

DISTRIBUTIONS OF BUILDING
MATERIALS AND SOME PLAN TYPES
IN THE
DOMESTIC VERNACULAR
ARCHITECTURE OF ENGLAND
AND WALES

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Introduction

One of the principal objectives in the study of vernacular architecture is to discover at what periods various building practices were in use: to establish the sequence of development whereby one practice was succeeded by another. An equally important objective in the estimation of many students however is to discover in what places the various practices were in use: to establish the regional variations whereby the character of a place is set as firmly as that of a period.¹ In a way the second objective should be much easier to attain than the first—every building is firmly located in space however debatable might be its position in time—and it may be that the greater challenge of disentanglement of the sequence of construction of individual buildings has tended to make this more popular among students of vernacular architecture than the apparently lesser challenge of geographical distribution of various architectural characteristics. Whatever the reason, for every study within the subject which includes a distribution map there are very many with plans showing phases of construction.

It must be said at once that ever since Innocent published his rough map of the distribution of crucks by counties, the occurrence of certain features has been mapped. J. T. Smith, for instance, has published many detailed maps of the distribution of features particularly of roofing and timber frame construction;² N. W. Alcock has published the distributions stemming from his compilation of a cruck

catalogue;³ among others R. B. Wood-Jones has plotted distributions within a small region⁴ while S. E. Rigold has mapped a feature over a large part of England;⁵ but these plot the location of known examples and while they have the great advantage of including all those known they have the corresponding disadvantage of plotting in some cases the areas of study, not all districts having been studied equally intensively.⁶ The few regional studies so far published have included maps in which the distribution of various features collected by systematic survey on a more or less consistent sample has been illustrated but of necessity they concentrate on certain parts of the country.⁷ Only with the publication of P. Smith's *Houses of the Welsh Countryside*⁸ have we a set of maps in which distributions of one practice may be seen against those of others so that for vernacular architecture in Wales we have—as his subtitle indicated—a study in geography as well as history.

The attempts to produce general distribution maps for England have been of limited value because the sample of information available was too small or too unevenly spread.⁹ This is presumably one reason why E. Mercier's *English Vernacular Houses*¹⁰ contains many plans and sections but virtually no maps. Nevertheless, it does seem that we have reached a point in which a very small but quite evenly spread sample of domestic vernacular buildings is available and the resulting maps are presented here as the first step in the preparation of the more comprehensive and more soundly based distribution maps which it is hoped will emerge from the ever-expanding study of the subject.

The procedure has been to attempt to find records of one example of domestic vernacular architecture for every 10 km square in England and Wales. The 10 km square is a convenient unit appearing on readily available maps (much easier to distinguish than the parish for instance), easily identified by two letters and two figures in the National Grid, and has already been shown to be a unit large enough to make a reasonable quantity of data available and small enough to provide maps of some meaning.¹¹ The single example was chosen from whatever sources were available which could show walling material, roofing material and shape and either a photograph or plan. English examples

were taken first from the records in the University of Manchester School of Architecture, then from the list published in *English Vernacular Houses* together with the further list of records held as part of the National Monuments Record and finally from various published sources. Welsh examples came primarily from *Houses of the Welsh Countryside*, but supplemented by Manchester records, the National Monuments Record for Wales and from a few publications. For those areas which had been thoroughly covered by some survey or other an example was chosen at random, for the remainder the only available example had perforce to be chosen and so the sample appears to be random, including on the face of it a reasonable spread of size-types and periods of construction. In each case the example represents what was there at the time the record was made. The procedure therefore has produced a small but fairly evenly distributed sample of domestic vernacular architecture as it appears at the present day, and as found in the countryside, although a few examples taken from the smaller towns have been included.

A record card has been made for each example and used to prepare the maps. Initially, four maps were prepared coloured to show walling materials, roofing materials, roofing shape and plan type respectively but subsequently, and with publication in mind, the initial maps have been split so that each map shows one basic feature though with variations in the symbol to denote variations within the feature. There are about 1,441 10 km squares in the map of England and Wales; 45 squares have been excluded as heavily built-up areas with vernacular buildings swamped by modern development; 41 squares have been excluded as sparsely populated moorland perhaps not entirely without examples but with very few and very late buildings compared to the rest of the country; of the remaining 1,355 squares, 1,272 or 93.87% have had examples plotted. *Map 1* shows the areas excluded and the major sources of information for those included.¹²

Walling materials

On *Map 2* appears the distribution of *stone walling*—stone itself and cobble, flint and pebble. The dominant position of

stone walling in domestic vernacular architecture is clearly seen with the four main areas of use easily distinguishable: the Pennines, extending into Cumbria and Cleveland, the Welsh mountain areas, the Limestone Belt and the main part of the South-Western Peninsula. The flint of Norfolk, the Downs and Dorset appears as does the pebble of the Norfolk coast. Cobblestones are indicated in the south-western parts of the Lake District and around Morecambe Bay and a solitary example reminds one of the cobble with its wide joints and brick-chip galletting found in East Yorkshire. Often timber frame is considered the most characteristic domestic vernacular construction in England and Wales with stone confined to certain restricted areas; the map shows that these areas are in fact very extensive.

Map 3 is the counterpart of *Map 2* and shows the distribution of *timber frame buildings* in the countryside—or more strictly the distribution of buildings whose walls may be seen to be of timber frame, those which may have timber members entirely concealed behind walls of another material are not indicated here. The great concentration of half-timbered buildings (i.e. those with the timber frame exposed) is shown in the West Midlands extending into Eastern Wales and almost to Machynlleth. There is a scattering in South Lancashire, in Lowland Yorkshire, and in Nottinghamshire. The great concentration of timber-framed buildings which are clad in some way lies in the south-eastern quarter of England: plastered in East Anglia and the adjacent counties, with tile hanging or mathematical tile hanging in Kent, Surrey, Sussex and Hampshire, weather-boarded in Kent and Essex. This concentration is split on the map by the Greater London conurbation. Among the clad timber frames there is also a fairly even scatter of half-timbered buildings, some perhaps having escaped the fashion for cladding half-timber, others testimony to the more recent fashion for stripping buildings which were designed to be clad. The two compact blocks of timber frame construction: West Midlands and South-Eastern England explain the impression often gained of a vernacular architecture characterised by the use of that material.

