mayson's Exemp., *ibid.*, A.V. 4.

<sup>3</sup> Clarkson, Aln. Mss. A. I. 1. c.

<sup>4</sup> H.N., I, p. 234.

<sup>5</sup> Gray, *op. cit.*, p. 212.

closer relation to the size of the fields. Assuming that supplementation of the tillage area was carried out (a small example of this is in fact shown to the south of the village), one would have to evoke the influence of topography to explain the small size of the South Field, particularly the steep slope of the land to the south of the South Field. In this instance, however, there are a number of alternative explanations which would seem to have equal validity: there may have been, originally, a two-field system, to which the South Field had been added at a later date; or part of the South Field may have been allowed to revert to moor.

An alternative modification of the regular three-field system, seen in Northumberland—that whereby additional common fields were created—is illustrated by the townships of Denwick, Lesbury, Bilton, Birling, and South Charlton.

The 1618 survey of Denwick<sup>1</sup> states that “there is in Denwick Fower

TABLE C  
DISTRIBUTION OF HOLDINGS IN DENWICK COMMON FIELDS

| Size of Field      | SOUTH FIELD |    |    | WEST FIELD |    |    | EAST FIELD |    |    | NORTH FIELD |    |    |
|--------------------|-------------|----|----|------------|----|----|------------|----|----|-------------|----|----|
|                    | A.          | R. | P. | A.         | R. | P. | A.         | R. | P. | A.          | R. | P. |
| Arable*            | 209         | 2  | 34 | 67         | 0  | 25 | 97         | 2  | 25 | 142         | 2  | 38 |
|                    | 142         | 2  | 23 | 65         | 1  | 32 | 97         | 2  | 25 | 136         | 2  | 7  |
| Copyholders        |             |    |    |            |    |    |            |    |    |             |    |    |
| George Gray        | 17          | 0  | 36 | 6          | 0  | 35 | 12         | 3  | 15 | 17          | 3  | 15 |
| Robert Clark       | 15          | 3  | 35 | 5          | 2  | 28 | 9          | 2  | 32 | 13          | 1  | 12 |
| Robert Gibson Sen. | 9           | 3  | 14 | 4          | 2  | 12 | 6          | 1  | 3  | 9           | 3  | 36 |
| John Harper        | 9           | 3  | 37 | 4          | 3  | 34 | 7          | 0  | 30 | 9           | 3  | 10 |
| Thomas Shepherd    | 11          | 1  | 17 | 4          | 2  | 38 | 7          | 0  | 35 | 10          | 3  | 36 |
| William Mason      | 9           | 2  | 11 | 4          | 1  | 11 | 8          | 0  | 27 | 8           | 3  | 0  |
| William Robinson   | 9           | 1  | 4  | 4          | 0  | 8  | 7          | 2  | 3  | 9           | 0  | 28 |
| Thomas Read        | 12          | 1  | 27 | 3          | 2  | 23 | 5          | 2  | 33 | 9           | 2  | 22 |
| Thomas Clark       | 9           | 3  | 39 | 3          | 3  | 30 | 7          | 1  | 39 | 10          | 0  | 30 |
| Ralph Thew         | 9           | 2  | 22 | 3          | 2  | 12 | 7          | 1  | 5  | 10          | 3  | 22 |
| Robert Thew        | 11          | 0  | 26 | 4          | 0  | 14 | 7          | 1  | 17 | 9           | 3  | 14 |
| William Bowden     | 8           | 0  | 22 | 2          | 2  | 35 | 5          | 0  | 5  | 6           | 3  | 10 |
| Robert Gibson Jun. | 6           | 3  | 3  | 9          | 0  | 6  | 4          | 2  | 11 | 6           | 3  | 3  |

Notes: There were 13 copyhold tenants at Denwick at this time, who also held land in Gynsen meadow, Denwick rifts, an average of 18 gaits in the ox pastures, and common of pasture on Denwick common. There was very little freehold, demesne, or cottar land, and the greater part of the common arable was allocated as shown above.

\* Most common fields of the lowland townships contained varying quantities of meadow land which, in many cases, is not distinguished in the surveys. Denwick is important in this respect, for there was a large area of meadow in the South Field (which abuts on an alluvial meander of the Aln) which is distinguished from the arable land in the terrier.

