THE 1801 CROP RETURNS FOR SOMERSET

BY MICHAEL WILLIAMS, B.A., Ph.D.

(Senior Lecturer in Geography, University of Adelaide)

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INTRODUCTION

The years that span the last few decades of the eighteenth century and the first few of the nineteenth were characterized in Somerset by many impressive pioneer attempts to collect information about the county. In 1791 Collinson's three volume *History and Antiquities of Somerset* was published, and it was based, so we are told, on "an actual survey made by the late Mr. Edmund Rack", the founder of the Bath and West of England Agricultural Society.[1] At some time between 1794 and 1798, Richard Locke of Pillsmouth Farm, near Burnham, compiled his very extensive *Survey* of Somerset which adds much detail and new information to Collinson's earlier work,[2] and later, the Rev. William Phelps, vicar of Meare, published his *History and Antiquities of Somersetshire* (1836-39) of which only two volumes were completed.[3] Coupled with these literary compilations of facts and observations, went the exact topographical mapping of the county at a scale of 1 inch to 1 mile, begun in 1782 with Day and Masters' map, followed by W. Greenwood's excellent *Map of the County of Somerset* in 1822, and the work of the Ordnance Survey, which began in 1809 in Somerset.[4]

Besides collecting and bringing together valuable information on the history and antiquities of the county, these literary and cartographical efforts represented the first fine flowering of systematic enquiry into what the land looked like and how it was used. These enquiries were based on accurate observation in the field and sometimes supplemented, as in Phelps' work, by stereotyped questionnaires sent out to the local clergy.[5] In this way the data, that have become some of the major sources of the history and geography of the county at this time, were collected.

All this was perfectly in keeping with the spirit of the age, but one must also remember that Britain was at war between 1793 and 1815 and there was an increased awareness of the need to collect, systematically, statistics of matters of public concern, the census of 1801 being, perhaps, the best known example of this. This war-time drive to amass accurate information for what were basically strategic purposes was most marked in the realm of agriculture. In 1794, the newly constituted Board of Agriculture started publishing its reports on the state of agriculture in the various counties of Britain and these were supplemented by second editions in greater detail in the period from 1798 to 1817. The Somerset volume, by John Billingsley of Ashwick Grove, near Shepton Mallet,

1 J. Collinson, *History and Antiquities of Somerset* . . . 3 vols. (Bath, 1791).
2 Somerset Record Office, *DD/SAS PR* 86. Portions of Locke's *Survey* are printed in F. Madeline Ward, *Supplement to Collinson's History of Somerset* (Taunton, 1939).
3 W. Phelps, *The History and Antiquities of Somersetshire* (London, Vol. i, 1836, Vol. ii, 1839).
4 Map Room, British Museum. Portions of these maps are illustrated in T. Chubb, *A Descriptive List of the Printed Maps of Somersetshire*, 1575-1914 (Taunton, 1914).
5 The material for all of Phelps' work is in 17 large volumes of manuscripts in the British Museum, Additional Manuscripts 33820-33836. Volume XII (Add. Mss. 33831) contains the parochial questionnaires.

appeared in 1795 and was revised and enlarged in 1797.[6] During the interval between the publication of the two editions of Billingsley's survey, there appeared William Marshall's *The Rural Economy of the West of England*,[7] and Arthur Young's "A Farming Tour of the South and West of England."[8]

But fine as these pioneer attempts were, they did not record any detailed statistics of either crop acreage or land utilization, and it has been thought generally that such material was not available until the compilation of official statistics by the Board of Agriculture from 1866. Yet this is not so. In 1796, as part of a "scorched-earth" policy to be pursued in the face of a threat of a French invasion, a livestock return was called for covering the land mainly up to 12 miles from the coast. As far as Somerset is concerned, the only returns extant are those of 1804 for 25 parishes in the vicinity of Mells and Frome on the eastern edges of the county.[9] Later, bad harvests in 1795, 1799 and 1800, in conjunction with acute inflation, the scarcities of war time, and the rapid growth of population as the Industrial Revolution got under way, pushed up the price of wheat on the Windsor market from 52s. 3d. per Winchester quarter in 1794, to 144s. 7d. in 1801, and the price for 1800 was very little lower.[10] Various surveys were undertaken between 1795 and 1801 to find out about the state of the harvests and the supply of wheat, but of all of these, that of 1801, in which the acreage of cropland was asked for, was the most complete and important.

It is these 1801 Agricultural Returns for Somerset that are now examined in detail.

THE 1801 RETURNS: THEIR INTERPRETATION AND TREATMENT

In 1801, Lord Pelham, Secretary for State for the Home Department, asked the bishops of the 26 sees of England and Wales to arrange with their clergy to collect the statistics on specially prepared forms and then return them to the Home Office. The forms had Wheat, Barley, Oats, Potatoes, Peas, Beans, and Turnips or Rape printed on the left hand side, a column for "the number of acres", and also a generous space on the right hand side for comments. Most incumbents confined their comments to estimates of yields and the accuracy of the returns, although some like the incumbent of Bathwick (26) described in detail the expansion of Bath, others at Radstock (212) and Camerton (54) commented on coal mining, and the vicar of Frome Selwood (123) wrote about manufacturing in that town.[11]

But despite their stylized format and distribution, there are problems of interpretation in the Returns that need careful attention. First, there is the question of the actual coverage. The numbers of returns from the counties of South-West England vary

6 J. Billingsley, *A General View of the Agriculture of the County of Somerset* (London, 1795) Reprinted with amendments (Bath, 1797).

7 W. Marshall, *The Rural Economy of the West of England* (London, 1796 and re-issued with amendments in 1805).

8 A. Young, "A Farming Tour of the South and West of England", *Annals of Agriculture* xxx (London, 1798), 302.

9 Somerset Record Office, DD/SAS/SX/19.

10 W. E. Minchinton, "Agricultural Returns and the Government during the Napoleonic Wars", *Agricultural History Review* **1** (Oxford, 1953), 29-43.

11 The 1801 Returns are in the Public Record Office, Home Office Documents, 67/2. The individual forms for Somerset were arranged alphabetically and numbered consecutively. From now on individual quotations, unless otherwise noted, will not be referred to in footnotes. They all come from P.R.O. H.O. 67/2, and the number of the form will be given in brackets in the text.

considerably. There are virtually none for Devon and Dorset,[12] but Gloucestershire[13] and Wiltshire[14] are fairly well covered. The returns for Cornwall seem nearly complete, though they have not yet been analysed.[15] In Somerset the picture is good, with 279 out of 461 parishes represented, although only 261 parishes are mapped (see Appendix).