To some extent, *Map 4, brick walling* relates to *Map 3*, the material sharing the Midlands and South-Eastern regions,

but two further concentrations lie in Cheshire and South Lancashire, in Staffordshire and South Derbyshire, in the Vale of York and its extension south of the Humber, and in the areas round the Wash. There is also a group of brick houses in North Cumberland. The association between timber frame and brick is only to be expected insofar as the latter material tended to supersede the former. In other regions brick probably superseded less permanent constructions than timber frame: mud and stud in Lincolnshire, for example, and clay in North Cumberland. In spite of the recent expansion of brickwork into all areas of the country the map shows that in the Pennines, Wales, the South-West and the Limestone Belt masonry construction held its place long after brick became available.

In *Map 5* the distribution of three types of construction using earth is plotted. Earth in the form of solid walls called cob, mud, clay, wychert, etc., predominate in North Devon and South Somerset with some extension into Cornwall on the one hand and Dorset, Wiltshire and Hampshire on the other. The material is also shown in Leicestershire and Northamptonshire, in Central Lancashire and North Cumberland, while in Wales its use may be seen in Cardiganshire and Llŷn. The chalky earth moulded and sundried into blocks of clay lump is seen to occur in Norfolk, Suffolk and Cambridgeshire. The mud and stud technique makes use of a thinner wall here considered rather as mud reinforced with timber rather than as timber frame infilled with mud; it appears that the technique is predominantly of Lincolnshire though also used along the Lancashire coast.

Roofing materials and shape

Two varieties of stone roof covering are shown on *Map 6*: stone flags and stone tiles. The very heavy brick sandstone or gritstone slabs which are available in large sizes and can be laid to a low pitch are noted as stone flags and it may be seen that this is a material of the Pennines; it is used in the Pennine parts of the four northern counties and the Peak District of Derbyshire but its use extends to lowland parts of those counties—into South Lancashire and Mid-Cheshire also and into Nottinghamshire. The much lighter and thinner

pieces, usually of limestone, small and tile-like in dimensions and normally laid to a steep pitch are here called stone tiles. They are seen to be predominantly a material of the Cotswolds, (Gloucestershire and Oxfordshire) but extending with the limestone south into Wiltshire and Dorset and north into Northamptonshire. Their use also extended into Eastern Wales and the Marches. A related material is the Horsham "slate" of the Weald and this is shown in the little group on the borders of Sussex and Surrey. The maps show both how closely the two sorts of material concentrate around the geological deposits from which they are quarried and, paradoxically, how they spread outwards from the immediate vicinity of the quarries, flagstones into the Lancashire and Yorkshire lowlands, stone tiles into Wales.

Map 7 is of the use of *slate*, attempting to distinguish between thick slate—varied in size and laid to diminishing courses, and thin slate—uniform size and laid in regular courses. Slate is seen to be the predominant roof covering west of a line between the Tees and the Exe. Thick slate is concentrated in Cumbria, Wales and Cornwall where most of the slate quarries were found but there is also some token representation of the slate of the Midlands such as the Swithland slate of Leicestershire. Thin slate is seen in the rest of Wales, in the North-East and in the South-West; it is also seen to be scattered throughout the whole of Midland England west of a line between the Wash and Portland Bill. Thick slate is likely to be an original roofing material whereas thin slate is likely to be a replacement roof covering except on houses erected during the nineteenth century.

Slate, stone flags and stone tiles are all natural roofing materials. Maps 6 and 7 have shown that their use is related primarily to the places where quarries are worked though use of thin slate is more widespread. *Map 8* illustrates the distribution of manufactured tiles; *plain tiles and pantiles*.

It will be seen that plain tiles are found in two groups divided by the Limestone Belt: one group in the West Midlands, principally Worcestershire, Shropshire and Staffordshire and another group in the south-east quarter of England, beyond the line which joins the Wash and Portland Bill but excluding Norfolk. Pantiles also are found in two regions: one runs along the East Coast between the Pennines

and the sea but includes much of Norfolk and the northern part of Suffolk; the other, much smaller, comprises most of Somerset and is centred on Bridgwater. There is very little mixture of the two zones; only in Nottinghamshire and Suffolk are both types of tile used together. Both plain tiles and pantiles have been in use for a long time but the great spread of popularity of pantiles was in the nineteenth century and they are more often seen as a replacement roof covering than plain tiles.

The maps suggest that plain tiles are mainly, though not entirely, associated with timber frame construction. Pantiles are associated with brickwork in Yorkshire, Lincolnshire and Norfolk but not with the extensive areas of brick construction found elsewhere.

Although formerly a roofing material both ubiquitous and numerous in examples *thatch* has long been out of favour and it is surprising to see in *Map 9* so much remaining to be recorded. The main area of use or survival of thatch consists of a broad band starting on the sea coasts of Cornwall, concentrating in Devon, running through Dorset, the fringes of Somerset, Hampshire, Wiltshire, Oxfordshire and so on to Northamptonshire and Leicestershire to peter out in Lindsey. Smaller groupings occur in Cleveland, West Lancashire, Cheshire and Staffordshire to one side of the main band and East Anglia to the other side. In Wales there is little thatch remaining but Cardiganshire seems richest with some in Radnorshire and the north-western counties and a significant scattering along the shore of the Bristol Channel.

One might expect that the maps of stone and slate roofing taken together would be the counterpart of the combined maps of thatch and tiles. To some extent this is true: stone flags and thick slates together occupy the Pennines, Cumbria, Wales and Cornwall leaving the rest of the country to thatch and tile, but the zone of stone tile intrudes in the plain tile and thatch country while the thatch of Cardiganshire and South Wales and the thatch of West Lancashire intrude on the stone flag and slate country. Thin slate also helps to fill the gaps in the East Midlands and Cheshire.

Map 10 shows the location of various types of *hipped roof*; a halved symbol indicates that both hip and gabbe are found in the same roof. All other examples recorded have gabled

roofs and have not been plotted. It will be seen that hipped roofs are characteristic of the south-eastern half of the country, beyond a line joining the mouth of the Severn with the mouth of the Tees, and especially of that part which lies south of the line joining the Wash to the Bristol Channel. Even in the area of heaviest concentration more than half the roofs are gabled but in the west and north of the country hips are shown as virtually non-existent in surviving vernacular buildings.

The use of hipped roofs does not correspond exactly or indeed at all closely with the use of any single roofing material. Hips or half-hips and thatch may be thought to go together, and indeed this is so as far as Cornwall, Devon, Somerset, Dorset, Wiltshire and Hampshire bear witness, but the thatch of the East Midlands is associated with gabled roofs while the hipped roofs of Kent, Sussex and Surrey are not associated with thatch.