<sup>1</sup> Mayson's Survey, Aln. Mss. A. IV.8., and Mayson's Exemp., *ibid.*, A.V. 1.

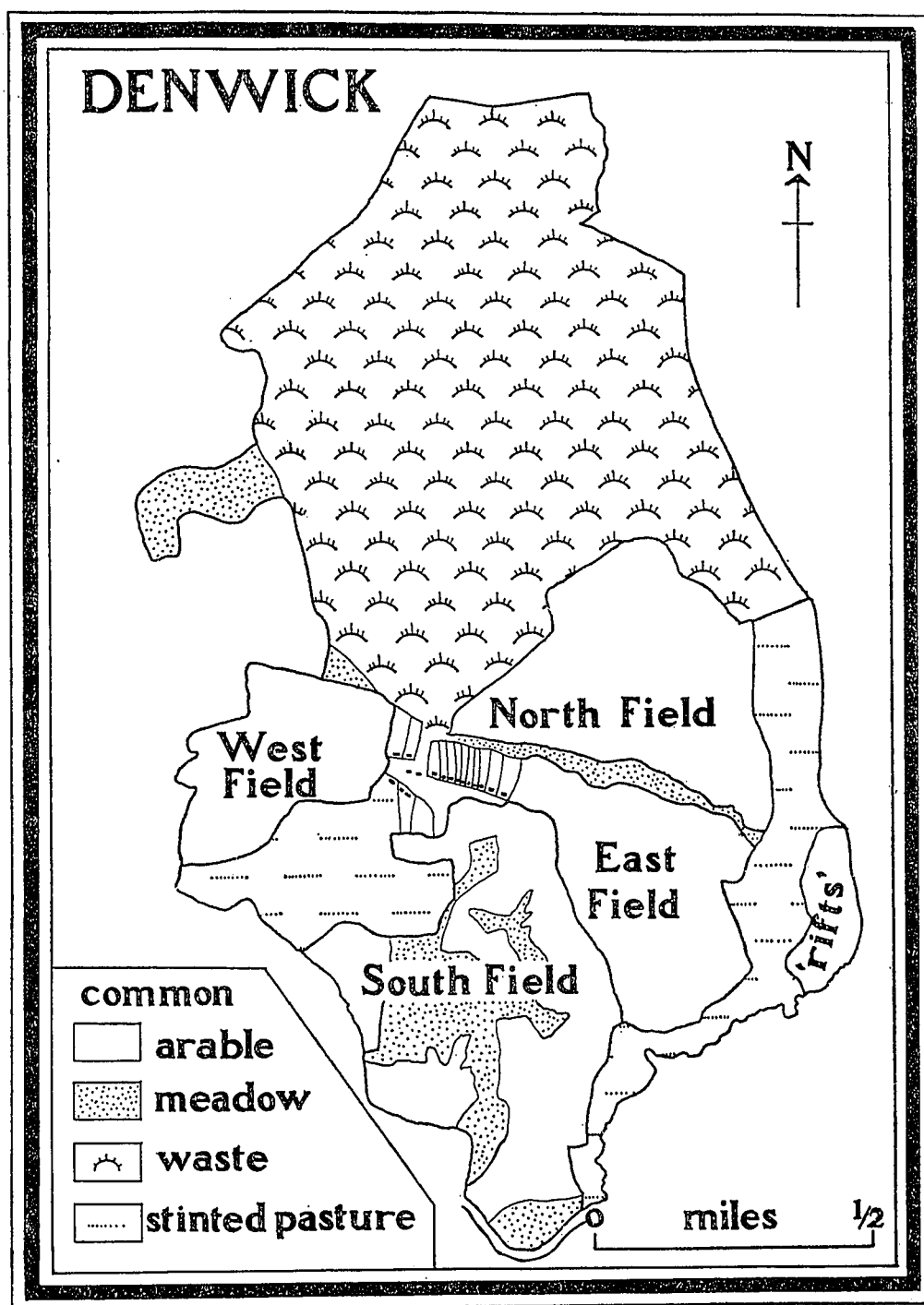


FIG. V

DENWICK

Based on Norton's map of 1624 (Aln. Mss. O. III 1 (a)). The 'rifts' were lands converted to arable, and shared equally between tenants.

