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**AGRICULTURAL
HISTORY REVIEW**



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PART I

*

PRINCIPAL CONTENTS

An Agrarian History of England
by H. P. R. FINBERG

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The Statistical Assessment of British Agriculture
by J. T. COPPOCK

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A Review of Balks as Strip Boundaries in the Open Fields
by H. A. BEECHAM

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THE Agricultural History Review

Vol. IV Part I

Edited by H. P. R. FINBERG

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An Agrarian History of England

By H. P. R. FINBERG

AT a meeting held in London on the 14th of January 1956 the foundations were laid of a project which will doubtless be of considerable interest to members of the British Agricultural History Society.

The plan is an ambitious one. It is proposed to compile and publish an Agrarian History of England. The word agrarian is used here in its widest connotation: that is to say, if present intentions are fulfilled, the History will deal not only with arable and pastoral husbandry, but also with the marketing of produce, the distribution of landownership, rural housing, and the structure of rural society. It will be, in short, a complete social and economic history of rural England. And since any division of what is usually called the Highland Zone would probably be found unsatisfactory in the long run, it is likely that Wales too will be included. The theme will be pursued from the beginnings of systematic agriculture in the neolithic period down to whatever date in the twentieth century may be deemed a convenient terminal point.

It is obvious that a History conceived in these terms can only be contemplated as a long-term effort of co-operative scholarship. A minimum of seven volumes will be required, and several years must elapse before the first of them can be ready for the press. Nor can any assurance be felt or given that the volumes will come out in chronological sequence. As the work develops, the seven may easily become ten or twelve. There will be work here for many hands. And even if all the available talent could be mobilized, the attempt to cover so wide a field is bound to reveal serious gaps in our knowledge of the subject. Hence it will not be sufficient to compile a synthesis of existing knowledge. A great deal of new research will have to be undertaken with the set purpose of embodying the results in the finished work. On one point all who have discussed the project are unanimous: if the work is not to be carried out on the highest level of contemporary scholarship, it would be better not to attempt it at all.

How the research is to be organized, and how the undertaking is to be financed, are questions which cannot as yet be answered in detail. But it is thought that a beginning can be made by utilizing resources already in being. Our university departments of history, geography, and economics include appreciable numbers of postgraduate students who look to their supervisors and tutors for guidance in the choice of subjects for research. Here is a potential source of manpower, waiting to be activated in the direction of the History. From this point of view the History may be expected to fulfil the

secondary but valuable function of co-ordinating a great deal of research-work that at present lacks unity of aim.

In the meantime, an Advisory Committee has been set up, with the *doyen* of our agrarian historians, Professor R. H. Tawney, as its chairman.¹ The editor of this REVIEW will be general editor of the History. Particular responsibilities have yet to be allotted; but it may be taken for granted that each volume will require an editor of its own.

The initiative in this project comes from the Department of English Local History in the University College of Leicester. Many members of the British Agricultural History Society will be personally engaged in the enterprise, and all will probably wish to be informed of its progress, for the Society brings together in its membership those historians, economists, and working farmers whose interest in agrarian history is most alert. The pages of this REVIEW, therefore, will naturally reflect from time to time our interest in the project. Indeed, the REVIEW provides an eminently suitable channel of communication, of discussion, and even at times of healthy controversy, between those who will be working on the History. Therefore, without pledging the Society to give more than this degree of moral support, the Executive Committee has agreed that the project is one in which it may appropriately take a sympathetic interest.

¹ The members of the Committee, in alphabetical order, are as follows.

M. W. Beresford, M.A., *Reader in Economic History, University of Leeds*; E. G. Bowen, M.A., *Gregynog Professor of Geography and Anthropology, University College of Wales (Aberystwyth)*; J. D. Chambers, B.A., Ph.D., *Reader in Economic and Social History, University of Nottingham*; H. C. Darby, O.B.E., M.A., Ph.D., *Professor of Geography, University College, London*; H. P. R. Finberg, M.A., F.S.A., *Head of the Department of English Local History, University College, Leicester*; *editor of the Agricultural History Review*; Alexander Hay, *General Secretary of the Association of Agriculture*; J. W. Y. Higgs, M.A., *Lecturer in the History of Agriculture and Keeper of the Museum of English Rural Life, University of Reading*; R. H. Hilton, D.Phil., *Lecturer in History, University of Birmingham*; W. G. Hoskins, M.A., Ph.D., *Reader in Economic History, University of Oxford*; H. C. Pawson, M.B.E., M.Sc., *Professor and Assistant Director of the Department of Agriculture, King's College, Newcastle upon Tyne*; Stuart Piggott, B.Litt., F.B.A., F.S.A., *Abercromby Professor of Prehistoric Archaeology, University of Edinburgh*; M. M. Postan, M.Sc., M.A., *Professor of Economic History, University of Cambridge*; *editor of the Economic History Review*; C. E. Stevens, M.A., B.Litt., *Fellow of Magdalen College, and Lecturer in Ancient History, University of Oxford*; R. H. Tawney, Litt.D., F.B.A., *Professor Emeritus of Economic History, University of London*; (Mrs) I. Joan Thirsk, B.A., Ph.D., *Senior Research Fellow in Agrarian History, University College, Leicester*; Edgar Thomas, B.Litt., B.Sc., *Professor of Agricultural Economics, University of Reading*; Sir James A. Scott Watson, C.B.E., LL.D., D.Sc., *President of the British Agricultural History Society*; *formerly Chief Scientific and Agricultural Adviser to the Ministry of Agriculture and Fisheries*; Edith H. Whetham, M.A., *Gilbey Lecturer in Agricultural Economics and History, University of Cambridge*; David Williams, M.A., *Sir John Williams Professor of Welsh History, University College of Wales (Aberystwyth)*.

The Statistical Assessment of British Agriculture

By J. T. COPPOCK¹

INTRODUCTION

“ENGLAND is fertile in paradoxes, and not the least of them is the fact that the most difficult thing of all others to ascertain is that which is done in this land of liberty, of general curiosity, and extensive information in the face of nature and under the light of the sun . . . nobody knows, even in the most summary way, what is doing on the thousands of acres spread before his eyes in any landscape of ordinary extent, much less in the county or in the country at large.” So wrote *The Times* in a leader on the 18th of June 1867. The comment might more justifiably have been made two years earlier, for the occasion on which it was made was the collection of agricultural returns for the second year running, the numbers of livestock and the acreages of different crops having been collected from every county in Great Britain for the first time in 1866. These returns, which have been made in each succeeding year, form a body of source material for the study of agricultural change which lies virtually unexploited. Its importance is enhanced by the fact that the estate accounts, inventories, and surveys which are so valuable a source for earlier periods are at once less numerous and less detailed for the latter part of the nineteenth century. This is in part due to the fact that such material has not yet come to light; but it is primarily due both to the break-up of many estates and the loss and destruction of their records, and to the assumption by the State of the rôle of agricultural pioneer formerly played by landlords, whose powers to determine the agricultural character of their estates have dwindled ever since the Agricultural Holdings Act of 1875.

The original returns compiled by farmers are no longer extant, with the exception of some of recent date which are confidential, but parish summaries are available for nearly all years for every part of Great Britain.² While

¹ The study on which this paper is based was made possible by a grant from the Central Research Fund of the University of London.

² The parish summaries for England and Wales are held by the Collection of Statistics Branch, Ministry of Agriculture, Fisheries, and Food, Lytham St Anne's; those for Scotland prior to 1912 are in the Scottish Record Office, the later returns being held by the Department of Agriculture for Scotland. English and Welsh summaries are missing for all counties for 1868, 1871, 1872, 1892, 1893, and for some counties for other years; Scottish summaries are missing for 1868, 1871, 1872, 1873, and 1876.

less satisfactory than the records of individual farms would have been, these parish summaries provide a wealth of detail which is not available for any previous period for so extensive an area. Their utilization, and indeed that of the county and national figures also, demands some appreciation of their origins and of the way in which they were compiled. This paper reviews these origins and examines the development of the returns in the period from 1866 to 1914.

THE ORIGIN OF THE RETURNS

Three conditions had to be satisfied before agricultural returns could be successfully collected: the Government had first to be convinced of the usefulness of such information, a satisfactory means of collection had then to be found, and finally opposition on the part of landlords and farmers had to be overcome. In the development of the collection of returns the fulfilment of these three conditions did not take place by chronologically distinct stages; the need for the collection of statistics was only half-heartedly accepted by governments, the problem of finding adequate machinery bedevilled each of the various attempts made to collect returns, while opposition to their collection was manifest from the beginning. No doubt had there been a strong incentive to collect statistics means would have been found and opposition overcome; as it was, the success of the 1866 experiment, undertaken as it had been in a spirit of grudging acceptance, was ensured by the occurrence of a natural calamity, the cattle plague of 1865, which provided that incentive.

REAWAKENING INTEREST

The efforts to collect agricultural statistics, which had been made during the Napoleonic Wars through the agency of the parish clergy, were not immediately followed by any further attempt, and little interest seems to have been shown for over twenty years.¹ In the 1830's, however, discussion and experiment were resumed as part of the growing concern with the collection of statistics of all kinds. The change is well seen in the difference between the minutes of evidence of the Select Committees on Agricultural Distress in 1821, 1822, and even of that on Agriculture in 1833, and those of the Select Committee on Agricultural Distress in 1836;² in the former there is no mention of agricultural statistics, but in the latter numerous questions on the desirability of their collection drew frequent support from witnesses, one of

¹ H. O. Henderson, 'Agriculture in England and Wales in 1801', *Geographical Journal*, cxviii, 1952, pp. 338-45, and W. E. Minchinton, 'Agricultural Returns and the Government during the Napoleonic Wars', *Agricultural History Review*, 1, 1953, pp. 29-43.