The use of gabled roofs certainly corresponds with the use of stone and slate roof coverings, and pantiles do not lend themselves to hipped roof shapes but plain tile seem to be equally at home with hips and gables—the plain tiles of the West Midlands cover gabled roofs whereas those of Kent, Surrey and Sussex are hipped.

Some plan types

All the previous maps have made use of the total record. Every house has a walling material, roof covering and roof shape and if a sample house does not appear on one map then it will appear on another. The remaining three maps are selective. They attempt to show three common positions for the main chimney stack in relation to the rest of the house and since the principal hearth is one of the prime determinants in house planning regional variations are particularly interesting. However plans are not available for all the record and so some examples may have been missed. Moreover there are other relationships of chimney stack to plan which have not been plotted; whereas some relationships show clearly on the outside of the building others do not; whereas some external views relate to one possible internal arrangement others relate to several different plans—this is especially true

of that common type of house which has a chimney stack in each gable. So the maps taken together do not show the total record and no attempt has been made to plot the location of houses with a chimney stack in each gable but it is suggested that the three maps illustrated here do represent enough examples to show interesting regional variations.

One house plan much used in vernacular buildings is that in which the principal *fireplace backs onto the entrance*. There are two main versions illustrated on *Map 11*: that in which the fireplace is within the house and entry is by way of some sort of cross passage and that in which the fireplace is in a gable wall and entry is through the same gable. Examples of both are plotted on the same map.

There are three main areas in which the plan was used: Cumbria, South Wales (south-west of a line between Machynlleth and Monmouth but excluding Pembrokeshire), South Devon and South Somerset. There are also three other areas of use: Cleveland, the central part of the Limestone Belt and part of Kent. The first group corresponds with areas in which longhouses or their derivatives are known; this may also have some bearing on the existence of examples in Cleveland. The other examples, however, especially those in Kent probably derive from the replacement of open hearths by fireplaces which in these instances back on to an earlier cross-passage rather than blocking it as would be customary.

A common house plan used from the mid-sixteenth century for about two hundred years was that in which the entrance is against a single fireplace jamb or against the jambs of two fireplaces set back-to-back. *Map 12* shows that this, the *baffle-entry* plan is found mainly in the south-east part of the country beyond a line joining the Severn and Tees and where it is very common indeed. Within this zone there are some gaps, notably in Norfolk but generally the plan is widespread. However, there is another significant zone of use in the western part of the country, a broad band running south from Lancashire through Cheshire and Staffordshire and then turning west in Montgomeryshire almost to meet the sea. There are smaller groups such as that of West Yorkshire where the Pennine valleys widen out to meet the plain.

The most common version of the plan here considered is the *baffle-entry* proper—that in which the entrance is against

the jambs of two back-to-back fireplaces—but there is a variation in which there are two such fireplaces but the entrance is not against them but is located elsewhere on the main elevation, perhaps into a cross-passage. Examples of this version have been plotted on Map 12 but simply support the main distribution within the South-East.

Of all the distributions illustrated this comes closest to distinguishing a Highland and a Lowland Zone; the baffle-entry and its associates belong to the Lowland Zone more precisely than the chimney-backing-on to-the-entry belongs to the Highland Zone.

There is a third group of house plans whose distribution appears to be of some interest: the type in which the principal chimney stack is neither within the plan nor at the gable but projects from one of the *side walls*. There are two main versions, both of which are illustrated on *Map 13*.

In one version the chimney stack rises from a chimney breast which is within the front wall or projects from it and generally is seen on approaching the front door. This version is confined to the west, the main group of examples being in North Devon and Cornwall with a few on the south coast of Wales and three in North Wales. In the other version the chimney breast and stack are at the rear of the house—projecting from or incorporated in the rear side wall. Examples are quite widely scattered and include outliers in Westmorland, Yorkshire and Norfolk but generally are found in the western half of the country. Many are associated with a cross-passage and some at least represent the provision of a side-wall fireplace in rather larger vernacular houses in place of a central hearth. Taking this point into consideration the side wall fireplace is seen to be a feature predominantly of South-West England and South-West Wales.

Conclusion

It requires no great elaboration of recording or mapping to show that the Cotswolds have lots of stone houses with stone tiled roofs and that brick houses with pantiled roofs may be found in East Yorkshire. Nevertheless one's impressions are inevitably coloured by circumstances, may not be related to the impressions of others and are affected by the uneven

nature of national coverage some areas having been closely studied and widely publicised others having been neglected, their interest ignored. In spite of the limitations of the sample used in this survey clear distributions of walling and roofing materials have been demonstrated; in at least some cases definite concentrations and precise frontiers are to be seen.

It must be admitted nevertheless that the sample has serious limitations. One house is a poor representation for 10 sq km of a homogenous region such as the Yorkshire Dales let alone one of great diversity such as the Weald of Sussex. Equally one early nineteenth-century house is an inadequate representative of four centuries of vernacular building in Cheshire let alone seven centuries in Suffolk. Furthermore one mud and stud cottage in Lincolnshire has to represent all social levels in 10 sq km of that county just as one medieval hall has to represent the corresponding social organisation of a similar area in Cornwall. Any really satisfactory sample would have to take into account diversity, time and status in each sample area insofar as this can be done without begging the questions which the distribution maps are intended to answer. While plainly falling far short of this ideal it is suggested that this study provides a starting point for further efforts in which a larger sample gives a sounder basis for maps which may well confirm the distributions indicated in the present study.

Notes and references

¹ See R. A. Cordingley in "Rural House Types", pp. 123-4 of *Proceedings of the British Association for the Advancement of Science*, 6, no. 22, 1949.

² J. T. Smith "Timber framed building in England", *Archaeological Journal*, 122, 1966 is an example of the many articles by J. T. Smith which include distribution maps and which are listed in *A Bibliography on Vernacular Architecture*, Sir Robert de Z Hall ed., 1972 and its supplements.

³ N. W. Alcock, *A Catalogue of Cruck Buildings*, 1973.

⁴ R. B. Wood-Jones, *Traditional Domestic Architecture of the Banbury Region*, 1963.

⁵ S. E. Rigold, "The Distribution of Aisled Timber Barns", *Vernacular Architecture* 2, 1971, pp. 20-21. This is just a token of the many partial distributions already available.

⁶ J. T. Smith, *op. cit.*, p. 135, has some observations on this matter.

⁷ For example J. E. C. Peters, *The Development of Farm Buildings in Western Lowland Staffordshire*, 1969 and R. B. Wood-Jones, *op. cit.* Small diagrammatic distribution maps appear in R. W. Brunskill, *Vernacular Architecture of the Lake Counties*, 1974.