severall fields named the South Field, West Field, East Field, and North Field, wherein every whole tenement is to have twenty-eight beast stints yearly, and every half farm eighteen beast stints viz. the summer half yeare in the oute pasture and the winter half yeare in the corn fieldes after the corn and hay be carried away. And it is not lawful for any of the said tenants to enclose any common fields or meadows without the licence of the lord and consent of the tenant." The accompanying map and terrier reveal that the sizes of these fields were: South Field, 209a. 24r. 34p.; West Field, 67a. 25p.; East Field, 97a. 25p.; North Field, 142a. 3r. 8p. The holdings of the customary tenants were distributed in proportion to the size of each field (Table C). The small size and peripheral location of the West Field suggests that it is a later addition to an older three-field system, possibly acting as a supplement to the East Field. Although there is no documentary evidence to support this hypothesis, there is evidence which reveals the temporary nature of one of the fields in a neighbouring township, for at Lesbury in 1614 there were four common fields: West Field (110a. 1r. 25p.), North East Field (395a. 23p.), East Field (245a. 2r. 24p.), and South Field (287a. 1r. 37p.).<sup>1</sup> The distribution of holdings, which is again proportionate to the size of the fields, suggests that the North East Field, South Field, and East Field, were the main components of the tillage land, with the West Field as a supplementary (and possibly a temporary) addition, perhaps to supplement the arable acreage when the largest field—North East Field (or part of it)—lay fallow. This idea is confirmed by the fact that the West Field does not appear on a map drawn ten years later. The large size of North East Field obviously bears some relation to its proximity to the common waste.

The township of Birling, located between the Coquet and the sea, in 1616 had four common fields: North Field (120a. 1r. 1p.), East Field (133a.), West Field (144a. 1r.), and Kirk Field (59a.).<sup>2</sup> This would seem to be a three-field system with a later addition. A similar situation obtained at South Charlton, where there were four fields: North Field (142a. 2r. 19p.), East Field (113a. 3r. 30p.), Middle Field (58a.), and West Field (147a. 36p.).<sup>3</sup> Apart from the Middle Field, the symmetry of the other three would lend itself to some kind of three-field system: "by continuing the arable of the East Field and Middle Field we should get a total greater by only 30 acres than the area of each of the other fields, a not impossible three-field arrangement."<sup>4</sup>

<sup>1</sup> Mayson's Survey, Aln. Mss. A. IV. 4, and Mayson's Exemp., *ibid.*, A.V. 3.

<sup>2</sup> Mayson's Survey, Aln. Mss. A. IV. 7, and Mayson's Exemp., *ibid.*, A.V. 6.

<sup>3</sup> Mayson's Survey, Aln. Mss. A. IV. 11, and Mayson's Exemp., *ibid.*, A.V. 4.

<sup>4</sup> Gray, *op. cit.*, p. 212.

The examples quoted above, and those shown on Fig. I, confirm the thesis, which has hitherto been largely a suspicion, that a field system akin to the three-field system of midland England had a more northerly extension than was originally suggested. This does not imply, of course, the non-existence of another type of field system: in fact there is evidence which suggests that in the extreme northern, western, and southern parts of the county a type of infield-outfield system existed in the past.

#### INFIELD AND OUTFIELD

The documentary evidence for the existence of a field system closely approximating to the infield-outfield (as found in Scotland, for example) is not substantial. Smailes, however, in his book on North England, stated that "over most of North England the system of cultivation practised was more closely related to the Scottish run-rig than to the open-field system of the English lowland . . . as such it was characterized by a fundamental distinction between the infield and the outfield, and by the annual re-distribution of strips among the cultivators. The infield, which received all the manure available, was cultivated continuously until soil exhaustion necessitated fallowing."<sup>1</sup> Uhlig is similarly convinced of the existence of "Langstreifen-infields" in the north-east.<sup>2</sup> In the former case, the evidence cited for Northumberland is a single enclosure award—for Gunnerton,<sup>3</sup> which makes reference to 'ingrounds' and 'outgrounds', which terms, as shown below, are not necessarily synonymous with 'infield' and 'outfield'. In Uhlig's work many of the conclusions are inferred from present-day survivals, such as 'fossilized' ridges and furrows and parish boundaries, and are largely unsubstantiated by documentary evidence.