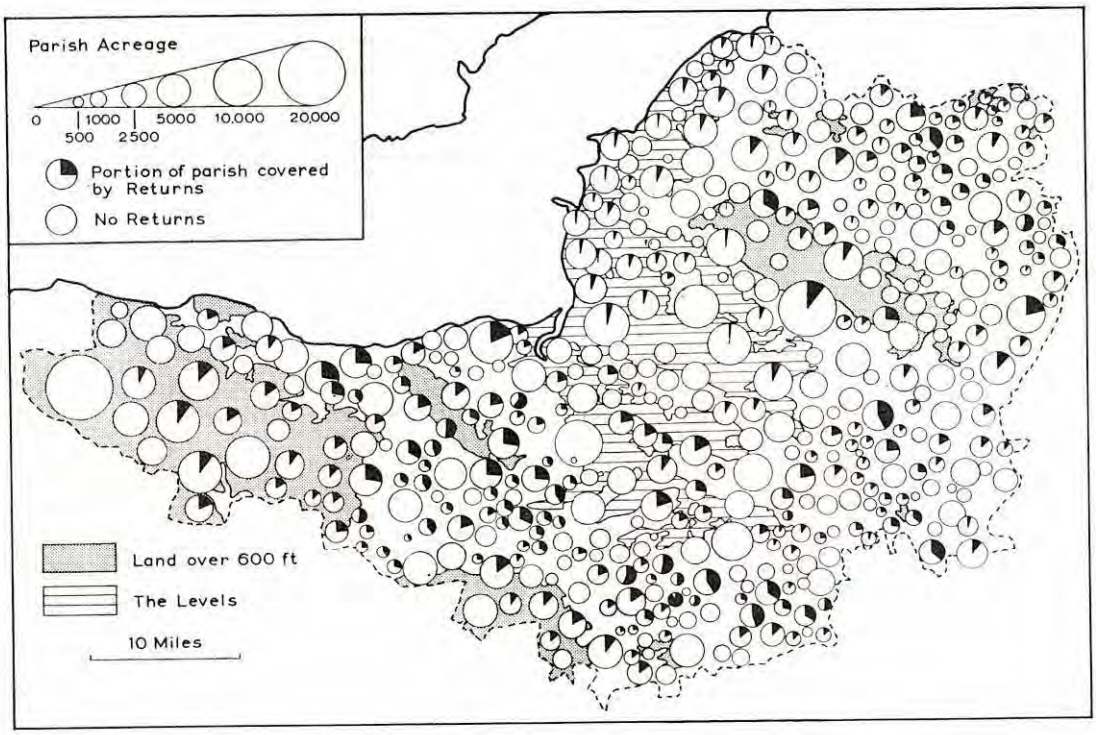

FIG. 1
Parishes with material extant. The parish acreages of 1851 are used as the basis for this map.

This material is plotted in Fig. 1, each parish being represented by a circle, proportionate in size to its acreage. Those parishes with Returns for 1801 have a segment shaded, the segment being the proportion that the cropland recorded bears to the total parish acreage. At a glance it can be seen that there was an uneven coverage of Returns, but to regard all of these either as omissions at the time of compilation or as losses during storage in later years (as must obviously be the case in the absence of information for Wedmore, North Petherton or Crewkerne, to take three examples at random) is to ignore some primary aspects of the physical geography of the county. Some of the most extensive gaps on the map are in the three great areas of what were hitherto "waste lands" in Somerset, where little cultivation was to be expected anyhow: the bleak upland areas

12 H. C. K. Henderson, "Agriculture in England and Wales in 1801", *Geographical Journal*, **111** (London, 1952), 338-345.
13 W. E. Minchinton, "Agriculture in Gloucestershire during the Napoleonic Wars", *Trans. Brist. and Glos. Arch. Soc.*, **68** (1949), 165-183.
14 H. C. K. Henderson, "The 1801 Crop Returns for Wiltshire", *Wilts. Arch. Mag.*, **54** (1951), 85-91.
15 P.R.O., H.O. 67/10.

of Exmoor and the Western Hills, the floodable lowlands of the Levels, and the exposed plateau of the Mendip Hills. Comments on the returns for these three areas suggest this lack of cultivation; in the Levels, for example, Brean (48) is described as being for "the greatest part . . . in pasture land", and Mark (170) "a very extensive parish and most of the land in it is entirely calculated for grazing", and these examples could be multiplied monotonously.[16] Thus the absence of a return in these three areas probably indicates no more than a predominance of grassland or commons, and this tends to reduce the impression of non-returns or losses, but it does not entirely eliminate it.

Secondly, there is the problem of accuracy in the acreage Returns. There seemed to be a marked reluctance on the part of the farmers to give information to the clergy. The incumbent of Charlton Horethorne (61) put this down to the farmers being "rather shy", but the minister at Swainswick, near Bath (244) was far closer to the truth when he said, "The farmers are a cautious set of people, suspect that Ministers have Designs upon them, and therefore it is possible they may not make a true return"; and this is borne out in other instances.[17] Undoubtedly the fear that co-operation with the clergy might lead to an increase in tithes must have led to many farmers falsifying their information. There were a few instances of downright refusal to give any information, as at Bishop's Lydeard (31), but it seems far more probable that a farmer would tend to under-estimate his crops by various amounts and thereby produce a return roughly in accordance with the known farming practices of the area. To say he had no crops at all would be ridiculous as it was obvious for all to see what he was growing, and in any case he was probably paying tithes already. Because of this, it is best to consider the Acreage Returns as a sample of the complete distribution of crops in 1801 and not as an indication of the absolute amounts.[18]

Thirdly, there is the problem of customary or "computed" acres in the Returns, which were used to measure cropland in the south-eastern part of the county in an area bounded roughly by a line joining Curry Rivel, West Lydford, Charlton Horethorne, East Coker, and Kingstone, near Ilminster. The acres varied in size and were not comparable with the statute acre, being only 4/5ths or 5/6ths its area.[19]

Therefore in view of these difficulties, the 1801 returns need careful and special treatment in order to extract the fullest significance from them. As suggested by David Thomas in his work on the Welsh returns, and elsewhere, the method of analysis must "be based upon the relative importance of each crop within the parish; a parish wheat acreage, for example, cannot be accepted as an absolute value, but can be studied in relation, say, to the barley acreage or the rye acreage in the total cropland of the same

16 For the Levels see Badgworth (14), Berrow (29), East Brent (48), Easton-in-Gordano (113), Huntspill (141), Lympsham (169), Stawell (240), Uphill (258) and Yatton (284). In the Western Hills, Clatworthy (76), Dulverton (106), Kittisford (155), Upton (259) and Stowey (241). For comments in other areas see Evercreech (117), Freshford (122), Frome Selwood (123), Hornblotton (137), High Littleton (161), Ilminster (143) and Rimpton (241).

17 For example, Aisholt (10), Burcott (51), Creech (93), Lydeard St. Lawrence (167), Williton (99) and confirmed in other counties.

18 See David Thomas, *Agriculture in Wales During the Napoleonic Wars* (Cardiff, 1963), 54-47. In this connection it is interesting to compare the approximately 92,000 acres of cropland in the Returns with Billingsley's contemporary estimate of 260,000 acres of arable and convertible land, together with 20,000 acres of common fields. Billingsley, *op. cit.*, 12.

19 F. Seebohm, *Customary Acres and their Historical Significance* (London, 1914), 105, and map facing 100.

parish."[20] Thus in Figs. 2-6, the total cropland returned in 1801 is represented by a circle proportionate to the total, and the proportion each crop bore to the total is marked out by a segment in that circle. While this method of analysis by relative proportions does not remove entirely all causes of error, it does provide a better and less biased picture of conditions than any other method would; it also overcomes the problem of the customary acres. Therefore it is proposed to look at the distributions of individual crops in relation to the physical geography of the country, the influence of which should have been marked in this early period before the development of modern methods of communication and farming; then, to look at the crop competition and the resulting crop associations or farming regions, which will also throw some light on the contemporary farming practices that were hinted at by writers like Billingsley and Marshall.