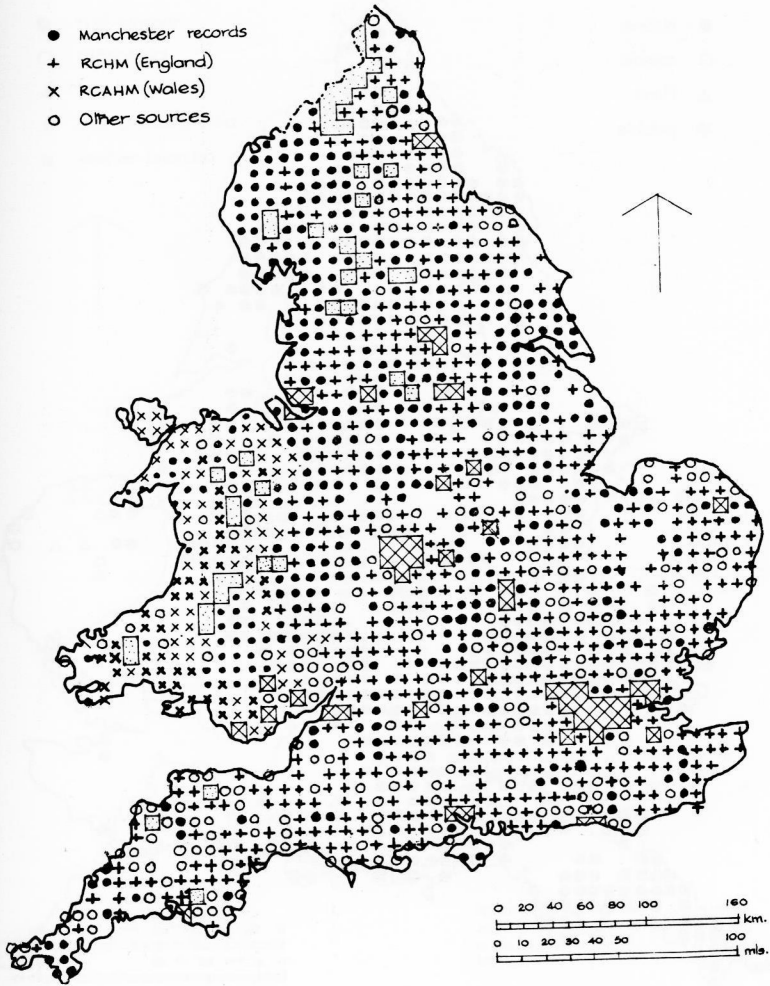
⁸ Published in 1975.

⁹ An early example is the "Map of England shewing the principal Geological Divisions" by S. R. Jones, dated 1912 and reproduced in his *English Village Homes*, 1936 makes broad divisions of building materials used. The "Distribution of Traditional Building Materials of Great Britain" which appears on p. 167 of the 1958 edition of *The Observer's Book of Architecture* follows similar lines, imposing names of building materials on a generalised map of solid geology, but is to a very small scale. In R. W. Brunskill, *Illustrated Handbook of Vernacular Architecture*, 1971, there appeared generalised maps of distributions of building materials, based on about 500 examples unevenly distributed, but the present maps generally confirm the distributions there indicated. In John Prizeman, *Your House—the outside view* a map suggests the areas of use of stone, brick and flint but not timber frame or clay and has some indications of climatic influence and broad areas of post-Roman settlement imposed.

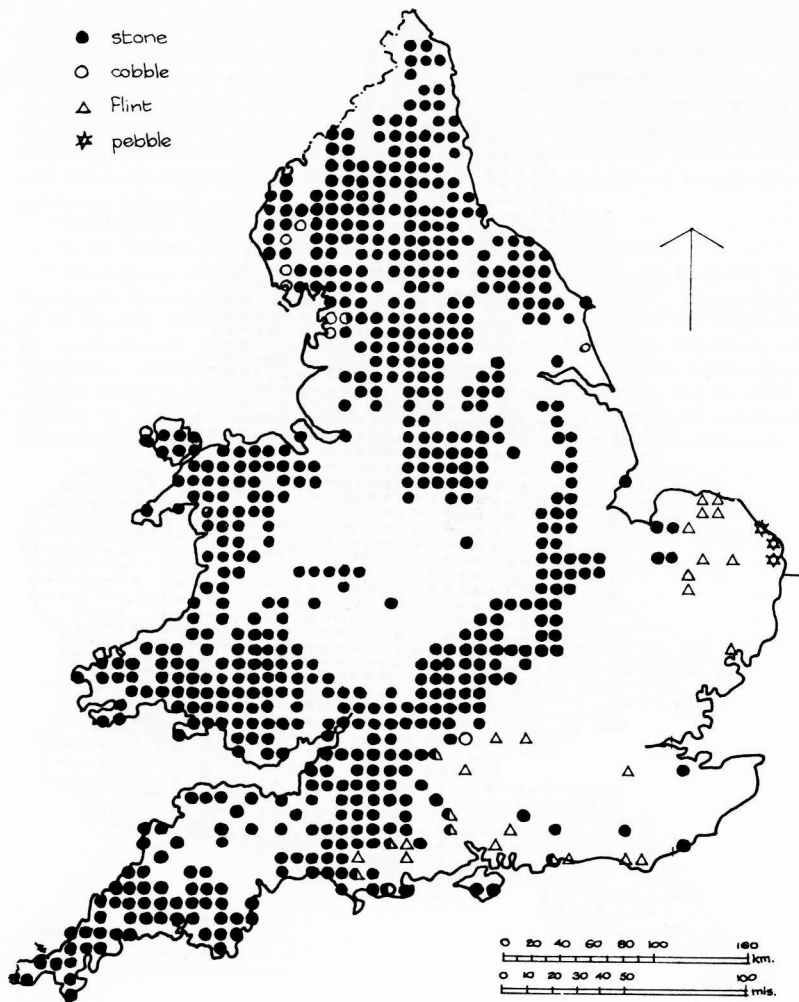
¹⁰ Published in 1975.

¹¹ S. M. Walters and T. H. Perring, *Atlas of the British Flora*, 1962.