The suspicion of dissimilarity of the terms 'infield' and 'outfield' and 'ingrounds' (or 'infields') and 'outgrounds' in their Northumberland context stems initially from instances where these latter terms are used to describe land in a township which had a three or four-field system. In the township of Rennington, for example, the tenants of the south side<sup>4</sup> in 1707 petitioned

<sup>1</sup> A. Smailes, *North England*, Edinburgh, 1960, p. 93.

<sup>2</sup> H. Uhlig, 'Old Hamlets and Infield and Outfield Systems in Western and Central Europe', *loc. cit.*, p. 303.

<sup>3</sup> Gunnerton Enclosure Act 1740; Award 1741: Northumberland County Record Office (=N.C.R.O.), No. 24.

<sup>4</sup> The division of Northumberland townships into two halves is an event of frequent occurrence in the sixteenth and seventeenth centuries: it seems to have been due to the desire to overcome the obvious deficiencies of the open-field system without resorting to total enclosure; this would have weakened the defence of the village at a time when border warfare was still prevalent.

for enclosure, and they "most humbly crave of their Graces the Duke and Duchess of Somerset that the Infields of the South Side may be equally divided and parted."<sup>1</sup> At Acklington, in 1686, the tenants of the south side agreed to the division of lands in the 'ingrounds' and the 'outpasture'.<sup>2</sup> There were also 'ingrounds' and 'outgrounds' at Seaton Delaval<sup>3</sup> and 'infields' at Inghoe (which had four common fields—three large and one small).<sup>4</sup> It seems, therefore, difficult to equate infield and outfield, in their normally accepted sense, with the equivalent Northumberland terms, for 'ingrounds', 'infields', and 'outgrounds' appear to be general terms used to distinguish between land near the settlements—normally arable, meadow, and pasture, subject to intensive use—in contrast to the moors and wastes, many of which were unappropriated, and which were generally used as grazing grounds (the more distant ones in summer only) and as additional sources of arable or improved pasture.

Paradoxically, the areas of Northumberland in which one suspects a field system akin to infield-outfield to have been utilized are those in which 'infield' and 'outfield', or similar terms, seem to have been used rather infrequently. From a physiographic point of view, one would expect that such a system would have prevailed in part of the west and south of the county, where the land consists largely of vast areas of infertile upland wastes, relieved only by the alluvial stretches of the valleys of such rivers as the North Tyne and Rede. The 1604 survey of the 'Debateable lands' of the border partly substantiates this inference, for it indicates the existence of a large number of relatively small units of cultivation, in which the quantity of arable land was small in comparison to that of meadow, pasture, and moor.<sup>5</sup> (See Table D.) These small units were farmed by branches of the notorious border families—the Charltons, Riddleys, Halls, and others. The surveyor states that "they till, reap and mow each their known ground particularly, and after the first crop they eat all in common without stint or number, except in some places where the tenement lyeth in several." The arable land was located on the lower slopes of the valley sides and in the valley floors. This system of cultivation appears to be similar to the small-scale infield-outfield formerly practised in part of Scotland, and is also similar to that which existed in Cumberland, both in relation to physiographic conditions and to the emphasis on pastoralism, raiding, and theft.<sup>6</sup> The emphasis on pastoral-

<sup>1</sup> Aln. Mss. J. III. 7(a).

<sup>2</sup> Aln. Mss. J. IX. 6.

<sup>3</sup> H.N., IX, p. 202.

<sup>4</sup> Aln. Mss. J. IV 6(h), 1697.

<sup>5</sup> R. P. Sanderson (ed.), *Survey of the Debateable and Border Lands adjoining the Realm of Scotland and belonging to the Crown of England. 1604.*

<sup>6</sup> G. G. Elliot, 'The system of cultivation and evidence of enclosure in the Cumberland open