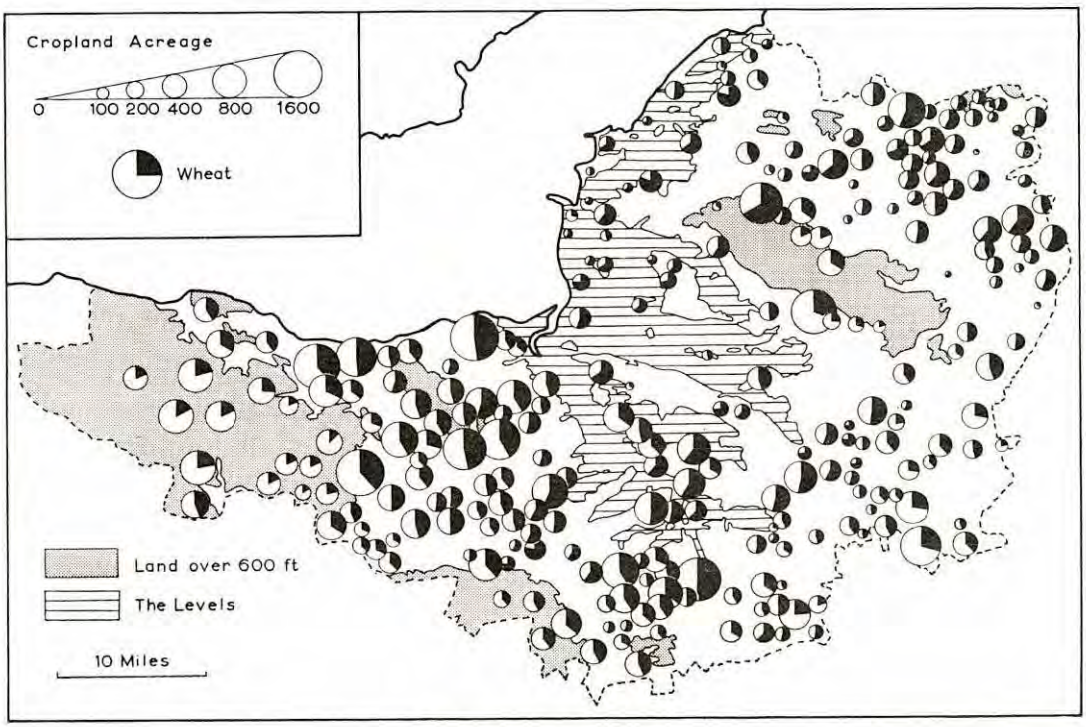

FIG. 2 The distribution of wheat.

WHEAT (Fig. 2)

Taken as a whole, Somerset was not a pre-eminently arable county but a pastoral one, and there was far more emphasis on fat oxen, sheep, hogs, butter and cheese, and cider, than on cereals, which were said to have been purchased in large quantities from the adjacent counties of Dorset and Wiltshire.[21] Despite this generalization, however, there was not one parish of those returned in 1801 that did not grow some wheat and

[20] D. Thomas *op. cit.*, 58 and his "The Statistical and Cartographical Treatment of the Acreage Returns of 1801", *Geographical Studies*, **5** (London, 1958), 15-25.
[21] J. Billingsley, *op. cit.* 14.

the distribution of wheat was very uniform throughout the county. Wheat was, of course, the source of bread, the staple food, and the economic conditions of the time, which were characterized by a dearth of supplies and by high prices, put a premium on wheat cultivation. The widespread distribution of this crop was therefore not surprising.

The trend to bring in more land for wheat cultivation was particularly in evidence in the Levels, an area of overwhelmingly pastoral interest. The incumbent of Locking (162) wrote, "An enclosure of Moorlands took place in the last year which greatly increased the number of acres of wheat, before there was not sufficient for the consumption of the parish." In Yatton (284) it was said that production "considerably exceeded that of any former year, much more land having been broken up in consequence of the times"; and in Meare (172) the churchwardens said that the wheat in the newly reclaimed and drained lands was "prolific . . . as was never known before in the memory of the oldest man". Further afield at Ashill (2), on the edge of Neroche Forest, the vicar noted the presence of 2,500 acres in the forest which were "generally thinly stocked . . . but . . . capable of bearing as (much) corn as any ground in the county".

The amount of land under wheat in 1801 appears to bear an inverse relationship to the amount of rainfall, and the annual rainfall in Somerset is closely associated with relief. The upland areas lying between Exmoor and the Blackdown Hills receive precipitation of over 40 inches per annum, which rises to 80 inches in places in Exmoor, and this area has the least amount of land under wheat, many parishes having values of only between 12 and 25 per cent of the cropland (represented on Fig. 2 by black segments of from 44° to 90°). The same can be said for the values recorded for the Mendip Hills where rainfall is between 40 and 50 inches annually. But the proportion of wheat increases markedly to between 25 and 50 per cent of the cropland as one moves away from the Western Hills and into the Vale of Taunton Deane, the lowland valley between Watchet and Taunton, and the southern and eastern portion of the county where the rainfall is under 40 inches; the proportion diminishes slightly only where the rainfall increases in a small pocket in the hills near Crewkerne. The other major areas having low rainfall are the Levels, with under 30 inches, and the north-eastern corner of the county with between 30 and 35 inches; in both of these areas the proportion of wheat in the total area of cropland rises to between 50 and 60 per cent of the cropland.

There were some minor exceptions to this general pattern which were mainly related to soil conditions: for example, the three settlements of Westonzoyland, Othery, and Middlezoy are in an area with an annual rainfall of below 30 inches, yet wheat values are between 33 and 44 per cent of the cropland. These low values can only be explained by the loamy soils which overlay the very freely draining Burtle Beds, a type of soil condition to which wheat was not well adapted.

BARLEY (Fig. 3)

The low values in the Western and Mendip Hills show clearly that barley was also influenced by annual rainfall amounts, but there was no clear correlation with areas of little rainfall, such as in the Levels. However, the ability of barley to mature in a shorter period than wheat made it a strong competitor in the moderately wetter parts of the county, particularly along the north-west coast between Selworthy, Dunster, Williton and Watchet, and to a lesser extent in the Vale of Taunton Deane and on the edges of

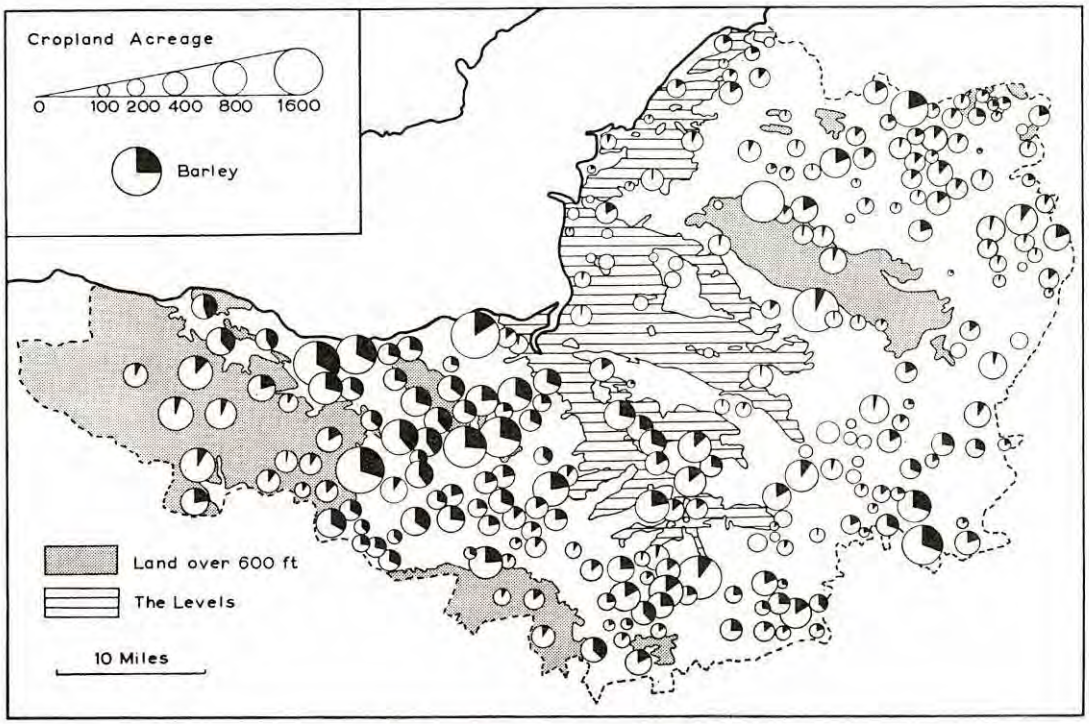

FIG. 3 The distribution of barley.