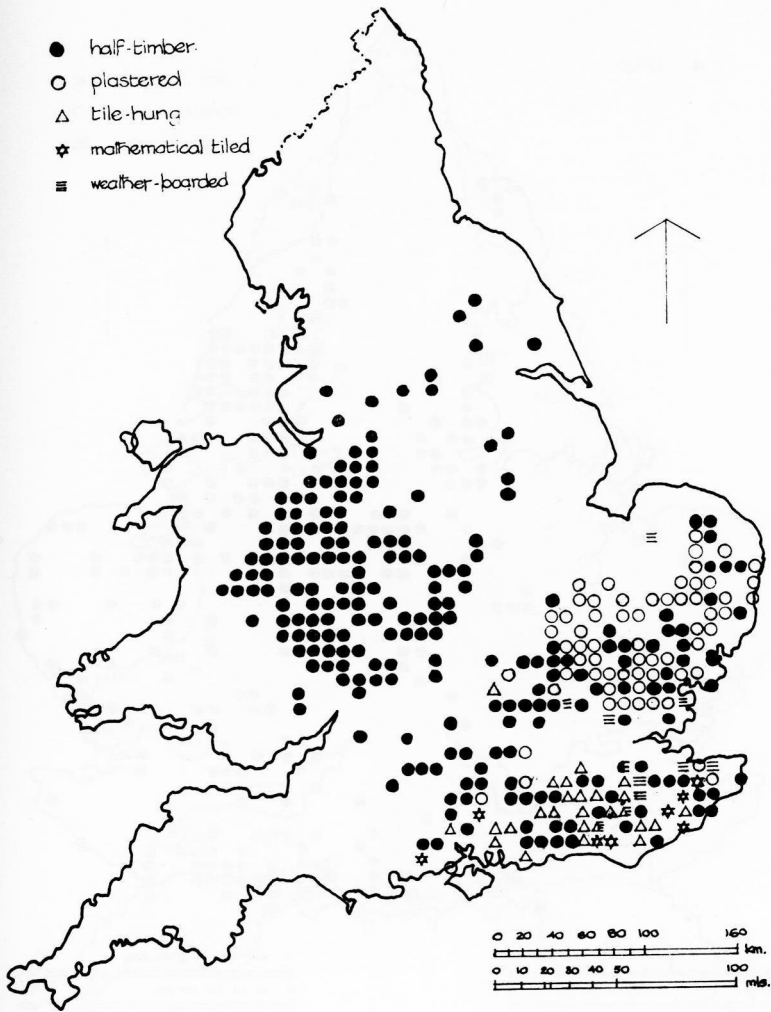
¹² Illustrations of some of the building materials appear in R. W. Brunskill "A Systematic procedure for recording English vernacular architecture", *Transactions of the Ancient Monuments Society*, 13 N.S. and further illustrations and diagrams of materials and plans appears in R. W. Brunskill, *Illustrated Handbook of Vernacular Architecture*, 1971. Many photographs and much further information may be found in A. Clifton-Taylor *The Pattern of English Building*, 2nd ed. 1972. *Houses in the landscape* by John and Jane Penoyre, 1978, includes coloured illustrations of vernacular buildings and regional sketch maps of the materials used.