² Parliamentary Papers, ix, 1821; v, 1822; vi, 1833.

whom testified that he could "not conceive a duty more imperative upon the Government than that of ascertaining the quantity of food that the people are likely to be supplied with."¹

The first indication that the question of collecting agricultural returns was arousing official concern is to be found in a letter from the Board of Trade to the Treasury, dated 31 March 1832, in which permission was sought to establish a statistical branch;² the letter noted the difficulty of obtaining accurate estimates of agricultural produce and thought information might be collected by the machinery used for the enumeration of population. The Statistical Department of the Board of Trade was founded in that year, and the question was reported to be under consideration by Lord Auckland, the President of the Board of Trade.³

Growing public interest in the collection of statistics was epitomized by the foundation of the Statistical Society in 1834, and it was among statisticians rather than among agriculturalists that the revival of interest in agricultural statistics was first manifest. This fact is emphasized by the contrast between the *Journal* of the Statistical Society, in which there are a number of articles describing attempts to collect agricultural statistics, and the *Journal* of the Royal Agricultural Society, started only one year later in 1839, in which no mention of agricultural statistics occurs before 1855.⁴ Emphasis in these articles in the *Statistical Journal* was laid on the statistical merits of, rather than the agricultural benefits to be derived from, such schemes as they describe.

A link between public and official interest was provided in the person of G. R. Porter, Head of the Statistical Department of the Board of Trade and Treasurer of the Statistical Society. In a paper read to the British Association in 1838 he made a cogent plea for the collection of agricultural statistics; he pointed to the backward position of Britain compared with other European countries where such information was regularly collected, and suggested that ignorance of the produce of our fields was an important reason for the fluctuation in agricultural prices. He thought that farmer and community

¹ *Report from the Select Committee appointed to inquire into the State of Agriculture*.—House of Commons, Sessional Papers, 1836, VIII (i and ii), (79, 189, 465), Questions 5002, 6318, 6971-6, 7217-8, 8167-75, 8746-50, 13527-9, 13560-4.

² P.R.O., B.T. 24/1, p. 2.

³ *Report from the Select Committee of the House of Lords appointed to inquire into the best mode of obtaining Accurate Agricultural Statistics from all Parts of the United Kingdom*.—House of Commons, Sessional Papers, 1854-5, VIII (501), hereafter referred to as the Lords' Committee, Question 900, evidence of E. A. Bowring.

⁴ C. Wren Hoskyns, 'On Agricultural Statistics', *Journal of the Royal Agricultural Society*, Series I, XVI, 1855, pp. 554-606.

alike would benefit from the collection of returns, which he estimated would cost between £20,000 and £30,000 per annum.¹

FURTHER EXPERIMENTS

Official interest was translated into action in 1836, when the President of the Board of Trade, possibly with the 1801 returns in mind, addressed a letter to the parish clergy in Bedfordshire, requesting them in the public interest to supply answers to a questionnaire about the agriculture of their parishes in May of the preceding year.² Fifty-two questions were asked, covering the acreage of the parish, the number of farms and the type of tenure, the nature of the soil and its drainage, the acreage of crops grown, their yields, the rotation followed, the number of livestock and the quantity of livestock products, the extent and composition of woods and plantations, and the level of agricultural wages. The very complexity of the questionnaire may have caused the failure of the experiment, for only twenty-seven of the 126 parishes made returns, and not all these were complete. The failure was unfortunate, since it had been the intention to extend the enquiry elsewhere if the experiment had been successful.³

In 1844 the question was raised for the first time in Parliament, when Milner Gibson moved a motion in favour of the collection of statistics.⁴ Gladstone, the President of the Board of Trade, affirmed the Government's interest, and said that they had tried several means but had been frustrated by their failure to find any adequate machinery. When the matter was raised the following year, Gladstone reiterated the difficulty of finding suitable machinery for collection, and said that they had considered "every class of officer who was *prima facie* capable of undertaking the task—the tax-collector, parochial officer, overseer, churchwarden, Excise officer, in fact every class of public functionary." Opinion was generally in favour of collection, only one member protesting against "these dictatorial attempts . . . to invade the sacredness of private property," and the Prime Minister, while suggesting that the matter was best left with the Government, undertook to lend any

¹ G. R. Porter, 'Suggestions in Favour of the Systematic Collection of the Statistics of Agriculture', *Journal of the Statistical Society of London*, II, 1839, pp. 291-6.

² Lord's Committee, evidence of E. A. Bowring, who suggested that Bedfordshire was chosen because it headed the alphabetical list of counties.

³ House of Commons, Sessional Papers, 1844, XLV (177), pp. 1-6. Also reproduced in 'Agricultural Returns of Bedfordshire', *Journal of the Statistical Society of London*, I, 1838, pp. 89-96.

⁴ *Parliamentary Debates*, LXXIV, 1844, p. 91; his reference to the report of 1816 is clearly a misprint for 1836.

weight it possessed or to apply any machinery it could command to secure the object.¹

Parliamentary interest and the numerous communications it had received led the Board of Trade in 1844 to approach the Poor Law Board, to see if the machinery of local administration which the latter provided could not be used to obtain returns.² It was proposed that further experiments be tried and that these should be limited to securing the acreage of wheat, barley, oats, rye, peas, and beans, "to ensure a reasonable chance of success." The Poor Law Commissioners, whose views were sought, suggested that the success of the experiments would depend on the view taken by the Guardians, the majority of whom were farmers and landowners; it was most important, therefore, that they be convinced that the object was not fiscal, and that the collection would not be a charge on the local rates. As the Commissioners had no power to require information, they doubted whether it would be possible to collect complete returns.

Nevertheless, it was decided to proceed with further experiments, and in England and Scotland these were made in the harvest year 1844-5.³ Much additional information was recorded, the acreages of many other crops, of grass, of woods, and of waste, and the numbers of different kinds of livestock also being collected. In Ireland the returns were collected in 1845, but here no livestock was enumerated, the list of crops was slightly different, and the acreage of bog was separately distinguished. Two Poor Law Unions, Basingstoke and Hartley Wintney in Hampshire, were chosen in England where the returns were collected through the Boards of Guardians. In Scotland and Ireland other agencies had to be used: in the county of Midlothian village schoolmasters collected the returns, and in the Bailieborough Union in County Cavan a private individual. The English experiment was only partially successful, no returns being received from the Basingstoke Union and only incomplete returns from Hartley Wintney; the Scottish and Irish returns, however, were completely satisfactory. This contrast, shown for the first time, between the ease with which Irish and Scottish statistics were collected and the difficulty of obtaining returns from English, and especially Southern

¹ *Parliamentary Debates*, LXXXIX, 1845, pp. 367-74.

² *Correspondence between the Board of Trade and other Public Departments relative to Agricultural Statistics*.—House of Commons, Sessional Papers, 1845, XLVI (265), pp. 1-4. The original correspondence is in P.R.O., HO 45, Regd. Papers, 824.

³ *Summary of the Results of the Experiment which was tried under the direction of the Lords of the Committee of the Privy Council for Trade in the years 1845 and 1846 to obtain Agricultural Statistics in the Unions of Basingstoke and Hartley Wintney, in England, the county of Midlothian, in Scotland, and the Bailieborough Union in Ireland*.—House of Commons, Sessional Papers, 1847, LIX (468), pp. 1-9.

English, farmers, was to characterize all subsequent attempts to collect agricultural statistics.

So far the various attempts had made use of existing administrative machinery; but in March 1847 the President of the Board of Trade introduced "a Bill to make provision for the collection of agricultural statistics in England and Wales." It was proposed that the Superintending Registrars of Births, Deaths, and Marriages should appoint agricultural enumerators in their districts, and that these should send on the 1st of June each year to every occupier of more than three acres a schedule on which the acreages of crops and numbers of livestock were to be returned within fourteen days. The crops chosen were almost identical with those of the 1845 experiment, but the classes of livestock were very different. Penalties were proposed for neglecting to make a return or for making false statements. But the Bill never received a second reading, largely as a result of the unwillingness of the Chancellor of the Exchequer to defray the estimated cost of £30,000—£40,000.¹

In the same year, however, administrative action did secure the collection of returns in Ireland. Here, in contrast to England, there was both a strong incentive and suitable machinery; there was also an absence of any class of large farmers who could effectively oppose the measure. The incentive was the risk of famine, and the Lord Lieutenant, Lord Clarendon, expressed to the Treasury his strong feelings about the need for accurate statistics. He called for Treasury sanction for the expenditure of up to £4,000 on their collection.² The returns were collected by the constabulary, an established and centrally controlled body; they were voluntary and covered both livestock and crops.³ The success of the enterprise was undoubtedly due in part to its supervision by Captain Larcom, of the Royal Engineers, who had already had considerable experience of the collection of statistics, and had been responsible for the inclusion of much agricultural information in the Irish Census of 1841. The returns continued to be collected annually by the constabulary, though responsibility was transferred to the Registrar General in 1853. At first they met with some hostility owing to the belief that they were connected with new taxation; but the existence of an obvious need and of

¹ House of Commons, Sessional Papers, 1847, Public Bills, 1, p. 1; *Parliamentary Debates*, xc, 1847, p. 1099; xcvi, 1848, p. 540.

² *Return of the Particulars of the manner in which 2,000 l. was expended in obtaining Statistical Information relative to the Agricultural Produce of Ireland; and a copy of the order under which the Inquiry is conducted.*—House of Commons, Sessional Papers, 1852, XLVII (491-1), pp. 1-2.

³ Details of the method of collection are given in *Returns of Agricultural Produce in Ireland in the year 1847*, pp. 1-6. House of Commons, Sessional Papers, 1847-8, LVII (923).

efficient machinery ensured collection without much difficulty, and opposition greatly decreased in the next few years.¹

CONTRASTS IN ENGLAND AND SCOTLAND

The hope of the *Economist* that "so useful an example as has been set by the Irish Government may soon be followed as regards England and Scotland" was, however, only partially fulfilled.² Nineteen years were to elapse before the regular collection of statistics was begun in either country; but in Scotland, through the enterprise of the Highland and Agricultural Society, statistics for the whole country were obtained for each of the years 1854-7. The Society had first approached the Government on this matter in 1847, and representatives had had an unofficial meeting with the Vice-President of the Board of Trade. In 1849 the East of Berwickshire Farmers' Club had again demonstrated the possibility of collecting statistics in Scotland, and when the Society once more approached the Board of Trade in 1852, it secured Treasury support for the collection of agricultural statistics in 1853 in the three counties of Haddington, Roxburgh, and Sutherland. The acreages of various crops and of grass were collected, as well as those of sheep walks, of houses and gardens, of woods and waste, while the numbers of different classes of livestock, including for the first time horses, were also ascertained. Collection was made in May through the agency of enumerators, who delivered, collected, and checked the returns, which were then consolidated by the Secretary of the Society by districts, comprising several parishes with similar agricultural conditions.³ Estimates of the yields of wheat, barley, oats, beans and peas, potatoes, turnips, turnip seed, mangolds, and carrots were also made in each district by committees consisting of the enumerator and prominent farmers.⁴ The experiment was highly successful, and only three persons failed to make returns.⁵

In England the Royal Agricultural Society played no comparable rôle, though a deputation from it was reported to have waited on the Prime Mini-

¹ Lords' Committee, evidence of W. Donnelly, Questions 465, 483, and 486.