the Quantock Hills, where wheat was being grown under environmental conditions which were not altogether suited to its specific requirements. Other factors also entered into the distribution of barley, particularly its intolerance of heavy clay soils, which accounts for its almost total absence in the Levels, especially on the stiff Wentlloog Clays of the coastal regions; in the alluvially-covered upper parts of the valleys of the Rivers Parrett, Yeo, Cary and Brue; and where these rivers cross the cold, heavy clay soils of the Evesham and Tripp series, which extend along the northern edges of the Polden Hills and the upland areas immediately to the east of them, around Babcary, Keinton Mandeville, West Lydford and Ilchester.[22] The presence of these heavy soil types is clearly reflected in the low values and the empty circles on the map in these areas.

In the drier north-eastern portions of the county, barley suffered stiff competition from wheat, which accounted for between 50 to 60 per cent of the cropland. Barley is, therefore, not well represented here.

OATS (Fig. 4)

Barley, apart from its dislike of very heavy soils, is more tolerant than wheat of climatic conditions of wetness and a shorter growing season, thus tending to replace wheat in the agriculturally poorer lowland areas of Somerset. Oats, however, was far

[22] See B. W. Avery, *The Soils of the Glastonbury District of Somerset. Memoirs of the Soil Survey of Great Britain* (H.M.S.O., London, 1955), 47-50.

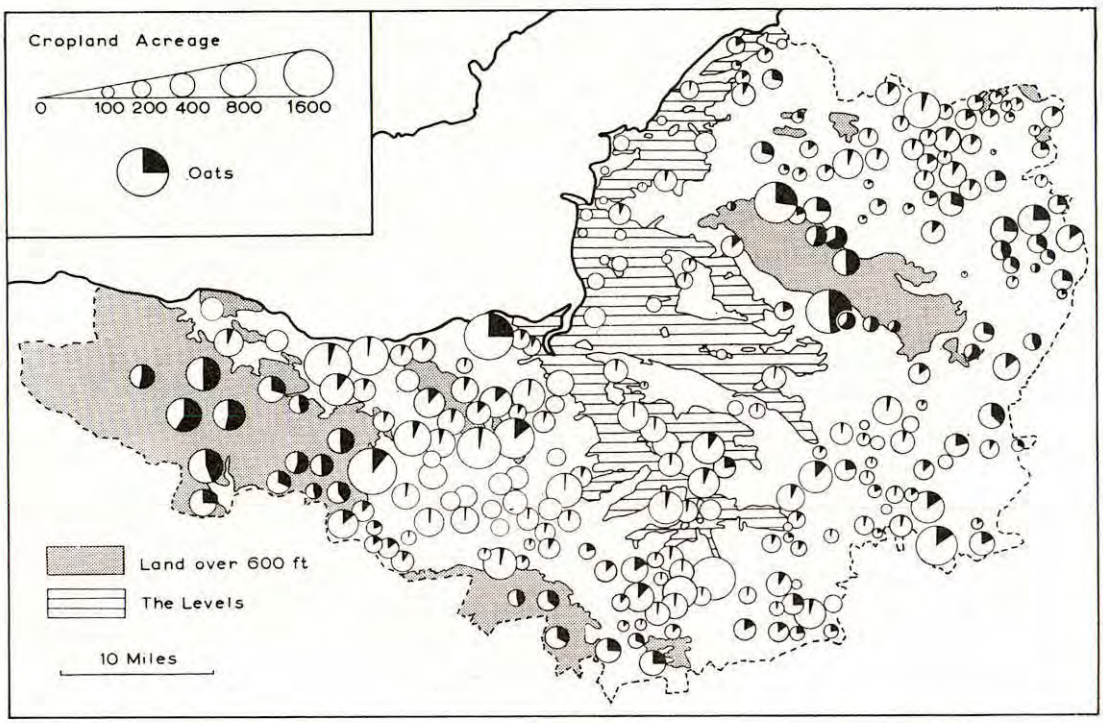

FIG. 4 The distribution of oats.

better suited than either barley or wheat for growth in areas of heavy rainfall, and therefore replaced wheat and barley in areas where the growing season was too short or too cold. There were concentrations of oats with values of up to 50 per cent and more of the cropland, in the Western Hills, the Blackdown Hills, and the high Mendip plateau.

The concentration of up to about 25 per cent of the cropland in oats in the eastern margins of the county is difficult to explain, especially as these were areas of high wheat values. One can only point out that this is a zone of extreme lithological, and hence soil, variation, the whole series of strata of the Upper Cretaceous and Jurassic occurring in the space of 10 to 12 miles and running north-south in a belt along the eastern border area. This suggests that there were presumably areas of poor soil in every parish, less suitable for wheat but satisfactory for oats.

TURNIPS AND RAPE (Fig. 5)

Turnips and Rape were more often than not returned together and therefore must be considered as one. The new crops were the spearheads of the "new husbandry" that was sweeping the east of England and the Midlands, and it would be reasonable to expect the more progressive eastern and northern parts of the county to show the largest areas under this crop. Yet, the opposite is true, and with the exception of the returns in places like Brislington, Compton Martin, Charlton Horethorne, Milborne Port and Corton