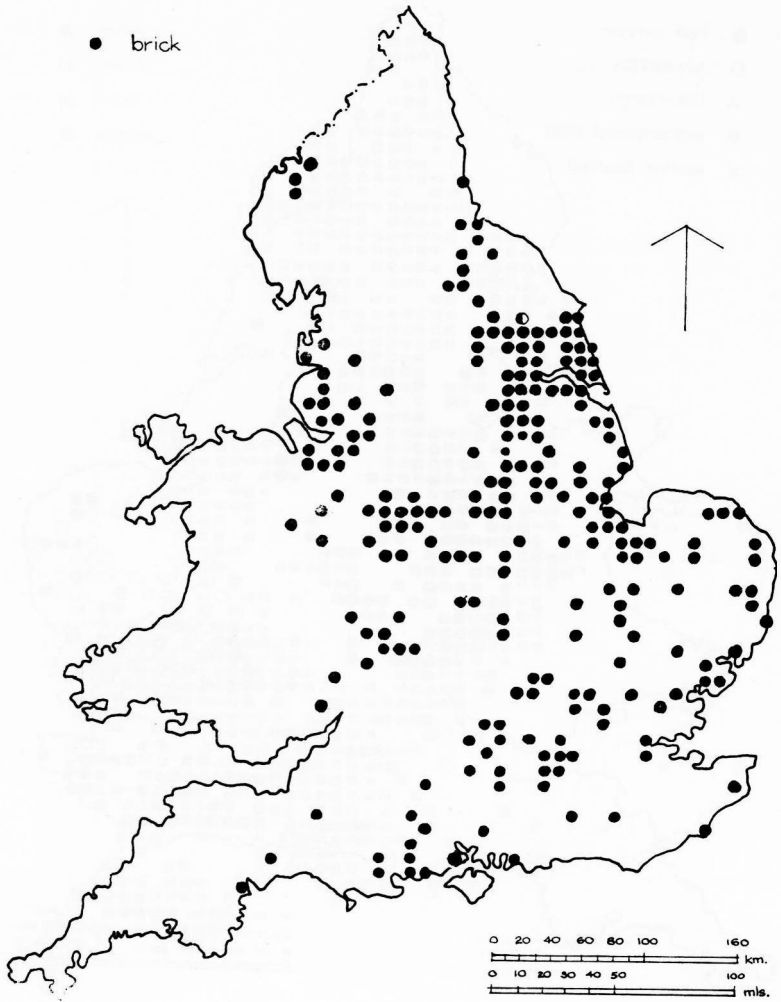
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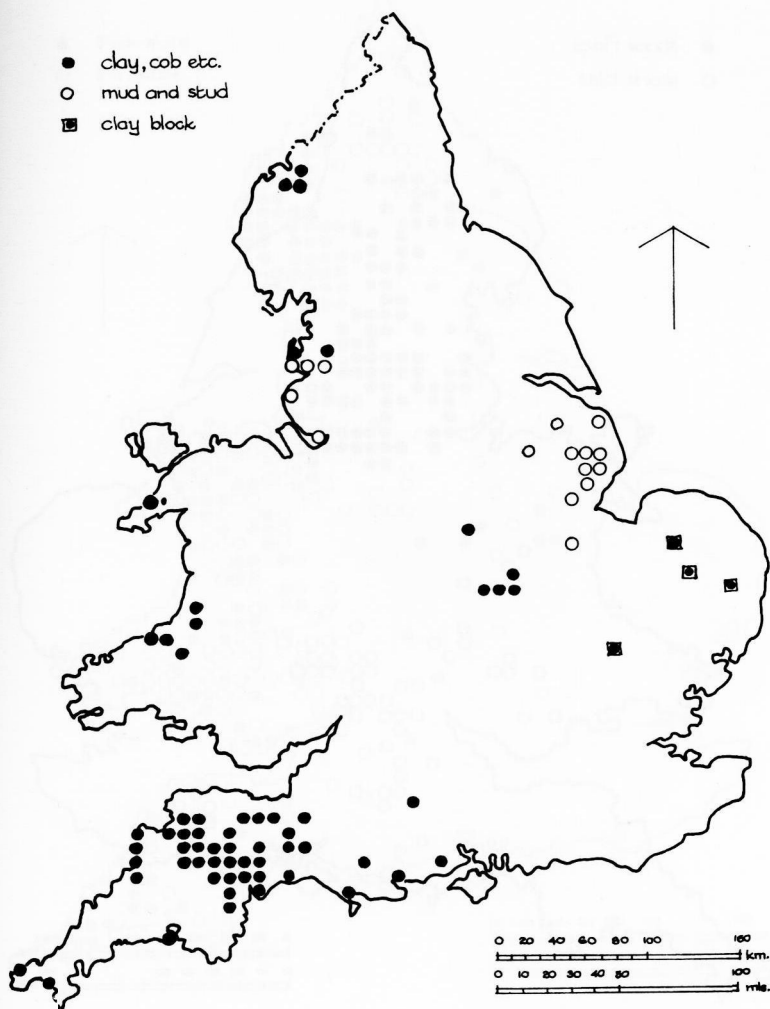
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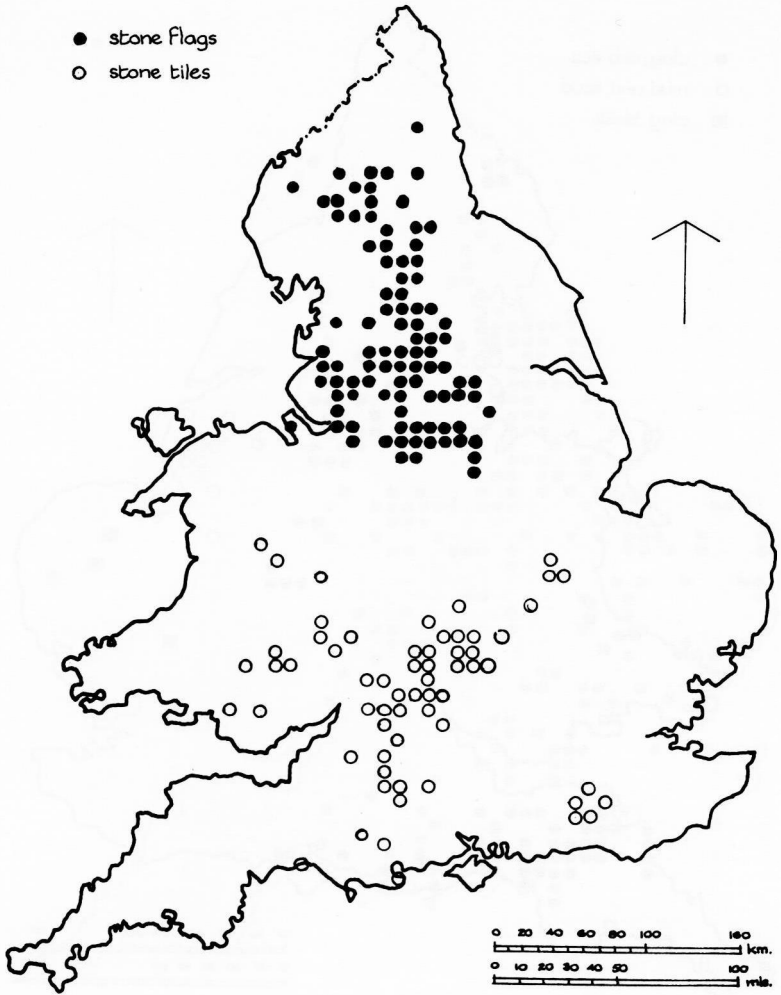
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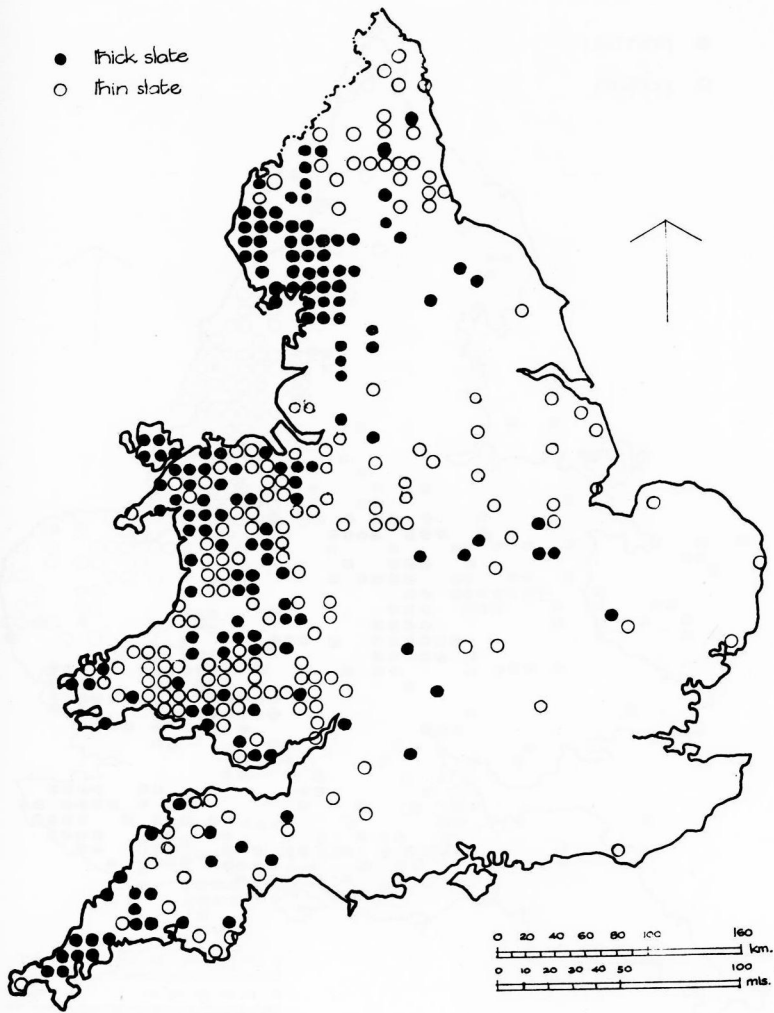