TABLE D  
FAMILY UNITS AND LAND USE IN ELSDON PARISH, 1604

| <i>Place</i>    | <i>Tenants</i> | <i>Meadow<br/>Acres</i> | <i>Arable<br/>Acres</i> | <i>Pasture<br/>Acres</i> |
|-----------------|----------------|-------------------------|-------------------------|--------------------------|
| Troughend       | J. Reade       | 120                     | 240                     | 1,306                    |
|                 | T. Reade       | 10                      | 12                      | 88                       |
|                 | J. Hall        | 4                       | 8                       | 48                       |
| Raylees<br>Burn | R. Hall        | 12                      | 64                      | 80                       |
|                 | O. Hall        | 4                       | 24                      | 30                       |
|                 | W. Hall        | 4                       | 24                      | 30                       |
| Ravenscleugh    | J. Hall        | 4                       | 24                      | 30                       |
|                 | W. Hall        | 4                       | 24                      | 30                       |
| Stobbs          | N. Hedley      | 8                       | 6                       | 102                      |
|                 | T. Hedley      | 3                       | 4                       |                          |
|                 | A. Hedley      | 3                       | 4                       |                          |
|                 | P. Hedley      | 3                       | 4                       |                          |
|                 | J. Hedley      | 1                       | 2                       |                          |
|                 | E. Hedley      | 2                       | 4                       |                          |

*Note:* Elsdon parish was an area drained largely by the R. Rede and its numerous small tributary streams. Troughend is located on the right bank of the Rede, near Otterburn; Raylees burn and Ravenscleugh to the south of Elsdon on the Raylees burn, a western tributary stream of the Rede; and Stobbs is located further upstream than the first two, on the left bank of the Rede near Rochester.

ism is also reflected in the seasonal movement of men and animals to the higher pastures, or 'shielings', in summer: "Here every year round about in the wastes as they term them, as also in Gillsland, you may see, as it were, the ancient Nomads, a martial kind of men, who from the month of April lie out scattering and summering (as they term it) with their cattle in little cottages here and there, which they call sheals or shealings."<sup>1</sup> The 1604 Border Survey describes how "for their sheildinge grounds they doe begyn and end by agreement among themselves accordinge as the season falleth out."

A complicating factor in the analysis of this type of cultivation is the existence of the gavelkind system of inheritance. In 1580, a certificate of the musters of the middle marches, referring to North and South Tynedale, states that the inhabitants "have ever had a custom, if a man have issue ten sons, eight, six, five, or four, and sits on a holding of but 6s. rent, every son

fields in the sixteenth century', *Actes du Colloque International: Géographie et Histoire Agraires*, Nancy, 1957 (in *Annales de l'Est*, 1959, p. 118). For a detailed account of border conditions at this time see D. L. W. Tough, *The Last Years of a Frontier*, Oxford, 1927.

<sup>1</sup> Camden, *Britannia*, ed. E. Gibson, 1697, p. 816.

shall have a piece of his father's holding."<sup>1</sup> Because of population pressure on the better land as a result of this system of inheritance,<sup>2</sup> some of the shieling areas were developed as places of intensive cultivation though it is difficult to discover the precise nature of the system of cultivation in these areas. There is also evidence for a similar type of small-scale cultivation in the land to the south of the Tyne,<sup>3</sup> though the evidence for communal cultivation is here less clear. The main difficulty of reconstructing the field system of these more remote parts of Northumberland in this period is the paucity of detailed documentary information, which is largely a reflection of the unsettled conditions which prevailed in those areas until the end of the seventeenth century.

The evidence afforded by Enclosure Acts and Awards sheds little light on the general picture of Northumberland field systems, for most of the open fields had been enclosed in the seventeenth and early eighteenth centuries, and the acts and awards deal mainly with moors and wastes.<sup>4</sup> Of those which relate to the enclosure of common and open arable land, a number refer only to 'common fields', and the accompanying plans show that these were frequently small remaining pieces of common field lying among the 'ancient enclosures'. Such were the 'rig and dale lands' at Haltwhistle, enclosed in 1849, which were not contiguous, nor were they assigned to any field or shott,<sup>5</sup> as also were the common field remnants at Thorngraston, enclosed in 1797.<sup>6</sup> At Stannersburn, a small hamlet in North Tynedale, the 'common fields', which totalled 71½ acres, were enclosed in 1816,<sup>7</sup> though there is no reference here to ancient enclosure, and it is possible that the system here was akin to that described for North Tynedale in the seventeenth century. At Catton, three common fields were enclosed in 1880: East Field (9a. 1r. 16p.), West Field (44a. 1r. 9p.), and the Prye (15a. 3r. 12p.), but the award gives little indication of the extent of previous enclosure.<sup>8</sup> Catton may well have originally experienced an infield-outfield system, with the West Field as the infield, but there is no evidence to confirm this.