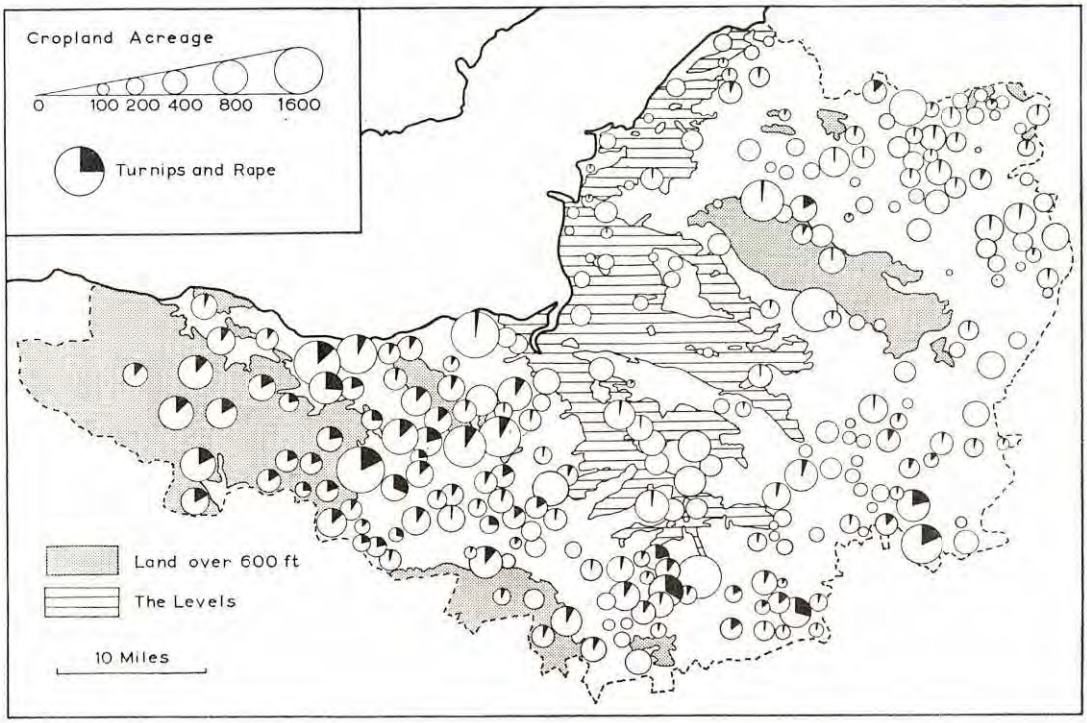

FIG. 5 The distribution of turnips and rape.

Denham, the entire eastern half of the county shows very little land under either crop. This absence of turnips or rape was particularly true in the Levels where the vicar of Banwell (18) found only a few plots "about in sundry places", and the incumbent of East Brent (38) said, contemptuously, "We have natural grass enough for our stock without sowing artificial seeds". Within fifty years, however, the popularity of root crops was to increase enormously even in the Levels, and Acland noted in 1851 that "the degenerate days of mangold-wurzle and swede turnip have made great changes in the marsh aristocracy", that is to say, the wealthy graziers of the Levels.[23] It is obvious that there was a considerable prejudice against these crops in some places; for instance the vicar of High Ham (135) said that none had been in cultivation since the enclosure of the open fields had taken place in 1797, and added, "occupiers are quite fearful of trying for them".

But for all this, turnips and rape were grown, the principal concentration being to the north and west of Taunton in the well developed tilth of the Vale of Taunton Deane, and in the lowland of the faulted corridor between the Exmoor mass and the Quantocks. They were also concentrated in the valley of the Exe, and its tributaries the Barle and Quarme, which cut deeply into the western hills, but the ecological conditions favouring

[23] T. D. Acland, "On the Farming of Somersetshire", *Journ. Royal Agric. Soc. of England*, **11** (London, 1850), 666; reprinted the following year with an essay by William Sturge and entitled *The Farming of Somersetshire* (London, 1851) from which this quotation is taken (p. 52).

the crops in this latter district are hard to ascertain, and remain something of a mystery. The whole question of the distribution of turnips and rape will become clearer when the returns for the surrounding counties are analysed.

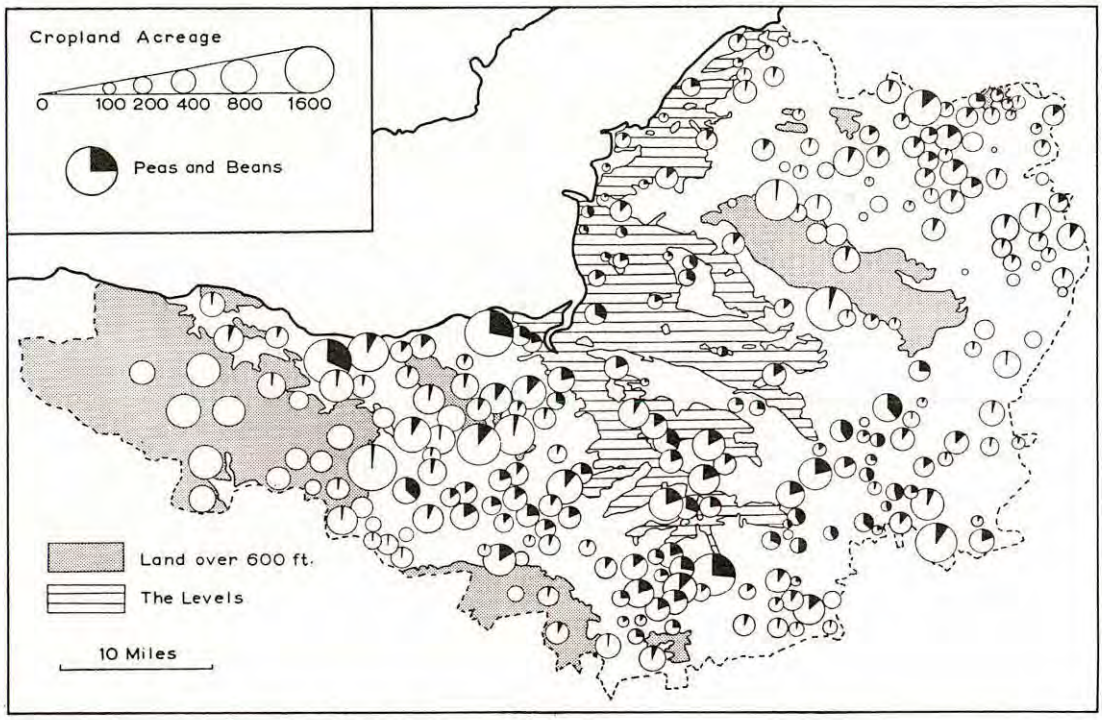

FIG. 6 The distribution of peas and beans.

PEAS AND BEANS (Fig. 6)

The two pulses, peas and beans, were the other major field crops at the beginning of the nineteenth century, and these have been plotted together in Fig. 6. It is a little misleading to plot these two crops together as they have different growth habits; peas are a hardy crop, capable of withstanding low temperatures, but need bright, dry, summery conditions when nearer to maturity, and are best adapted to well drained soils; beans on the other hand are more sensitive to extremes of temperature, need plenty of water, and tolerate much heavier soils than do peas. Nevertheless, the amounts recorded under each heading are very small, and they have been combined in Fig. 6 for the sake of clarity and convenience.

Generally speaking, beans predominated in the areas of moist climate and heavy soils in Somerset, particularly in the Levels, the Polden Hills, around Somerton, and in the upper valleys of the Isle and Parrett Rivers. Sometimes peas predominated, as in the drier north-eastern portions of the county. Both avoided the high rainfall zones of the Western Hills and Mendip Hills. (See Figs. 7 and 8 for a clearer picture of the pea-bean distribution.) But the remarkable thing about both crops is that they were, more often than not, part of a time-honoured rotation that was practised in the open

fields of the county, and the relationship between major concentrations of these crops and the surviving, or but recently enclosed open fields, particularly within a radius of about 10 miles from High Ham, is very noticeable.

CROP COMPETITION

To examine the distribution of the individual crops in 1801 is necessary and fruitful in results, but such treatment does isolate one crop from the next, whereas we know well that crops are grown in combination as part of a rotation system. In a sense, each crop is in competition with other crops and the competitive strength of crops is an important aspect of agriculture. The simplest method of analysing the relationships (bearing in mind the difficulties of the source material) is to rank the crops in each parish by decreasing acreage and show the distribution of the first, second, and third ranking crops, as is done in Figs. 7, 8 and 9, by non-quantitative geometrical symbols. This information then furnishes us with the basis of Fig. 10, which is a combination of all information in a single map of dominant crop combinations.