² VI (9 September 1848), p. 1019.

³ Lords' Committee, evidence of E. A. Bowring, Question 909; evidence of Hall Maxwell, Questions 3 and 5.

⁴ *Copy of a letter from the Secretary to the Highland and Agricultural Society of Scotland to the Board of Trade, transmitting Estimate of Crops in the Counties of Roxburgh, Haddington, and Sutherland, in the Year 1853.*—House of Commons, Sessional Papers, 1854, LIX, p. 1.

⁵ *Copy of a letter addressed to the Board of Trade by the Secretary of the Highland and Agricultural Society of Scotland, transmitting Abstract of Returns of the Agricultural Statistics of the Counties of Roxburgh, Haddington, and Sutherland.*—House of Commons, Sessional Papers, 1852-3, CI (917), p. 1. Particulars of these three holdings were in fact, supplied by the enumerators.

ster, probably in the 1840's, to press the question of agricultural statistics, and it joined with the Highland Society in a deputation to the Government in 1853.¹ However, the Government decided to make a further experiment in the late autumn of 1853, using official machinery and confining the information to be collected to acreages and numbers of livestock. The schedules on which the returns were made were based on those used by the Highland and Agricultural Society, the slight differences reflecting differences in the agriculture of the two countries; thus turnip seed was omitted, hops and chicory were included, and there were differences in the definition of temporary and permanent grass.² Returns were collected from all holdings of two acres and above, the acreages of smaller holdings, of woods, and of commons being supplied from the Rate Books. Two counties, Norfolk and Hampshire, where it was thought that chances of success were greatest, were chosen. Boards of Guardians again supplied the machinery of collection; statistical committees were set up in each Union, and generally the Clerk acted as classifier and the relieving officers as enumerators. In Norfolk three Unions declined to co-operate, and there was considerable opposition in others, particularly from the Fen border parishes of the Thetford and Downham Unions. Nevertheless, the energy of the Poor Law Inspector responsible, Sir John Walsham, secured returns from all but $2\frac{3}{4}$ per cent of occupiers, though some of the returns were "incomplete" or "imperfect." In Hampshire, too, although "the zealous hostility of some opponents" created "great subsequent difficulties," returns were obtained from 92 per cent of occupiers, or $96\frac{1}{2}$ per cent if the Isle of Wight, where most of the opposition was concentrated, was excluded.³

The success of these two experiments encouraged the Board of Trade to try a more extended experiment in 1854, using the same machinery, and a sum of £13,000 was voted for this purpose.⁴ In England, Hampshire and Norfolk were again chosen, together with Berkshire, Leicestershire, Shropshire, Suffolk, Wiltshire, Worcestershire, and the West Riding of Yorkshire; two Welsh counties, Denbigh and Brecon, were also selected. In Norfolk and Hampshire estimates of crop yields were to be made by the Statistical Committees, but elsewhere returns were limited to acreages and to numbers of livestock. The items collected were little different from those of the previous

¹ Lords' Committee, evidence of E. A. Bowring, Questions 916 and 917; according to W. Miles, the reason for this inactivity was that the Society was precluded by its charter from discussing controversial political issues (*ibid.*, Questions 805-9).

² Lords' Committee, evidence of Sir John Walsham, Question 157.

³ *Reports of Sir John Walsham and Mr Hawley on the Agricultural Statistics of Norfolk and Hampshire*.—House of Commons, Sessional Papers, 1854, LXV (1761), pp. 1-23.

⁴ *Parliamentary Debates*, cxxv, 1854, p. 1036.

year, but some attempt was made to adopt the same nomenclature in Scotland and England. As in the previous year, the returns were collected in the autumn, though the proposed schedule bore the date 1 July.¹

In Scotland, the Highland and Agricultural Society undertook to secure returns from the whole of Scotland, and nearly 1,100 tenant farmers acted as enumerators and committee members. As some difficulty had been encountered the previous year because of the unwillingness of farmers in certain parts of the country to let neighbours see the details of their crops and stock, occupiers were given the opportunity of sending their returns direct to the Society. Lower limits to the size of holding were introduced, returns being collected only from farmers with a rental of £20 p.a. or more in Highland Districts, or £10 or more in Lowland Districts. The schedules were almost identical with those of the previous year, and estimates of yields were again obtained. Some delay was experienced because of difficulties in procuring accurate lists of occupiers, and collection took place between 1 September and 6 November; nevertheless, the experiment was again highly successful, schedules unreturned amounting to less than 1/5 per cent. As Hall Maxwell, the able Secretary of the Society, reported, "the Scotch farmers, as a body, at once recognized the importance and utility of the measure, and endeavoured to support and forward it by readily and faithfully affording the information required from them."²

The situation in England was very different; for 7 per cent of holdings in the selected counties no return was received, and only the West Riding was considered satisfactory, returns being made for 99·3 per cent of holdings in the western half of the county.³ In Hampshire and Wiltshire, on the other hand, the experiment "had not attained that completeness which renders it serviceable for practical purposes"; five Boards of Guardians refused to co-operate, and no return was made by either occupier or enumerator for 16·7 per cent of holdings. The produce estimates were "even more unsatisfactory" than the acreage returns, and in Norfolk only four Unions supplied estimates.⁴ The President of the Board of Trade reported that the results

¹ *Reports of Poor Law Inspectors on Agricultural Statistics (England) 1854*.—House of Commons, Sessional Papers, 1854-5, LIII (1928).

² *Report of the Highland and Agricultural Society of Scotland to the Board of Trade on the Agricultural Statistics of Scotland for the Year 1854*.—House of Commons, Sessional Papers, 1854-5, XLVII (1876), pp. 3-4. Also Lords' Committee, evidence of Hall Maxwell, Questions 6, 7, 8, 57.

³ J. Lewis, 'On Agricultural Statistics and the Cattle Census', *Journal of the Royal Agricultural Society*, 2nd Series, II, 1866, p. 398; Parliamentary Debates, cxxxviii, 1855, pp. 1782-3; *Reports of Poor Law Inspectors, loc. cit.*, Report of H. B. Farnall, p. 91.

⁴ *Ibid.*, Reports of W. H. T. Hawley, pp. 6, 13; Sir John Walsham, p. 39.

did not justify the Government in following up the plan which had been adopted of further extending the experiment.¹

This failure seems to have been due both to weaknesses in the machinery of collection and to opposition from farmers. It was felt that Boards of Guardians were unsuited for the purpose, which was held to conflict with the duties for which they were appointed. Difficulties were not confined to Guardians, for both Clerks and Relieving Officers felt themselves underpaid, and were sometimes unwilling to assist in the collection of returns; in the Wantage Union, for example, no enumerator could be found in fifteen of the thirty-four parishes. The opposition of farmers was founded both on fear and on principle; some were apprehensive that the information would be used either by landlords against their tenants or by the Government to justify new taxation, while others regarded the returns as inquisitorial and an unwarranted interference in their affairs. Political prejudice was also said to contribute to the hostility. Opposition was widespread; in the Drayton Union, most of the occupiers burnt or otherwise destroyed the schedules left with them, while in the Samford Union opposition was such that the Guardians felt themselves compelled, though reluctantly, to recommend that no further attempt be made to obtain the information required. The accuracy even of some of the returns which were made was suspect; thus, in the Knighton Union, occupiers were said to have understated their stock to avoid the taxation which they feared, while in Worcestershire attention was drawn to the inaccuracy of the Rate Books, on which part of the return was based. Opposition was dramatically epitomized by the Shropshire farmer who returned his blank schedule neatly torn in four pieces with the inscription "The idea of such questions! What next?" None the less, the extent of the opposition can be exaggerated; the more intelligent farmers were said to be in favour, while the proportion of returns received was very comparable with that obtained in 1866. The Poor Law Inspectors who reported on the scheme were generally of the opinion that compulsory powers were necessary, though there were differences of opinion about the suitability of the Poor Law machinery, especially the Boards of Guardians. But although the Poor Law officers were once more suggested as a suitable channel for the collection of returns, no further experiments were undertaken in England and Wales until the collection of the returns was begun in 1866.²

¹ *Parliamentary Debates*, CXXXVIII, 1855, p. 1783.

² *Reports of Poor Law Inspectors*. Reports of W. H. T. Hawley, pp. 6-7, 13; G. Pigott, pp. 56, 57; A. Doyle, pp. 77-8, 79; J. T. Graves, pp. 70, 73; Sir John Walsham, p. 34. See below, p. 18; the 1866 figure of 5½ per cent reflects the good response in the northern counties which were poorly represented in this experiment.

In Scotland, on the other hand, complete and accurate returns continued to be collected until the summer of 1857. In 1855 all schedules were completed, there being only about sixty cases of absolute refusal or opposition, while in 1856 returns were still "very freely made."¹ Duplication of returns had provided some check on their accuracy, but independent confirmation was obtained in 1857 when the crops in the county of Linlithgow were recorded and measured on maps by the Ordnance Survey, the difference between the returns and the computed acreage being only 316 acres out of a total of 25,999.² One fundamental change was made in the schedule in 1855: so much difficulty had been experienced in obtaining the acreages of permanent grass and sheep-walks that it was decided to confine the acreage return to the arable area only.³ Other minor changes were made in the schedule, particularly in the classification of livestock. Unfortunately the collection of returns was not continued beyond 1857. A disagreement arose between the Highland and Agricultural Society and the Treasury, who held that the Society should account for every penny of public money, supporting each item with vouchers, while the Society considered itself to be only the agent of the Board of Trade and not subject to the same standard of accounting as a government department. The Treasury, however, remained adamant, and the Society felt obliged to sever its connections.⁴ As a result continuous records in Scotland date only from 1866, as in England.