Of the remaining acts and awards, only those for Alnham, Gunnerton, Norham, Tweedmouth, and Holy Island indicate the possible existence of infield-outfield. A map of Alnham drawn in 1775<sup>9</sup> —the year before the en-

<sup>1</sup> J. Bain (ed.), *The Border Papers: calendar of letters and papers relating to the affairs of the Borders of England and Scotland preserved in Her Majesty's Public Record Office*, 1894-6, I, para. 50.

<sup>2</sup> Reference to population pressure is made in Bowes and Elleker's Survey of the Border, printed in J. Hodgson, *op. cit.*, Part III.

<sup>3</sup> 1608 Survey of the Regality of Hexham printed in H.N. III.

<sup>4</sup> See W. Tate, *op. cit.*

<sup>5</sup> N.C.R.O. 33.

<sup>6</sup> N.C.R.O. 50.

<sup>7</sup> N.C.R.O. 55.

<sup>8</sup> N.C.R.O. 31.

<sup>9</sup> Aln. Mss. O. XI. 2.

closure of the township's 'infields', shows that there was not one infield, but several: adjacent to the village were the North Field, East Field, Middle Field, and South Field, and the Ox Pasture, while to the north of the North Field lay Hartclay Field, Lee Field, Cobden Haugh, and several smaller fields. A contemporary map of larger scale<sup>1</sup> shows that the North Field did not consist solely of open arable and meadow, but was a heterogeneous mixture of 'tillage, meadow, common pasture, and closes'. The modern topographic map shows that some of these 'infields' were at a height of over 1,000 feet, and that part of the North Field had an extremely steep gradient. The smaller 'infields' were in fact pasture land of slightly better quality than the surrounding wastes. One can see therefore that this is not infield-outfield as normally experienced, nor is it the three- or four-field system seen in other parts of Northumberland at an earlier date. The 'fields', particularly the East, Middle, South, and North Fields, seem to have been topographic units, rather than units of arable cultivation. It is interesting to take note, in this instance, of John Grey's description of Northumberland agriculture in this period: "but still great tracts of land were not brought regularly under the plough, most farms being divided into what was called the infield and outfield lands; the former being subjected to a severe course of cropping, with very inadequate cultivation; the latter left to its native produce as a pasture for sheep and young cattle, or if choice portions of it were occasionally broken up, it was to rob it of its fertility by the production of a succession of corn crops, and then to leave it to recruit itself by several years of pasture."<sup>2</sup> It would seem, therefore, that the terms infield and outfield (ingrounds and outgrounds) were used in these barren areas to denote contrasts in intensity of land use, but not necessarily on an infield-outfield system (in the normally accepted sense). The award for Gunnerton, in North Tynedale, cited by Smailes, throws little light on the problem, for it refers to 'ingrounds' and 'outgrounds'. The ingrounds ("which containeth by estimation 1,300 acres and upwards") partly consisted of land which lay "dispersed in several small parcels (which) hath by a long and constant usage in tillage been greatly impoverished and cannot by reason of the distance and inconvenient situation of the several lands and grounds in the said common fields, be properly cultivated and manured, but at an insupportable expense." The award refers to an East Field and a Low Field, and to a number of "intacks," but further interpretation is difficult in the absence of a plan. The affinity of the above examples, if they do in fact represent late variations of an infield-outfield

<sup>1</sup> Aln. Mss. O. XI. 2.

<sup>2</sup> John Grey, 'A View of the past and present state of Agriculture in Northumberland', *Journal Royal Agricultural Society*, II, 1841, p. 153.

system, may well be with the south-west of England, that is with similar characteristics to those described in parts of Devon,<sup>1</sup> and not with Scotland. The area in which one would expect affinity with Scots agricultural practice is the northern part of the county, adjacent to Scotland. Marshall, writing of this district, says: "But Tweedside—as the more immediate banks of the river are emphatically named—being in natural character, and rural management the same on either bank, and partaking much more of Scottish than of English husbandry, I forbear to separate them."<sup>2</sup> This similarity is borne out by the reference of the respective enclosure acts to 'infields' at Norham,<sup>3</sup> Tweedmouth,<sup>4</sup> and Holy Island,<sup>5</sup> though here again 'infield' referred to arable, meadow, and pasture land. If one interprets the word 'infield' (in the Northumbrian sense) as including the functions of both infield and outfield in their Scottish context, then one can reasonably acknowledge the existence of a field system in the north, west, and south of Northumberland which bears some similarity to the Scottish infield-outfield system. Much more investigation is needed, however, before the precise nature of such a system can be determined.