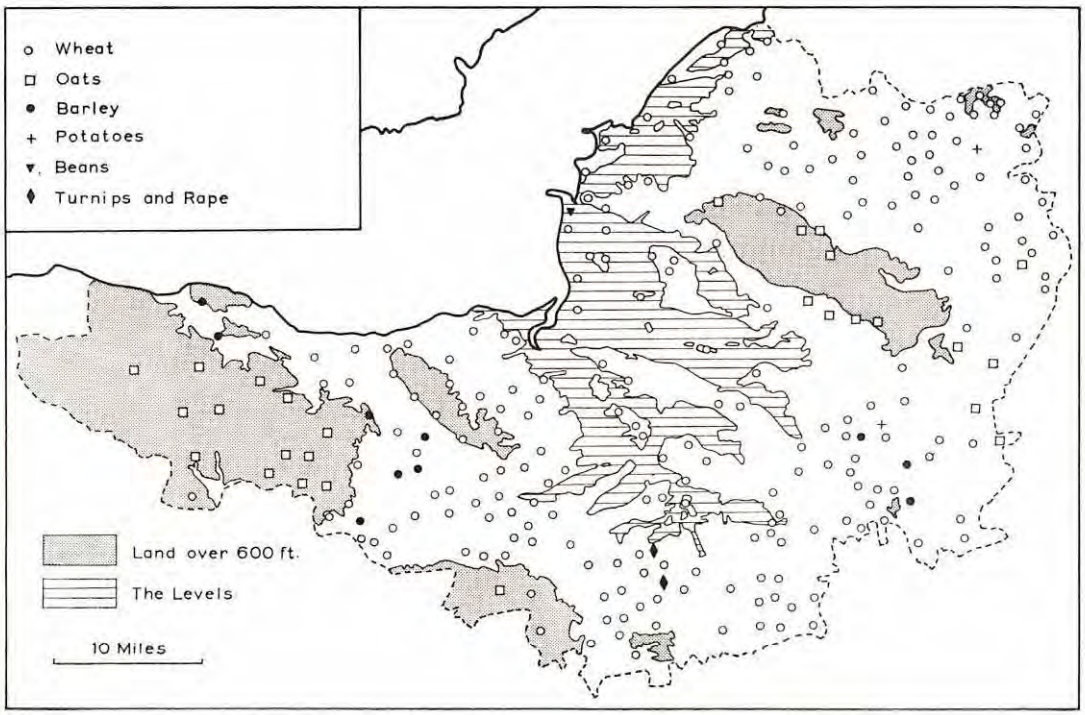

FIG. 7 First ranking crops.

FIRST RANKING CROPS (Fig. 7)

The widespread dominance of wheat as the first ranking crop is scarcely surprising and only in 42 out of 267 parishes did a different crop rank above wheat — 10 had barley, 27 oats, 2 turnips and rape, 2 potatoes and 1 beans. Only five parishes did not

have a grain crop in first place. Oats predominated in two well-defined upland regions of high rainfall, the Western and Mendip Hills, and barley tended to fringe the margins of the Western Hills.

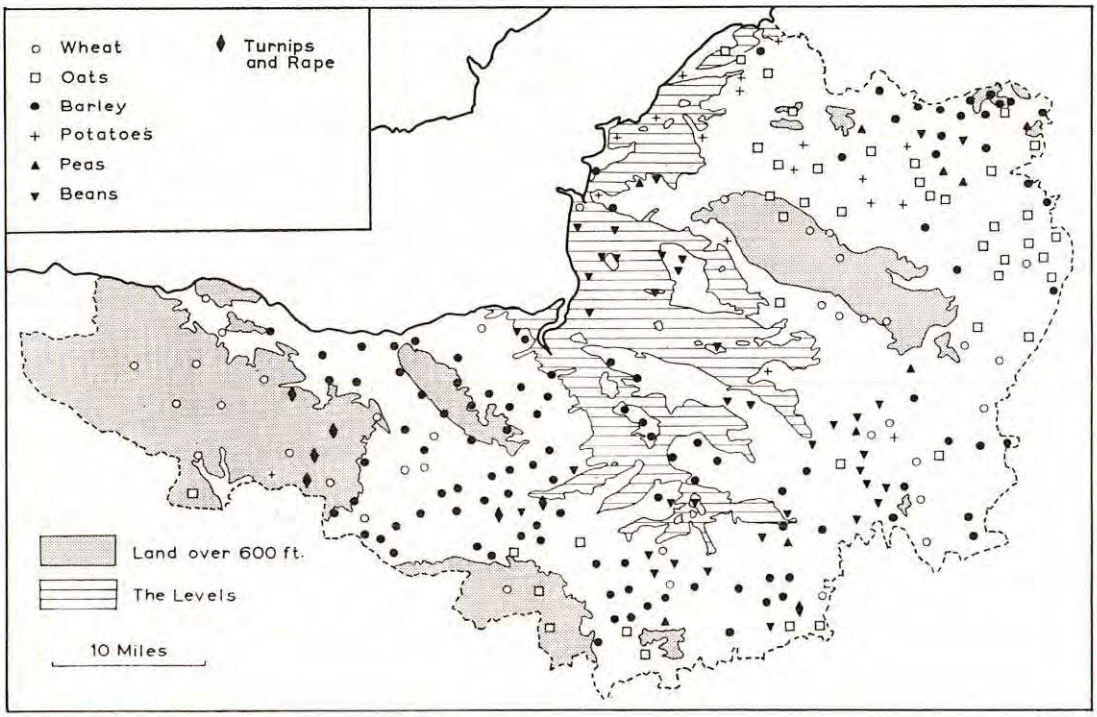

FIG. 8 Second ranking crops.

SECOND RANKING CROPS (Fig. 8)

Fig. 8, which shows the distribution of crops ranking second, has a much greater diversity than the map showing crops of first ranking importance, yet for all that variation, the second ranking crops do fall into fairly distinct groups. The importance of wheat is emphasized yet again by the fact that, of the 42 parishes which did not have wheat in Fig. 7 (First Ranking Crops), 36 have that cereal in the second rank. Therefore, wheat had a marked concentration in the Western and Mendip Hills; contemporary economic conditions were obviously stimulating its cultivation in markedly marginal areas.

A line drawn along the crest of the Polden Hills and continued south-eastwards, divides the distribution of the remaining second ranking crops into two broad zones. To the south and west, barley predominates, the only exceptions being wheat in the Western Hills, as noted before, a thin zone of oats along the southern county border, which reflects the higher rainfall and broken nature of the country there, and a small, but clearly marked, pocket of turnips and rape in the Exe Valley, the reason for which is not clear. The heavy, poorly drained clays of the upper portions of the Isle, Parrett

and Yeo valleys are marked by a concentration of beans which tolerated the moist conditions of these soils.

North of the Polden Hills axis, there were again some clearly defined zones of second ranking crops; there is, for example, the complete dominance of beans in the moist environment of the Levels south of the Mendip Hills, a dominance which is replaced by potatoes in the northern Levels. In the Mendip Hills themselves, wheat is predominant, but as one moves north and west into areas of lower rainfall, a gradual, but perceptible transition takes place, as wheat gives way to oats mingled with potatoes on the agriculturally poorer northern slopes, finally grading through peas and beans to barley.