THE SEARCH FOR SUITABLE MACHINERY

Attempts to find satisfactory machinery continued. In 1854 a Select Committee of the House of Lords had been appointed to investigate the best way of collecting agricultural statistics, the importance of which "is now so generally admitted."⁵ It reported in favour of the collection both of acreages and numbers of livestock, and of estimates of produce, and thought that the Poor Law machinery should continue to be used, and that the returns should be compulsory. A Bill embodying these recommendations was introduced

¹ *Copy of the Report of the Highland and Agricultural Society to the Board of Trade, on the Agricultural Statistics of Scotland, for the Year 1855.*—House of Commons, Sessional Papers, 1856, LIX (2), p. 2; also *Report to the Board of Trade on the Agricultural Statistics of Scotland for the Year 1856.*—House of Commons, Sessional Papers, 1857, xv, p. 8.

² *Reports to the Board of Trade on the Agricultural Statistics of Scotland for the Year 1857.*—House of Commons, Sessional Papers, 1857-8, LVI, p. 4.

³ *Report on Agricultural Statistics for 1856, loc. cit.*, p. 2.

⁴ *Correspondence relating to the discontinuance by the Highland and Agricultural Society of Scotland of the collection of the Agricultural Statistics of Scotland.*—House of Commons, Sessional Papers, 1857-8, LVI, pp. 1-54.

⁵ Lords' Committee, p. 3.

into the Lords in 1856; it authorized the Poor Law Board to appoint collectors, who would obtain on the 1st of July each year a return of crop acreages and livestock numbers from all holdings of two acres and above, and prescribed penalties for non-compliance; the schedule to be used resembled that used in the extended experiment of 1854. Provision was also made for the appointment of crop estimators. The Bill was passed by the Lords without much opposition; but in the Commons no agreement could be reached, and even many who supported the collection of statistics were unwilling to accept the sanction of compulsion, or doubted the suitability of the Poor Law Board. The Bill was accordingly withdrawn, with the promise of a Select Committee in the following session to re-examine the question.¹

No Select Committee was in fact appointed. But in 1857 a further Bill was introduced by Caird and Garnett. Caird had earlier favoured the appointment of a small number of competent men who would collect acreage returns and make estimates of yields; he had also supported the principle of compulsion.² In his Bill, however, he proposed that the Registrar-General should employ the Superintending Registrars, or other suitable persons, to distribute schedules to all occupiers of two acres or more. The returns were to be collected on 1 June, and were confined to crop acreages, the list of crops being very similar to that prescribed in the previous Bill. The Registrar-General was also to appoint Inspectors of Agricultural Statistics, who would make periodical checks on the accuracy of the returns. Where no returns were made, powers of entry for the purpose of ascertaining the acreages of crops were to be authorized. Opposition was strong, particularly against this last provision; the Bill was said to be inquisitorial and useless, and though Caird offered to amend the offending clause in committee, the Bill failed to get a second reading.³

Official attempts to find suitable machinery for the collection of the returns continued. In May 1861 a circular letter was sent from the Home Office to the Chairmen of Quarter Sessions in England and Wales, suggesting that the constabulary might be used for this purpose, as in Ireland, and asking the opinion of magistrates on the extent of the information to be obtained and the frequency of its collection; a schedule identical with that proposed in Caird's Bill was enclosed with the letter. Only eighteen out of fifty-nine chairmen

¹ House of Commons, Sessional Papers, 1856, Public Bills, I, p. 1; also *Parliamentary Debates*, CXL, 1856, p. 1770; CCLI, 1856, pp. 629-33; CXLII (1856), p. 1771.

² Discussion on paper by L. Levi, 'On the importance of a correct system of Agricultural Statistics', *Journal of the Society of Arts*, II, 1854, p. 337; and Lords' Committee, evidence of James Caird, Question 269.

³ House of Commons, Sessional Papers, 1857, Public Bills, I, p. 27; *Parliamentary Debates*, CXLVII, 1857, pp. 200-1; CXLIX, 1858, pp. 1887-1919.

reported in favour of using the constabulary, though the opposition of the majority was not so much to the idea of statistics as to the suggested machinery of collection. Opposition to the returns themselves was, however, voiced; in Berkshire it was said that the farmers regarded the returns as an interference with their private affairs, while from Gloucestershire the fear was expressed that discrepancies might be revealed between rotations prescribed by leases and those actually followed. The idea of using the constabulary was not, therefore, pursued further.¹

Unofficial attempts to establish the collection of statistics continued. Caird was not deterred by the rejection of his Bill, and in June 1864 he proposed a motion in the Commons, "That in the opinion of this House the collection and early publication of the Agricultural Statistics of Great Britain would be in the Public Interest." Opponents questioned the accuracy and usefulness of such returns as could be collected; other members were sympathetic but doubted the value of an airy motion. Caird, however, was unwilling to withdraw, as he wished to stimulate the Government into action, and his motion was in fact carried against the wishes of the Government. Nine months later he asked whether the Government intended to give effect to the resolution, and was told by the President of the Board of Trade that, while no legislation was to be introduced, a plan had been suggested whereby voluntary returns of the acreage of crops might be obtained. On the 8th of June 1865 a vote of £10,000 to defray the cost was approved.²

THE 1866 RETURNS AND THEIR DEVELOPMENT

It had been intended at first to collect only the acreages of crops.³ But in 1865 there was a severe outbreak of cattle plague, and the Royal Commission which was appointed to investigate it was concerned at the absence of data concerning the numbers of livestock. On 24 October the Secretary of the Royal Commission wrote to the Board of Trade representing "the importance of obtaining correct information, respecting the number of horned cattle and sheep existing in the country."⁴ As a result of this pressure it was decided to obtain livestock figures as well, and these were in fact collected

¹ *Copy of the Circular sent by the Secretary of State to the Chairmen of Quarter Sessions in England and Wales, with reference to the Collection of Agricultural Statistics; with the Resolutions adopted thereon; and of any correspondence relating thereto.*—House of Commons. Sessional Papers, 1862, XL (205), pp. 1-31.

² *Parliamentary Debates*, CLXXV, 1864, pp. 1362, 1383; CLXXVIII, 1865, p. 560; CLXXIX, 1865, p. 1312.

³ *Parliamentary Debates*, CLXXXIX, 1867, p. 1104.

⁴ *First Report of the Commission appointed to inquire into the Origin and Nature etc. of the Cattle Plague.*—Appendix E, House of Commons, Sessional Papers, 1866, XXII (3591), p. 180.

and published before the acreage figures. On 5 March 1866 returns were collected from all owners of livestock, including proprietors of town dairies, of the numbers of milk cows and other cattle of two years and over and those under two, of sheep of one year and above, and of those under one year, and of pigs, the results being published on 7 May.¹

On 25 June the acreage figures were collected as originally planned. Schedules were sent to every occupier of more than five acres of land, requesting the acreages of wheat, barley, oats, rye, beans, peas, potatoes, turnips and swedes, mangolds, carrots, cabbage, kohlrabi and rape, hops, vetches, lucerne and any other green crop, rotation grasses, bare fallow, and permanent grass. Both livestock and acreage returns were collected for the Board of Trade through the agency of the Board of Inland Revenue, whose Excise officers were distributed throughout the country and were thus well placed to distribute and collect the forms. The procedure adopted was simple: the officers prepared lists of occupiers from the Parish Rate Books and from the Income Tax Assessments, and sent schedules to each occupier through the post. The returns, when received, were consolidated in parish summaries, and the original schedules destroyed after the lapse of one year. When occupiers declined to make a return the officer or the local Assessor of Taxes was to make an estimate; officers were instructed to compare their estimates with the total acreages given in the Rate Books, and, in the event of difficulty, to seek help locally from magistrates, clergy, agents, or others acquainted with the locality.²

Although satisfactory machinery, which incidentally had been thought unsuitable by the Government in 1846, had now been established, the problem of overcoming the opposition of farmers and landowners remained. Undoubtedly the occurrence of the cattle plague at that particular time facilitated the task of collecting the statistics; as one observer put it, "no one who has watched the current of public opinion in the past twelve months will doubt that to the calamity which has recently befallen our flocks and herds is due in great measure the present favourable disposition of farmers as a body to contribute for public use information which but a short while ago they had a strong objection to divulge."³ Not only did the cattle plague weaken the hostility shown by English farmers to the returns; it was responsible for the fact that any livestock figures were collected.

¹ *Returns relating to Livestock in the United Kingdom*.—House of Commons, Sessional Papers, 1866, LX, pp 1–6. The date is given in J. Lewis, *op. cit.*, p. 406.

² Circular to Collectors, Excise General Order, 31 May 1866; also Excise General Order, 30 May 1868.

³ J. Lewis, *op. cit.*, p. 415.

But while the cattle plague diminished opposition it did not eradicate it, and its effects were short-lived. That this was so is indicated by the contrast in completeness between the livestock and the acreage returns. In Great Britain estimates were necessary for only 1.5 per cent of the cattle, 2.5 per cent of the sheep and 2.0 per cent of the pigs, and even in a county such as Hertfordshire, where opposition was strong, the figures were only 6.0 per cent, 8.6 per cent, and 5.4 per cent respectively. No figure of the proportions of the acreage returned which had to be estimated was published for the whole country, but it can hardly have been much less than 10 per cent by area, and in Hertfordshire was as high as 45 per cent.¹

These contrasts in the proportion of estimates reflect the varying intensity of opposition, both as between the livestock and the acreage returns, and between the different parts of the country. As on previous occasions, there were marked differences between Scotland and England; the Inland Revenue Commissioners noted the facility with which the information was collected in Scotland compared with the reluctance and refusal often encountered in England.² In Scotland only $\frac{1}{2}$ per cent of the farmers declined to make returns, while in England the figure was $5\frac{1}{2}$ per cent. It was mainly in southern and eastern England that opposition was concentrated; in Cumberland only $\frac{1}{2}$ per cent of the farmers refused to make returns, and in Yorkshire, Lancashire, and Northumberland only 1 per cent, but "in Hertfordshire, Huntingdonshire, and some other counties, as many as 30 to 37 per cent declined."³ Even within these broad regional contrasts, there were marked differences between adjacent counties and even between adjacent parishes; 13 per cent of the acreage returned in Buckinghamshire was estimated, compared with 45 per cent in Hertfordshire and only 7 per cent in Oxfordshire, and with 0 per cent, 45 per cent, and 74 per cent respectively in the three neighbouring Hertfordshire parishes of Essendon, Little Berkhamstead, and Bayford.⁴

Much of this opposition was attributed to the hostility of landlords rather than of farmers. The President of the Board of Trade thought that certain substantial landowners had taken a prejudice against the returns and had

¹ *Return of the Total Number of Cattle, Sheep and Pigs, Returned by Occupiers of Land, and Estimated by Collecting Officers, upon 5th March, 1866, distinguishing the Number Estimated by the collecting officers, in default of Returns by Occupiers, with the Percentage Proportion of the Number So Estimated.*—House of Commons, Sessional Papers, 1866, LIX (528), pp. 1-4. The acreages are calculated from the Parish Summaries, Hertfordshire, 1866.