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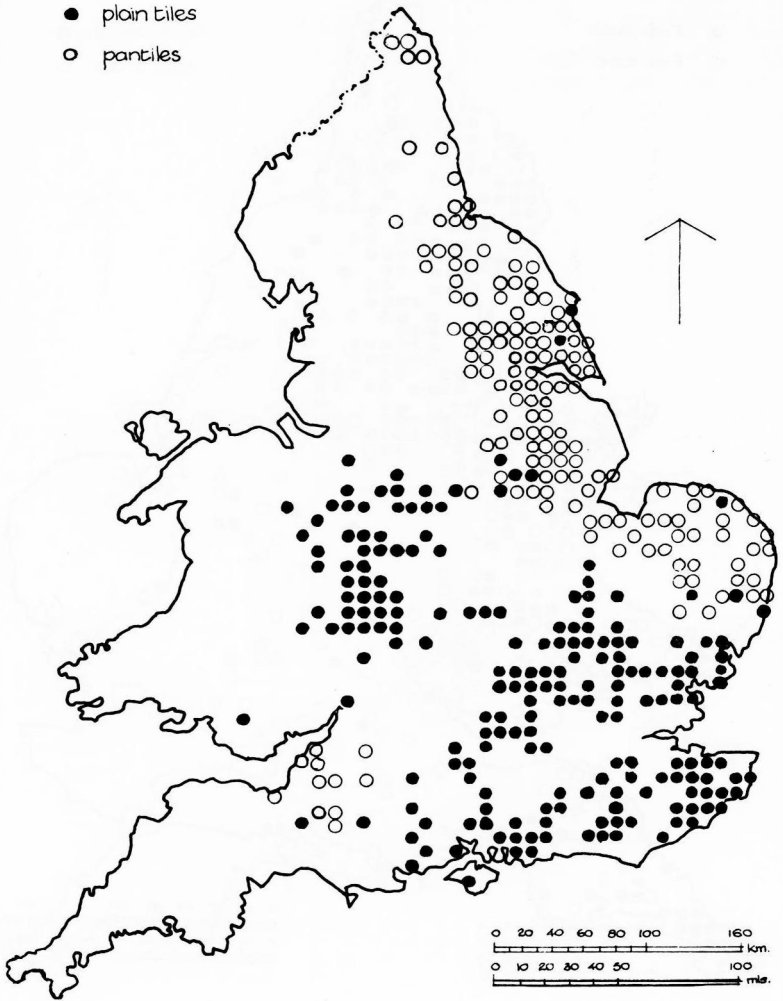
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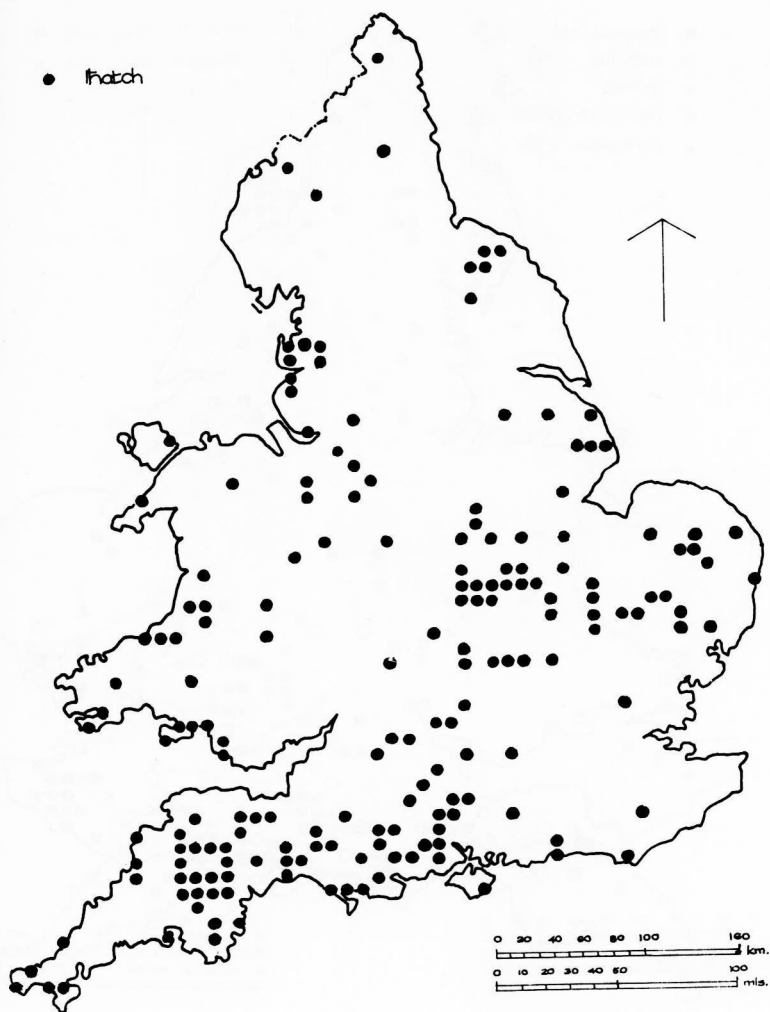
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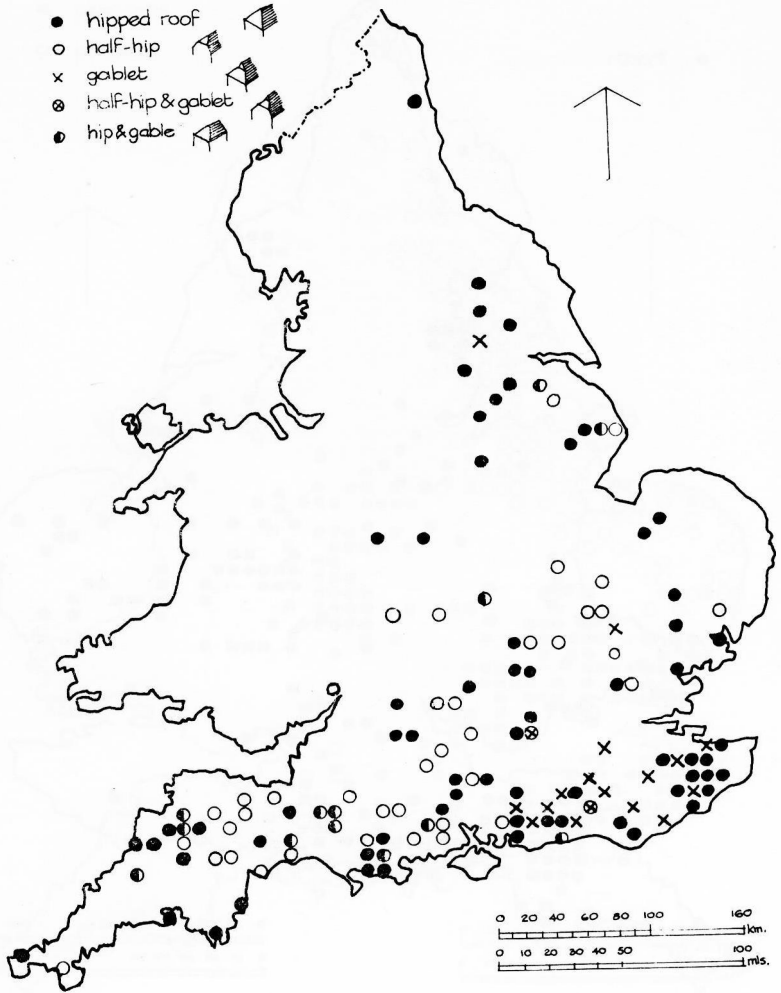
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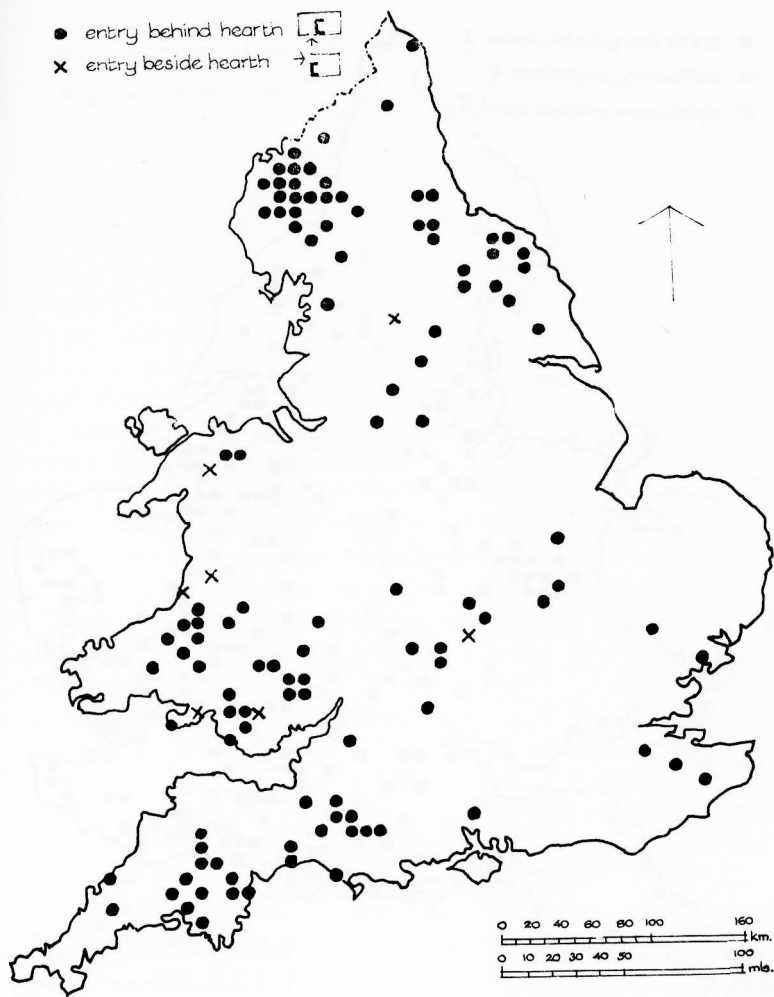
MAP 8.