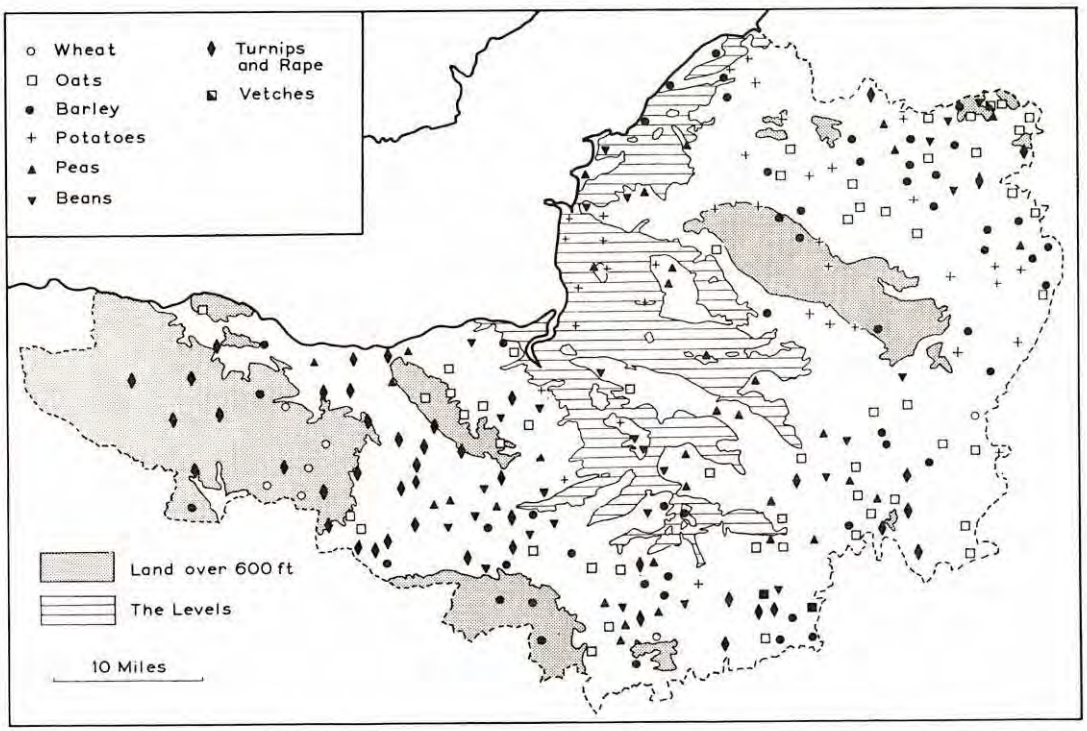

FIG. 9 Third ranking crops.

THIRD RANKING CROPS (Fig. 9)

The relative simplicity of the distribution of the second ranking crops is not matched in the distribution of the third ranking crops. The most clearly defined pattern is that of turnips and rape in the Western Hills and the Vale of Taunton Deane, and of the 43 parishes returning such a crop in third place, 30 were clustered in these areas, the rest of the county having only insignificant amounts, except for the area immediately north of Milborne Port. As a portent of the new husbandry these were significant, but the marked regional concentration hints at the presence of some other important factor (like the need to obtain winter feed in this marginal farming area) that may be explained

only after a closer examination of farming practices here and elsewhere in upland South-Western England.

The zone of turnip and rape cultivation in the Western Hills gradually grades eastwards into one of oats in the Quantock Hills, and one of peas and beans in the southern part of the Vale of Taunton Deane, which then merges into a complicated pattern of crops in the southern and south-eastern upland portions of the county that defies meaningful analysis. Peas and beans were clearly more widespread than the second order distribution would suggest. Generally speaking, in the area to the north of the Mendip Hills, the reverse of the second order distribution takes place; there were oats at the edges of the hills which gave way to barley, which gave way in turn to oats again in the extreme north-east corner of Somerset.

CROP COMBINATIONS

Of the 261 parishes for which Returns are extant, 83 per cent have 12 major combinations and the remaining 17 per cent have 22 crop combinations, which are not differentiated on Fig. 10.[24] This great variety of crop combinations within the relatively small area of one county is a reflection of the lithological, soil and climatic variations within the study area. This variety arises from the fact that Somerset lies astride the junction of part of western upland England, with its ancient geological strata and high rainfall, and part of southern and eastern lowland England with its more recent geological formations and a lower rainfall; the county, therefore, shows the characteristics of both zones. It was little wonder that in giving evidence before the Royal Commission on Agriculture many years later, Mr. W. C. Little said, "Somerset is a county which has every variety; it is almost an epitome of England."[25]

Despite the variety, however, many of the combinations are distributed fairly consistently in well defined regions, particularly those in the upland areas of the Western Hills and Mendip Hills.

In the Western Hills there is a marked concentration of parishes with the combinations WBT, WOT, and WOBT.[26] The WBT parishes become increasingly frequent as one moves westwards across the Vale of Taunton Deane, and at their western extremity the parishes are located in an arc-like zone on the edges of the high ground of the upland mass. As climatic conditions become progressively more severe with increasing altitude, and the soils thinner and less rewarding, so oats replaces barley and wheat as the dominant crop in the core of the upland (see Fig. 7) giving the WOT combination; an intermediate stage located north and south of this core is represented by the WOBT combination, although in these parishes too, oats is markedly dominant, indicating once again the more rigorous conditions of plant growth experienced in the western parts of the county. Billingsley confirmed these crop characteristics: "In the vicinity of these uncultivated hills, viz., at Bicknoller, Elworthy, Brompton-Rolph and Old Cleeve,

[24] The method used for calculating crop combinations in this study follows that of David Thomas in his *Agriculture in Wales During the Napoleonic Wars*, 79-82, which in turn is based on a modification of a method by J. C. Weaver, outlined in his 'Crop Combination Regions in the Middle West'. *Geographical Review*, **44** (1954), 175-200.

[25] Report on Devon, Cornwall, Dorset, and Somerset, Royal Commision on Agriculture, *Brit. Parliament. Paper*, **14** (1882), 423.

[26] W = Wheat, B = Barley, O = Oats, T = Turnips and Rape, Be = Beans, Pe = Peas, Po = Potatoes.