² *10th Report, Commissioners of Inland Revenue*, 1866, pp. 47-8.

³ *Parliamentary Debates*, CXCVII, 1869, p. 834. It is not clear to what these figures refer; it seems likely that they are average figures for the first three years.

⁴ Calculated from the 1866 parish summaries.

advised the farmers not to fill them up, while the Commissioners of Inland Revenue reported that "throughout large tracts of country the farmers, at the instigation of some great landowner, had set our officers at defiance." Generally it was the occupiers of large farms who objected to making returns, and the acreages of such farms were more difficult to estimate. Some of the returns were deliberately falsified; one farmer, occupying fifty acres, returned over 300, including ten acres of hops, and also 1,000 pigs, "a statement evidently as untrue as the other portion of the return." Officers experienced insult and annoyance; the date of collection was said to contribute to this, since the farmers were then engaged on their hay harvest, and "very irritable when called upon by a Government Officer to leave their occupation for the purpose of detailing to him all the particulars of their holdings."¹

As on previous occasions, the amount of opposition must not be over-emphasized; the majority of farmers made returns without trouble. Perhaps more typical of the majority was the Bedfordshire farmer who noted briefly in his diary on 24 February 1866: "On Monday next, I have to send the number of all my Neat Cattle, and Sheep, and Pigs, in a form sent by the Board of Trade, it is a very general thing yet quite new on account of the Plague."²

Despite the opposition, and despite the inevitable adjustments necessary in the machinery of collection, there was on this occasion no turning back. The returns continued to be collected, though in 1867, as in subsequent years, the acreage and livestock figures were obtained simultaneously on 25 June, a date altered in 1877 to 4 June. Because of the need to collect returns of all livestock the lower limit of five acres was abandoned, and returns were obtained in 1867 from all occupiers of land. In 1869 a lower limit was again imposed when a minimum size of a quarter of an acre was adopted; this figure was maintained until 1892, when the present minimum of over one acre was substituted.³ The returns remained voluntary until the Agricultural Returns Act of 1925 provided legal sanction for their collection, but they grew in size and complexity as new items were added and old subdivided.⁴

¹ *Parliamentary Debates*, cxvii, 1869, p. 834; 12th Report, Commissioners of Inland Revenue, 1869, pp. 11-12; 17th Report, 1874, p. 20; *Agricultural Returns of Great Britain, With Abstract Returns for the United Kingdom, British Possessions and Foreign Countries, 1881* (C3078), p. 3.

² Manor Farm, Upper Stondon, Bedfordshire Record Office, D.D.X., 159/3.

³ *Agricultural Returns for Great Britain*, 1867 (C3941), p. 3; 1877 (C1878), p. 3; 1869 (C4200), p. 4; 1892 (C6743), p. vi. In practice in 1867 "cottagers and holders of small pieces of garden ground" were exempted.—Excise General Order, 29 May 1867.

⁴ Returns were also compulsory from 1918 to 1921 under the provision of the Corn Production Act, 1917.

By 1919 the twenty-five items for which returns were required in 1866 had increased to fifty.

The difficulties encountered in the early experiments in the collection of statistics had concentrated efforts on the limited objective of securing the acreages of crops. Yet one of the chief arguments advanced in support of the collection of agricultural statistics was the light they would throw on the production of different crops, and Sir John Walsham had gone so far as to say that the acreage figures without yields were "interesting as statistical curiosities" but no more.¹ In 1884, when the collection of the acreage figures was firmly established, an attempt was made to obtain information about the yields of certain crops—wheat, barley, oats, beans, peas, turnips, mangolds, potatoes, and hay. Estimators were appointed, generally men experienced in making agricultural valuations. They were given groups of approximately fifty parishes, and required to make estimates of the yields of these crops in each parish, though parishes might be grouped where soils and the quality of the crop varied only slightly.² These estimates have also continued to be made, though the procedure has been somewhat modified. Their historical interest is, however, less both because they are estimates, and because the smallest area for which they are available in England and Wales is the county;³ for the study of regional change in agriculture, the livestock and acreage figures are of much greater importance.

INFLUENCE OF THE PREVIOUS EXPERIMENTS

The final form which the returns took and the way in which they were collected were clearly influenced by the experiments of the preceding thirty years. After 1836 a trend towards simpler returns is noticeable, and the difficulties of ascertaining yields, of collecting numbers of different classes of livestock, and of determining the extent of rough unenclosed land used for grazing, led to concentration on the collection of crop acreages; for the collection of livestock numbers in 1866 was purely fortuitous. Other lessons could certainly have been learnt, for many of the problems which the Board of Trade was to face in the collection of the returns had been met and noted, if not solved, on previous occasions; the problem of complete enumeration, the unreliability of the Rate Books, the use of local measures, ignorance of the true extent of land held, and difficulties of definition, particularly of per-

¹ Lord's Committee, evidence of Sir John Walsham, Question 174.

² Circular to Collectors, 28 July 1884. Details are also to be found in *Agricultural Produce Statistics, Great Britain, 1884* (C4216), pp. 5-7, and *Agricultural Produce Statistics of Great Britain, 1890* (C6298), p. vii.

³ Produce returns are available for Scotland by parishes from 1884 to 1911.

manent grass and fallow, had all caused trouble before.¹ At first sight it is difficult to see why the standards of accuracy which were acceptable in 1866 did not prove satisfactory in 1854. It may be that the success of the livestock census of March 1866, taken during an emergency for motives which were clearly in the farmers' interests, encouraged an attitude of optimism which minimized the shortcomings of the acreage returns. Some credit is also due to the new machinery for collection that was adopted in 1866, for though the Excise Officers were not agriculturalists, and though they were acting only as agents of the Board of Trade, they were paid officials of the central government and did not refuse to collect returns, as did the Boards of Guardians.² Furthermore precautions had been taken to secure estimates in default of returns, so that statistics of a kind were obtained from all known occupiers, and not only from those who could be persuaded to fill in a schedule or give the details of their holdings to the Collecting Officer.³ For these reasons, and because the returns were uniform for the whole country, the 1866 returns are probably more accurate and complete than their predecessors.

¹ *Agricultural Statistics of Scotland*, 1854, *loc. cit.*, pp. 3-5; 1855, p. 3; 1856, p. 5; also Lords' Committee, evidence of Hall Maxwell, Question 59; and *Reports of Poor Law Inspectors*, pp. 75, 76, 79.

² Some difficulties did arise later. See Minute of Board of Inland Revenue, 23 June 1892, as to proposed refusal to collect Agricultural Statistics. Excise officers continued to collect the returns until 1919.

³ In 1854 specific instructions were given that estimates should be made where no return could be obtained (*Reports of Poor Law Inspectors*, p. 18), though no procedure seems to have been laid down; in general, however, estimates were not made, and the returns prior to 1866 are therefore less complete.

(To be continued)

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A Review of Balks as Strip Boundaries in the Open Fields

By H. A. BEECHAM

IT was Seebohm who first alleged that individual holdings—strips or parcels—in the Open Fields of medieval England were bounded by green balks of unploughed turf.¹ This statement was accepted and copied by many later historians until the publication of the Orwins' *Open Fields* in 1938. The Orwins, in this and the subsequent edition published in 1954, disputed Seebohm's general statement on the grounds that he had misinterpreted his evidence.² They argued that any purpose balks might have had was already served by a boundary of a different sort. The action of the fixed mouldboard plough was to form lands (ridges, beds, warps, stitches, etc.) and between each land was a clearly demarcated furrow. Each man knew how many lands went to his strip and the furrow showed where each land joined the one adjacent to it. Balks would have been pointless and wasteful; and it is difficult to conceive such a wastage of land at a time when the cultivated area in each parish was barely sufficient to support the needs of the community.

Two further points made by the Orwins are as follows. "... A common complaint in the proceedings in the manorial courts is that against the man who encroached upon his neighbour's strip, which could not have happened if there were an intervening balk." Furthermore, "the compilers of the Book of Common Prayer thought it desirable to repeat the condemnation by the law of Moses of those who removed their neighbour's landmarks. Clearly such were not balks." As evidence the Orwins cite a picture which hangs in Averham Park, near Newark. Painted in 1720, it portrays the house in which it hangs, with a foreground of tillage field. This field is most clearly represented with its lands thrown up under crop, but the lands are divided only by wide furrows.

A further piece of negative evidence in support of the Orwins' case is to be found in Welbeck Abbey in the form of a portrait painted in 1716 by John Wootton. This portrait shows Lady Henrietta Harley hunting the hare on Orwell Hill, near Wimpole in Cambridgeshire, across a landscape of open-field country. Ridge and furrow are plainly shown, but there is no sign of balks. There is also a significant silence on the part of the protagonists of

¹ F. Seebohm, *The English Village Community*, London, 1883, pp. 2-3.

² C. S. and C. S. Orwin, *The Open Fields*, Oxford, 1954, pp. 43 and 44.

enclosure.¹ Arthur Young and his contemporary pamphleteers criticized the open-field system and urged its abolition, yet not one can be found who pointed to balks between strips as wasting land and harbouring weeds: this criticism was left to the text-book copyists of Seebohm.

Finally, there are, throughout the country, acres of grassland where open fields are known to have existed. Both ridge and furrow are plainly visible, but no trace of balks can be found. Had balks existed when these ploughlands were laid down to grass, traces of them would survive: whereas all we can find is land after land alternating solely with furrow.