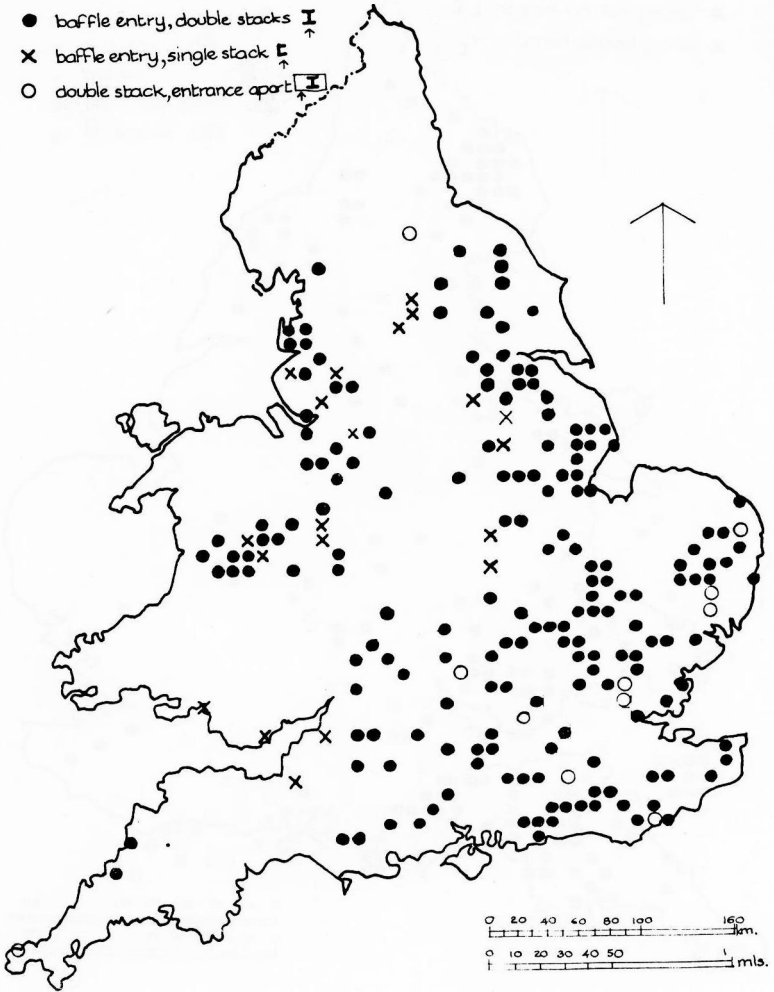


MAP 9.



MAP 10.





MAP 12.