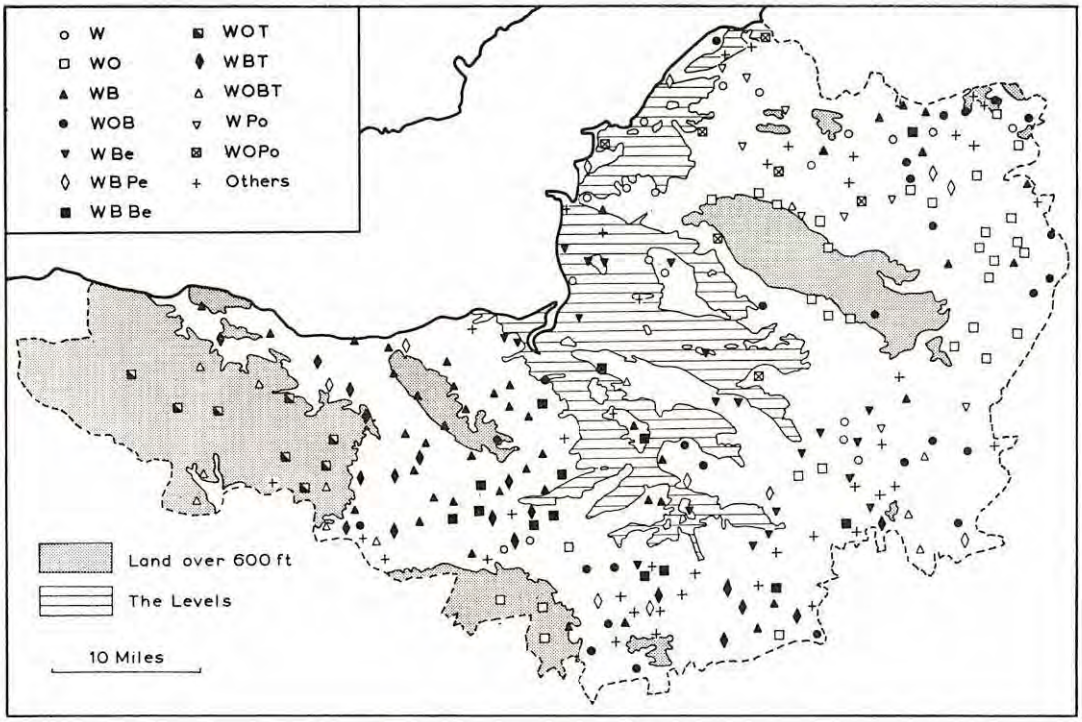

FIG. 10 Crop combination, 1801.
The dominant crops in each parish are shown. Parishes with a WBT index probably followed a Norfolk four-course rotation. The dominant crops are identified by the method used by David Thomas in *Agriculture in Wales during the Napoleonic Wars* (1963).

oats are the principal corn crop; barley and wheat are grown but on a small scale."[27]

The importance of these WBT, WOT, and WOBT parishes is greater than the number would signify because of the presence of second and third ranking turnips or rape. This indicates the progress that turnip husbandry was making in Somerset at this time; particularly as the ecological conditions most suited to turnips, i.e., low rainfall and light soils, were not met with in the Western Hills. Billingsley noted that "turnips are much cultivated", being fed-off generously to sheep in winter.[28] The only other areas with an extensive coverage of turnips were in the extreme south-east of the county, where WOBT parishes are found at Milborne Port, Charlton Horethorne, and Bratton Seymour; and in the south of the county where a line of WBT parishes extends through East Coker, Chiselborough, Seavington St. Mary to the Vale of Taunton Deane. Here, instead of leaving the land fallow after wheat cultivation, turnips were grown and fed-off by stock. "These are enlightened farmers", said Billingsley enthusiastically.[29]

In the other major upland area of the county, the Mendip Hills, WO parishes, with oats ranking first, predominated, and oats were also the main feature of the crop combina-

27 Billingsley *op. cit.* 267.
28 Billingsley *op. cit.* 269. It is also clear from Marshall's remarks in 1796, that turnips had been cultivated fairly widely for some time. See W. Marshall, *op. cit* pp. 186, 187, and 191 for example.
29 Billingsley, *op. cit.*, 219.

tions further east on the oolitic limestone upland of the border area with Wiltshire, which had similar thin soils and lack of water. Previously, a rotation of wheat followed by beans had been common on the carboniferous limestone soils of the Mendip Hills, but this combination had been replaced by one in which oats were the principal spring crop.[30] The same WO combination was found in the higher rainfall and poor soils area of the Blackdown Hills.

Closely associated with the WO crop combination of the Mendip Hills were those parishes to the north and north-west, in the Triassic red soils and the carboniferous limestone outlier near Barrow Gurney, in which potatoes replaced or supplemented oats. Like oats, potatoes have a tolerance of a wide range of soil conditions and flourish best where moisture is abundant, but they need a well drained soil. Billingsley commented on the "rapid extension of cultivation of this root . . . Thirty or forty years ago it was an extraordinary thing to see an acre of potatoes in one spot and in one man's possession; now there are many parishes in this district which produce fifty acres".[31]

At the other extreme from the uplands were the crop combinations of the parishes bordering on or in the Levels. The cultivation of wheat was at a premium so that when the overwhelmingly pastoral lands of the Levels were first broken up for cultivation it was for wheat — hence the distribution of monoculture wheat parishes in the drier northern portions of the Levels. Elsewhere in the Levels WBe parishes predominate, the beans tolerating the moist soil conditions of the clays located on the edges of Levels and in the middle and upper portions of the Yeo, Cary and Brue river valleys.

Surrounding these distinctive regions of the Mendip and Western Hills, and the Levels, were parishes with combinations of crops not characteristic of either upland or extreme lowland areas. By far the most numerous of these were the WB parishes which occupied the prosperous and fertile Vale of Taunton Deane, or surrounded the Quantock Hills; they were also fairly numerous over the drier north-east corner of the county. Closely associated with the WB parishes, and interspread between them were those parishes in which oats, beans and peas were fairly consistently third ranking (see Fig. 9) giving the WOB, WBBe and WBPe combinations; the WBBe and WOB combinations being frequent in the moister western half of the county,[32] and the WBPe being prevalent in the drier eastern and northern portions.

CONCLUSION

Despite the many difficulties of handling the Returns, they have yielded a fairly complete picture of the agriculture and cropping peculiarities of Somerset at the beginning of the 19th century, something which no other source could do so comprehensively. As a source, the 1801 Returns are unique in that they refer to one season, were collected in a short space of time, were standardized in format, and, with the application of special techniques of treatment, are comparable.

30 Billingsley, *op. cit.*, 108-109.
31 Billingsley, *op. cit.*, 115.
32 One of the very few remarks on crop combinations which Marshall makes in his *Rural Economy* is of the WBBe combination with some oats in the "strong soils" of the southern side of the Vale of Taunton Deane. W. Marshall, *op. cit.* 170.

The 1801 Returns are of particular interest in that, firstly, they display the agriculture of the county when "the spirit of improvement was abroad", and that, secondly, they occur at a time when agriculture was still markedly influenced by the physical factors of the county. Figures 2-6 show that, while general political and economic events were encouraging the growth of wheat, it was "the diversity in the ecological requirements of wheat and barley on the one hand, and of oats on the other, which effectively governed the cereal disposition of the grain crops",[33] and the same conclusion can be gained by looking at the importance of all other crops in Figs. 7-9. It was an age before the coming of the railway and the development of road transport, and life was more parochial and self-sufficient; agriculture was more closely related to the environment than it was to be when the next available returns of 1866 enable a picture of the agriculture of the county to be reconstructed.

APPENDIX

IDENTIFICATION AND OMISSIONS

Of the 279 Returns, 18 are not depicted on the maps. Bedminster (27), Goathill (125), Poyntington (205), Sampford Orcas (220), Trent (255), and Tiverton (256) are now outside the county. Charlton Adam (60) and Charlton Mackrell (62) have been grouped together for the purposes of mapping, as have Brockley (42), Chelvey (66) and Nailsea (180). Ilton (145) appears to be a duplicate of Ilton (144) and has therefore been omitted; and the following cannot be plotted as the data are either inaccurate or insufficient, i.e. Bath (17), Bishop's Lydeard (31), West Dowlish (98), Earnshill (111), Frome Selwood (123), Kilmersdon (150), West Monkton (178), and Pensford (197).

Finally, Hardington (128) has been identified as Hardington Mandeville, Bune near Axbridge (48) as Brean, Chelliton (67) as Chillington, Hunington (140) as Hemington, Riston (215) as Ruishton, Tintenhead (253) as Tintinhull, Almsford (6) as Ansford, Alberton (3) as Alverton or Chapel Allerton, Whites near Chard (267) as Whitestaunton, Hazelbeer (132) as Haselbury Plucknett. No. 194 within the "O's" has been identified as Otterford, as it is the only parish beginning with "O" not accounted for.

[33] D. Thomas, "The Acreage Returns of 1801 for the Welsh borderland", *Trans. and Papers of Inst. of Brit. Geographers*, **26** (1959), 182.