The controversy has however revived in recent years and new evidence of balks as strip boundaries is alleged to have been found. Before proceeding to estimate the validity of this evidence, it will be as well to consider certain factors and assumptions which, in the present state of knowledge, are basic to the controversy. The first important factor to be recognized is the existence in the open-field system of various unploughed pieces of land, often called balks or meres, which neither ran between strips nor were they the boundaries of strips. At least four such distinct types of balk were found by the Orwins at Laxton.² There were, first, the paths by which a farmer could approach his land without crossing those of his neighbour. These were sometimes called common balks or footbalks, and they are to be seen clearly marked in many pre-enclosure estate maps. Canon Scobell shows clearly the meaning of the term common balk in the following quotation from a homily. "It is lamentable to see in some places how greedy men use to plough up and grate upon their neighbour's land that lieth next them; how covetous men now-a-days plough up so nigh the common balks and walks which good men aforetime made the greater and broader, partly for the commodious walk of his neighbour, partly for the better shack in harvest time, to the more comfort of his poor neighbour's cattle. It is a shame to behold the insatiableness of some covetous persons in their doings; that where their

¹ For mention of such balks in the light-soil counties alone, the following reports may be searched in vain: W. Marshall, *Rural Economy of Yorkshire*, London, 1788; *Rural Economy of Gloucestershire*, 1789; *Rural Economy of the Midland Counties*, 1790; *Rural Economy of Norfolk*, 2nd ed., London, 1795; Thomas Brown, *General View of the Agriculture of the County of Derby*, London, 1794; John Monk, *General View of the Agriculture of the County of Leicester*, London, 1794; Thomas Stone, *General View of the Agriculture of the County of Lincoln*, London, 1794; Robert Lowe, *General View of the Agriculture of the County of Nottingham*, London, 1794; Nathaniel Kent, *General View of the Agriculture of the County of Norfolk*, London, 1794; Arthur Young, *General View of the Agriculture of the County of Sussex*, London, 1793; *General View of the Agriculture of the County of Suffolk*, London, 1794; William, Jacob, and James Malcolm, *General View of the Agriculture of the County of Surrey*, London, 1794; John Boys, *General View of the Agriculture of the County of Kent*, London, 1796.

² Orwin, *op. cit.*, pp. 47, 48, 99.

ancestors left of their land a broad and sufficient bier-balk to carry the corpse to the Christian sepulture, how men pinch at such bier-balks; and now they either quite ear them up or turn the dead bodies to be borne farther about in the high streets; or else, if they leave any such meer, it is too strait for two to walk on."¹

Then, secondly, the headland of the furlong, that margin at the top and bottom of the lands where the ploughs and their teams had room to turn, was sometimes called a balk; although as a rule, the headlands would be cultivated each year after their use as a turning ground was over.

Next, in many an open field there would be awkward corners, steep banks, or low-lying wet places which would be unsuitable for cultivation. These were left as unploughed balks, and, in Laxton and elsewhere, were known as 'sikes'.

The fourth type of balk noted by the Orwins at Laxton was the half-balk or 'stintin'. This was an arrangement necessitated when the "lands of one furlong abut direct on to those of another, or they finish at right angles to the outside land of the next furlong, without the intervention of any common balk or headland."² Here either cultivator had the right to tread $2\frac{1}{2}$ yards on to his neighbour's land in order to cultivate, manure, and harvest his own. When the lands met end to end this margin of $2\frac{1}{2}$ yards was known at Laxton in the seventeenth century as a half-balk. It is known today as a 'stintin'. Like the headlands, these half-balks were, after use for purposes of access, cultivated, sown, and harvested with the rest.

Paths and headlands would of course constitute boundaries to the furlongs themselves, and it is presumably such balks that J. A. Venn describes as "... the numerous balks which would have obtruded themselves, between the furlongs in the arable field at, say, Rampton ..."³ Parish roads, common balks, and sikes would serve as boundaries to the two or three huge fields themselves. Moreover, the 1840 Tithe Map of the then unenclosed parish of Easington, Oxfordshire, shows a tract of land 2 r. 12 p. in extent, called in the Award a "balk," and under "common cultivation," which served as a boundary between this parish and that of Chalgrove.⁴ It is important that the existence of such balks in the open fields should be recognized and acknowledged. Their existence is recorded in manorial documents. If it is forgotten, and if, to the unwary historian, 'balks' mean only strip boundaries,

¹ 'The Common Fields at Upton St Leonards and the Recent Enclosure', *Cotteswold Naturalists' Field Club*, XIII, pt. III, 1900, p. 219.

² Orwin, *op. cit.*, p. 99.

³ J. A. Venn, *Foundations of Agricultural Economics*, Cambridge, 1933, p. 44.

⁴ Bodleian Library, Oxford.

a most confused interpretation of such documentary references may well result.

In a wider context than that of open-field farming, the balk or mere is of course as recognized a form of field boundary as is the hedge, ditch, wall, or fence. In many arable areas, provided stock does not have to be kept in (or out) and provided that the protective shelter of the higher form of boundary is not required, these balks serve a very useful purpose. Their maintenance cost, for one thing, compared with other forms, is negligible.¹ This being the case, balks found as field boundaries today can scarcely indicate (as Venn seems to have thought) that they are derived from strip boundaries of the pre-enclosure period.² Additional evidence would be required to support such a view. In some areas balks have, as field boundaries, a practical utility which is sufficient explanation of their existence without resort to an unsubstantiated medieval ancestry.

The issue is further complicated by certain farming practices now rendered obsolete and for the most part forgotten. The first of these was noted by the Orwins as having misled some writers, including Venn.³ This was the practice "once pursued on some of the surface clay-land in England which has long since gone out of cultivation, of leaving a wide strip between each of the narrow 'lands' unploughed to facilitate more efficient drainage. . . Examples of these 'green furrows' as they are called, may be found on the lias clay south of Stratford-on-Avon, but they were not divisions between different tenancies. This land was so wet and impervious that it could only be tilled at all by ploughing it up in little dry and narrow 'lands', with a wide space between each into which the water could drain and where, in flat parts, it could lie."⁴ Such unsuitable land would have dropped out of cultivation with the vanished need to be self-supporting, in respect of corn, both on the parochial and on the national scale. Moreover, the introduction of the underground drainage system in the nineteenth century would render such practices obsolete. But the photograph which the Orwins publish shows traces of these green furrows (or 'fithers' as they were called) at Crimscote in Warwickshire between lands now covered in turf; and it is not surprising to find that this practice bore the recorded sanction of manorial custom. It may of course be urged that the Orwins were wrong in their interpretation of this

¹ See Appendix, Glos., Westcote.

² "... anyone desiring to see balks in abundance need only traverse the Southern parts of Cambridgeshire or the North-Eastern quarter of Hertfordshire where, although enclosure has technically and legally overrun the country, yet physically it is non-existent, and the place of the hedgerows, and boundaries between individual fields, is still supplied by these earthen ridges."—Venn, *op. cit.*, p. 44.

³ *Ibid.*, Plate I, opp. p. 32.

⁴ Orwin, *op. cit.*, p. 46.

phenomenon and of the photograph, and that we are looking, in fact, at the remains of balks between strips. But these green furrows, as can be seen, plainly occur between lands, and to identify them as strip boundaries would be to identify strip and land—an error to which later reference will be made. Furthermore, as will be seen below, the manorial court orders enjoined that the green furrows should be left between every land—not between parcels of land nor between the outside lands of individual holdings.

Two further practices may be remarked on, which, although their extent is unknown, might in their surviving traces be misleading. The Rev. St John Priest recommended that, as a method of levelling ridges, "small lands or ridges about two yards and a half wide should be formed in what are now furrows, as several farms have done in such instances, so that between the broad ridges there lies a small ridge, forming two furrows instead of one between the broad ridges."¹ Adam Murray recommended Warwickshire farmers to adopt a method which he had observed near Perth for reducing and levelling broad high-gathered ridges. The farmer, whom he had observed practising this method, "began with throwing a drain into every furrow, thus designing by one operation to dry the ground, to equalize the soil, and to give it a fallow. When these operations were completed, he gathered up a small ridge into the furrows above the drains to protect them from the surface water."² Either of these practices, although undertaken perhaps in comparatively modern times, might well leave traces discoverable to the eye, to the aerial camera, and to the excavator, which might appear to be evidence of boundary balks between strips.

The recently revived controversy would appear to involve two fallacies. The first of these is the land-strip identification which, as will be seen below, appears to have led Dr Kerridge to see the green furrows between lands on heavy soil as balks dividing strips. It should perhaps be pointed out that the term 'strip' is an invention of historians. It is not to be found in documents, and there is no evidence that it was known to, or used by, the open-field farmers. The word 'land', on the other hand, is not only commonly found in documents relating to the open-field system, but is in current use today among farmers by whom its meaning is clearly understood. 'Strip' is, however, a convenient term to use for the holdings scattered throughout the open fields, and its meaning is for the most part understood.

The classical view was that each man's strip approximated to as much land as he could plough in a day.³ This was the customary acre, varying in size

¹ *General View of the Agriculture of Buckingham*, London, 1810, p. 130.

² *General View of the Agriculture of the County of Warwick*, London, 1815, pp. 140, 141.