From the evidence available for Northumberland from the sixteenth century onwards, it would appear, therefore, that the main contrast in field systems was between the three- or four-field systems, found in the lower areas of the coastal plain and the river valleys, and a system somewhat similar to the infield-outfield system of parts of Scotland and England. It is interesting to note that the evidence for a three- or four-field system is strongest in those areas where the settlements for the most part are nucleated villages, which may well be of Anglian origin, though it would be dangerous to attempt to read ethnic causes into variations in infield-systems at such a late period. The evidence available for the nature of crop rotations and fallowing practice within these systems is meagre, and although the relation between cropping systems is not a fixed one and (as has been frequently pointed out) the two can operate quite independently, it is interesting to note a further similarity between the field systems of lowland Northumberland and those of 'Midland' England: namely, that whole-year fallows seem to have been common.<sup>6</sup>

<sup>1</sup> H. P. R. Finberg, 'The Open Field in Devon', in W. G. Hoskins and H. P. R. Finberg, *Devonshire Studies*, 1952, p. 285.

<sup>2</sup> Wm. Marshall, *Review and Abstracts of the County Reports to the Board of Agriculture*, York, 1808, I, p. 2.

<sup>3</sup> Collections of Local Acts, Lit. and Phil. Soc. of Newcastle upon Tyne, XII, No. 10.

<sup>4</sup> *Loc. cit.*, XIV, No. 10. <sup>5</sup> *Loc. cit.*, XIII, No. 16.

<sup>6</sup> For example, at Hazon and Hartlaw, in the reign of James I, one-third part of "Thirckeld's lands" lay fallow every third year: H.N., v, p. 465 fn. Other references to fallowing are made for: N. Guysance (1480), H.N. v, p. 486; Shilbottle (1566)—Aln. Mss. A.I.2; Elswick (1580)—

Gray, Tate, and Uhlig have suggested that if a Midland type of field system existed in Northumberland, then it did so as a late development of an infield-outfield system. Only a detailed examination of Northumberland field systems, in the period before the sixteenth century, will confirm or contradict these assertions. The author's present opinion is, however, that the two systems, even in the Border area, had quite different roots, and he would certainly contest the assertion that the three-field system in Northumberland was a product of Anglo-Norman manorialism,<sup>1</sup> for this was never a very influential factor in an area of constant border fighting, where military rather than economic subservience was a dominating characteristic.<sup>2</sup>

#### A NOTE ON THE MAPS AND SURVEYS OF NORTHUMBERLAND

The valuable surveys of the estates of the earls of Northumberland, housed at Alnwick Castle, are a product of careful estate management, particularly during the lifetime of the ninth earl, Henry Percy (1564-1632).<sup>3</sup> The value of terriers drawn up by such surveyors as Wm. Mayson is enhanced when they are used in conjunction with the maps produced by Robert Norton to accompany Mayson's surveys, in the period 1610-30.<sup>4</sup> These maps (Aln. Mss. O.), which seem to have been produced to show the location of demesne and freehold land, provide an extremely valuable picture of Northumberland field systems. The other surveys referred to in the text, though useful, do not provide such a detailed picture of the agrarian arrangements at this time.

P.R.O. Exchequer Comm. and Dep. (Northumberland), 23 Eliz., Hil. 6. The use of arable as shack land was most common in the lowland areas.

<sup>1</sup> H. Uhlig, *op. cit.*, p. 303.

<sup>2</sup> The author wishes to acknowledge the permission kindly granted by His Grace the Duke of Northumberland, and by the Northumberland County Archivist, to consult the archives housed in Alnwick Castle and the County Record Office respectively.

<sup>3</sup> See: G. R. Batho, 'The Finances of an Elizabethan Nobleman: Henry Percy, Ninth Earl of Northumberland', *Economic History Review*, 2nd Ser., ix, 1957.

<sup>4</sup> Robert Norton was an engineer and gunner, who made a large number of plans of the northern and southern Percy estates at this time. See G. R. Batho, 'Two newly discovered maps by Christopher Saxton', *Geographical Journal*, cxxv, Pt. 1, March 1959, p. 72.