³ Seebohm, *op. cit.*, pp. 124 ff.

according to locality, but smaller on the whole than the statutory acre. The size of lands, however, varied very greatly, depending upon the nature of the soil and upon local contour.¹ On wet, heavy soils lands would be narrow, with frequent water furrows: on lighter soils they would be wider. On heavy soils they would be high: on drier soils relatively flat. As to length, on flat land they might run the full 'furrow-long' of 220 yards; but in undulating country with a changing contour they would be necessarily short. The Orwins found at Laxton that "the strips, or parcels, as shown upon the map (1624) were composed of one, two, three, or of many lands."² But Laxton was not exceptional in this respect. A deed of sale relating to Upton St Leonards, Gloucestershire, in 1624, shows that the number of lands which strips contained varied greatly, as did the size of the lands themselves.³ The sale was of 21 strips in all. The smallest of these was only $\frac{1}{4}$ acre, consisting of three 'short acres', and the largest was $2\frac{1}{4}$ acres in extent: the average size of the strip $1\frac{1}{8}$ acres. The smallest lands, or ridges as they were called here, are shown in a holding of fourteen of them measuring only 2 acres: the largest in a strip of two ridges measuring 1 acre. The size of the lands varied, therefore, on an average from $\frac{1}{7}$ to $\frac{1}{2}$ acre. The number of lands to a strip varied from "1 ridge in Rousemore's feelde, 1 forehead in same ($\frac{1}{2}$ a)," to "14 ridges in Northill field (2a) called Woodcoke's peeces." Countless examples of the plurality of lands to strips can be found, but nevertheless, the erroneous identification of land with strip is still occurring.⁴

The second fallacy seems to have resulted from some confused endowment of the fixed mouldboard plough with the properties of the one-way plough, or else from ignorance of the former and of its workings. With the

¹ The introduction of underground drains, running across the fields, modified this variety, but not to the extent that might be imagined. On some of the heavy clay land of Warwickshire, with the ploughing campaign of the early war years, the narrow high-backed lands were widened, and thus, to a certain degree, obliterated by wider lands of a more convenient shape for tractor ploughing. In the space of a few years, however, the old high-backs were restored since they were found essential for drainage. For this information I am indebted to Mr A. Beecham, Compton Scorpion Manor, Warwickshire.

² Orwin, *op. cit.*, p. 101.

³ Glos. R.O./D127/921.

⁴ Initiated perhaps by G. M. Trevelyan. "The outline of many of these 'strips', ploughed by the farmers of Saxon, mediaeval, and Tudor-Stuart times can still clearly be seen. The 'ridge and furrow' of pasture fields that once were arable is one of the commonest features of the English landscape today. . . . Often, though not always, the curved 'ridge' or 'land', thus clearly visible today, represents a 'strip' that was held and worked long ago by a peasant farmer, who also held and worked many other strips in other parts of the 'open field.'"—*English Social History*, London, 1944, p. 4; and expressed with far less guarded emphasis by M. W. Beresford in 'Ridge and Furrow and the Open Fields', *Economic History Review*, Second Ser., 1, 1948-9, pp. 34-45.

one-way plough, it is true, a field can be ploughed up and down, from one side to the other, without the necessity to create lands divided by furrows. It can be argued, therefore, that where the one-way plough was used upon the open fields, and furrows were not needed for drainage purposes, some other form of strip demarcation might be necessary and that balks might in such areas be the substitute.¹ The one-way plough, common to Kent, by a long tradition, has recently been discovered to be of greater antiquity than was previously thought. Mr F. G. Payne has identified it as being that portrayed in the tenth-century Cottonian MSS., Tiberius B.v. and Julius A.v.² Whether, however, it was used in this country at such an early date and whether it was *ever* used outside a few, small, limited localities has yet to be proved. For, as Mr Payne remarks, "It is the origin of these pictures that is open to doubt."³

The one-way plough was, of course, adopted wherever steam ploughing was introduced in the second half of the last century. When the steam engine was discarded, the one-way plough gave place once more to the fixed mould-board plough—and this preference, running on into comparatively recent times, is perhaps significant. Compared with the fixed mouldboard plough, it is structurally weak and less able to withstand the strains of heavy soil. Generally speaking, on flat land furrows, and therefore the fixed mould-board plough, were needed for drainage. In hilly country, the one-way plough, together with the temptation to plough always downhill, would result in soil erosion. The concept of 'ploughing flat', as described above, is a perfectly valid one, but much more evidence must be forthcoming before it can be used to prove the existence of balks for strip-demarcation throughout a wide area of medieval open-field country.

The case for balks, however, in relation to 'ploughing flat' has ramifications considerably more obscure than the obvious connection between one-way ploughing and the absence of dividing furrows, as stated above. Having read or written of ridge and furrow, and having seen it covered with turf in high-back country, it seems difficult for some to see ridge and furrow at all under less spectacular conditions. The eye that can no longer see a narrow high-backed land can see no land at all. Perhaps the soil is under plough and gone is the revealing turf with its convenient shadows. The eye that can no longer see the shaded, dark green furrow can see no furrow at all, however clear-cut it may lie for the ploughman's eye. Further confusion appears to

¹ M. Nightingale, 'Ploughing and Field Shape', *Antiquity*, no. 105, March 1953, pp. 23-6.

² 'The Plough in Ancient Britain', *Archaeological Journal*, CIV, 1948, p. 103.

³ Mr Nightingale, while making use of Mr Payne's interpretation of one of these pictures for the purposes of his argument, omits all reference to this, its doubtful authenticity.

have risen from the ambiguity of the term 'ridge' in the phrase 'ridge and furrow'. This term is sometimes used to mean lands and at other times to mean high-backed lands. In either sense, however, the furrow is indispensable and its meaning unambiguous. This fact is sometimes overlooked.

Hence Dr Kerridge makes the mistake of supposing that because in some places lands were kept low, and the level of the fields flat, somehow or other there were no lands, or, at any rate, there were no furrows.¹ Furrows were not needed for drainage purposes and so there were no furrows. As there were no furrows, there must have been balks. The following quotation will show that Dr Kerridge had not in mind the one-way plough which would, indeed, have resulted in an absence of furrows. "Ridging up the land was unknown in Chalk Wiltshire. . . In Northumberland, on dry lands, the ridges 'are quite flat, and alternately gathered and split'. In Hampshire, and Wessex generally, 'throughout this whole country we all plough the ground upon the flat, and thwart the furrows in stirrings.' In fine, 'in the Open Champion where the land is dry, they do not lay up their ridges as in other places.' It is precisely this sort of tillage that accounts for the presence of grass balks in the open fields of the chalk countries of England. Without water furrows, a grass balk was needed as a dividing line between land and land. Such grass balks obtained throughout the open fields of Chalk Wiltshire, and in all chalk countries generally. . ."² The mention of ridging, albeit the ridges were flat, means that the fixed mouldboard plough was in use, laying out the fields into lands. But because these lands were not high-backs and because the furrows between them were not needed for drainage, Dr Kerridge supposes that the furrows did not exist. This is his first fundamental mistake: his second is the more common one of identifying strip and land and of supposing that the demarcations between holdings must therefore lie between each land. Both errors are clearly stated in the sentence already quoted, "Without water furrows, a grass balk was needed as a dividing line between land and land."

Dr Kerridge's conclusions, and their erroneous foundation, were noted by the Orwins in the recent edition of their book.³ Dr Kerridge, however, has since attempted to prove that balks were strip demarcations not only in the chalk-down country but also throughout the midland plain.⁴ In the case of the first-named region he now wisely abandons any attempt to endow the fixed mouldboard plough with the properties of the one-way plough; and he

¹ 'Ridge and Furrow and Agrarian History', *Economic History Review*, Second Ser., IV, 1951.

² *Ibid.*, pp. 18 and 19.

³ Orwin, *op. cit.*, pp. 49 and 50.

⁴ 'A Reconsideration of Some Former Husbandry Practices', *Agricultural History Review*, III, 1955, pp. 32-40.

no longer suggests that where water furrows were not needed for drainage purposes, no furrows existed. He proffers two different sorts of arguments. One proof is based on the existence of lynchets. These he thinks were formed by plough cultivation, because he has read in G. Atwell's *Faithful Surveyor*, 1662, p. 90, an account of the way a road was built, by means of the plough, to run up a hill taking a spiral or zig-zag course.¹ It is difficult to see the relevance of this feat of road building, but how lynchets were formed is apparently of no account. "Whether or not the terraces and steeps were cut or resulted from cultivation—and the two explanations are reconcilable—does not matter for this discussion."²

What does matter, apparently, is that Marshall, Cobbett, and Jethro Tull saw lynchets under cultivation in their own time. The statements of these writers he supports by other evidence for the cultivation of lynchets. "That the common field upon the 'walls' at Amesbury in the sixteenth and seventeenth centuries was such terraced cultivation can scarcely be doubted." His three MS. references supporting this statement cannot, however, be traced. "At Kensworth there were 'iij rodas iacentes super lez lynches super stokynghill'." This is a quotation of a fragment of a footnote in H. L. Gray's *English Field Systems*, p. 377. But the evidence of the footnote in its entirety, and the passage in the text to which it refers, seem to prove that the open field did not exist at this place. "At Clothall some of the lynchet terraces were cultivated until recently." Dr Kerridge cites Venn as his authority for this statement, but here again the reference cannot be traced.³ "Similar terracing is to be found on the sides of some of the hills in northern England and is well described in Dr Raistrick's book on Malham."⁴ Dr Raistrick states, in his book, that the lynchets were made by plough and by Anglian settlers, but he offers no new evidence, nor indeed evidence of any sort for this statement.

The statements of Marshall, Cobbett, and Jethro Tull, together with the evidence examined above, are supposed to prove, in some way not explained, that lynchets, when they occurred, were an integral part of the open-field system. The steeps between the platforms of lynchets must therefore have been balks between strips: so, after all, there were balks between the strips of the open fields. However, the fact that lynchets are found under cultivation at any period of history means merely that farmers will take land, if they need it, as they find it and make the best of it.

Moreover, if, as the Orwins maintained, these lynchets were formed by an agency other than the plough,⁵ then their particular formation, that is to say the platforms with grass banks or steeps between them, can have no con-

¹ *Ibid.*, p. 34.

² *Ibid.*, p. 35.

³ *Ibid.*, p. 35, n. 7.

⁴ *Ibid.*, p. 35, n. 8.

⁵ Orwin, *op. cit.*, pp. 175-9.

nection with open-field farming, can throw no light on its system, and can offer no evidence as to the existence of balks between strips within that system. Far from not mattering, the origin of linchets—by what agency they were formed—is, in fact, vital to any use of them in an argument of this sort.

Next follows what may be described as a philological argument "... 'Land-sherds', another variant of the provincial name for boundary balks, may be taken in evidence. Formerly, I contented myself with observing that the terms *linch*, *linchet*, *lincherd*, *landshere*, *mere*, *balk*, and *wall*, all had, in the chalk country, the same general meaning of boundary balks in the common fields, this being the meaning attached to some of them by John Worlidge." Here we are referred back to a footnote in Dr Kerridge's previous article.¹ In this earlier footnote we are told that Worlidge defined the word 'dool' as meaning "a green balk or mound between the Ploughed Lands in Common Fields." But an examination of Worlidge's definition shows that Dr Kerridge has misquoted him. Worlidge defined the word dool as "a great" (not green) "balk or mound between the Ploughed Lands in Common Fields," and this "great" mound suggests far more nearly a sike than a strip of land between two holdings. This argument of Dr Kerridge's illustrates the danger referred to above, of overlooking the many different types of balks to be found in the open fields, and consequently assuming that the mere appearance of the word landsherd, balk, or any equivalent term, can be taken alone as evidence that balks were strip boundaries.

Of the midland plain, Dr Kerridge states, "There were, in fact, boundary balks in the common fields here as elsewhere . . ."² For evidence, Dr Kerridge quotes J. Morton's *Natural History of Northants*, 1712, p. 14, and Marshall's *Review of the Reports to the Board of Agriculture from the Eastern Departments of England*, 1811, pp. 135 and 136, as describing green furrows of exactly the same sort, and in exactly the same soil conditions, as those described by the Orwins at Crimscote in Warwickshire. He next cites the Rev. St John Priest's *General View of the Agriculture of Buckinghamshire* as his authority for stating that "In Buckinghamshire, open-field ridges were 2 ft high and the sheep commoned on the balks between them." Dr Kerridge would, however, appear to have misread the passage, for although the ridges are described as being two feet above the level of the furrows between them, there is no statement to the effect that sheep were pastured on balks between the ridges. The writer, in fact, goes on to describe, on p. 137, the bad state of the furrows. "The next loss I shall mention is in the furrows, it is

¹ *Economic History Review*, 1951, p. 19, n. 8.

² *Agricultural History Review*, III, 1955, p. 37.

twofold: one caused by the great depth of the furrows below the crown of the ridges, and the other by their deviations from straight lines. In the former case the water stands so much in the furrows, that it not only destroys all vegetation in the corn and grasses intended to be cultivated, for two yards on each side of them, but encourages the growth of all sorts of weeds and rubbish." This description does not suggest that grazing would be possible between the ridges.

Moreover, Dr Kerridge states that "references to greensward balks dividing and bounding the properties and occupations lying dispersedly in the common fields of the plain countries are superabundant. Sometimes the grass boundary balks are distinguished from the ridgeways and slades by the designation 'narrow' or 'foot', alluding to their width. Frequently the balks, green meres, or green furrows are described as lying between neighbour and neighbour. In some townships these balks were one foot wide, in some eighteen inches, in some two feet, in some three or four. Sometimes they were wider between acres than between roods."¹ These assertions are supported by no argument or illustration. Dr Kerridge's evidence consists of two references to printed works and forty-four references to MSS. The validity of these references will now be examined.

Sir T. Lawson Tancred, the first authority cited, says: "The large fields are divided into furlongs or fourshots, and these were subdivided into a large number of long narrow strips, of about 1 acre or $\frac{1}{2}$ acre each, called 'lands'.—The lands were separated from each other laterally by balks."² This passage occurs in the introductory remarks, and no evidence to support it is offered, nor may any be found in the three Court Rolls which follow. The statement, with its erroneous identification of strips with lands, was possibly derived from Seebohm or from one of his followers.

The second authority cited is F. S. Colman, who in *A History of Barwick-in-Elmet*³ notes among 'Paines' formerly levied in the Manor of Barwick and Scoles, "None shall plough away any part of their neighbour's lands or balk between neighbour and neighbour or between lords and tenants . . ." These balks may have been green furrows, headlands, or half-balks—most probably the latter. Had there existed in this manor boundary balks between strips it would not have been possible to plough away a neighbour's land, or necessary to forbid such procedure.

Before proceeding to an examination of the unpublished evidence, it

¹ *Ibid.*, p. 38.

² "Three 17th-century Court Rolls of Aldborough", *Yorkshire Archaeological Journal*, xxxv, 1943, p. 202.

³ Thoresby Soc., xvii, 1908, p. 127.

must be stated that the references to this are given in exactly the form in which they were given in Dr Kerridge's article.¹ Exception has been made, however, in cases where soil conditions seemed important. Here an elaboration of location has been attempted, chiefly by the addition of the name of the county concerned.

Of the forty-four MSS. referred to, one could not be found.² In three MSS. nothing could be found which seemed relevant to Dr Kerridge's statements.³ In six, although balks (in one case "grass ends") are mentioned, there is nothing to show that these were not sikes, common ways, headlands, or stintins.⁴ The last MS. cited states: "Item, that No person shall Mow or Stake any Foot-baulk on pain for each default 10." This is perhaps a case where Dr Kerridge has interpreted the word foot as indicating width, but equally the word may be interpreted as indicating purpose: in other words, this footbalk was a footpath. Common sense will reinforce this second interpretation if consideration is given to the practical difficulties involved in tethering (or staking) an animal to the confines of a piece of ground one foot wide!

Nine of Dr Kerridge's references make no mention of balks or meres but suggest that in some places there were green furrows between the lands. These were mown for hay, and where width permitted, were grazed by tethered animals. Both mowing and grazing were usually restricted according to the time of year.⁵ The first three may be quoted as examples. Presentment "of John Wilkins for mowing of furrows after St James day contrary

¹ For transcription, and for help with transcription, of all relevant passages in the MSS. cited by Dr Kerridge, I am indebted to the following, and to their assistants: Mr P. A. King, Northants R.O.; Mr L. Fox, Shakespeare's Birthplace Library; Mr E. H. Sargeant, Worcs. R.O.; Mr P. G. Bates, Cambs. R.O.; Mr A. C. Wood, Warks. R.O.; Miss M. Gollancz, W.S.L., Staffs.; Miss A. J. Godber, Beds R.O.; Mr M. G. Rathbone, Wilts R.O.; Mr B. Ashton; and Miss J. Riddell.

² P.R.O., DL, RS, Ct. R., bdle 82, no. 1133, m. 29.

³ Northants R.O., Montagu Coll. Misc. Ledger 145, p. 503; box 1346, box 20, no. 32, m. 16; WSL, Ct. R. Shenstone 12 Oct. 18 Chas. I.

⁴ B.M., Add. MS. 36908, ff. 8, 15v; Add. R. 54166; P.R.O., DL, Ct. R. bdle 106, no. 1535, m. 6; RS, Exch., Q.R., Deps. by Comm. 26 Eliz., Trin. 8; SOA, Willoughby de Broke Coll., 1393a, Ct. Bk. Sowe 6 Apr. 8 Geo. I; Northants R.O., Montagu Coll., Misc. Ledger 129, Polebrook 7 Oct. 1727.

⁵ B.M., Add. MS. 36875, f. 25, Whitchurch, Worcs.; SOA, Man. Docs. Ct. R. Alveston and Tiddington, Warks., 21 Oct. 9 Jas. I; Ct. R. Alveston and Tiddington, Warks., 11 Apr. 18 Chas. II; Ct. R. Whitchurch, Worcs., 12 Oct. 1711; Willoughby de Broke Coll. 703a, Extracts Ct. R. Barford, Warks., 30 Sept. 1 Jas I; 1194 Ct. R. Barford, Warks., 6 Apr. 11 Chas. I; Northants R.O., box 1352, box 36, no. 28, Ct. R. Caldecote, Hunts., 11 Dec. 5 Chas. I; Isham of Lamport Coll., 128, Ct. R. Lamport, Scaldewell, Northants, 30 Apr. 18 Eliz.; P.R.O., Ct. R., GS, bdle 207, no. 42, Lemyngton cum Lillyngton, Warks, 5 Apr. 2 Ed. VI.

to a former paine"; "Item. We payne that every man shall leave his forrow between land and land four foot and betwixt fether and fether two foot in payne to forfeit . . ."; and "No inhabitant within the said manour shall bait or tye any horse or beast in the furrows of any corn fields until the corn be first out . . . none shall be baited or tyed unless the stake be upon their own land or furrow until it be carried." These places are all, however, those in which the soil conditions are similar to Crimscote, Warks., where green furrows were for drainage.¹

One document refers specifically to a mere, and five more to balks, which appear to have been green furrows because restrictions were placed on mowing or grazing them.² The last reference may be quoted as illustration of this point, although, perhaps, "the small balkes lying betwixt the grayne" may have been footpaths: "Item it is ordered and agreed upon that noe person or persons shall keepe or lead any Cowes or bullocks upon the small balkes lying betwixt the grayne in the fields of ffoxton aforesaid at any time from May day untill harvest bee home upon payne . . . Item it is ordered and agreed upon that none shall lead any horses upon the narrow balkes of the fields of this Towne untill harvest be home upon payne . . ." Once again, these balks are situated on heavy land where green furrows may well have been needed.

Without knowing exactly where in each manor the arable fields were situated, reference to soil conditions cannot be as precise as would be desired. The following table, however, shows the types of soil prevailing at the present settlement sites of the nine places for which similarity of soil conditions is claimed with that of Crimscote, Warwickshire. The superficial geology of the Chatteris area indicates that the settlement itself stands on a gravel capping, while the surrounding fields are based on rather heavy soils derived from Kimmeridge Clay and Boulder Clay.³ For the other eight places no drift geology data are available at the present time.⁴

¹ Orwin, *op. cit.*, p. 46.

² SOA, Throckmorton Coll., Ct. R. Throckmorton, Worcs., 13 Oct. 1725; Leigh Coll., Ct. R. Ratley, Worcs., 20 Oct. 1602; Northants R.O., Daventry Coll. 533, Hellidon orders 20 Oct. 29 Chas. II; 20 Oct. 36 Chas. II; 540, Hellidon orders 16 Oct. 14 Chas. II, Hellidon, Northants; Cambs. R.O., L.64, Ct. R. Foxton with Wimbush and Chatteris, Cambs., 7 Dec. 1665.

³ Cf. R. W. L. Melbourne, M.A., *The Land of Britain*, Pt. 71 (Isle of Ely), London, 1940, p. 268.

⁴ For the geological data I am indebted to Prof. K. C. Edwards and to Dr C. A. M. King, and for their interpretation to Prof. E. G. Hallsworth.

<i>Place</i>	<i>County</i>	<i>Grid. Ref.</i>	<i>Solid Geology</i>
Whitchurch	Worcs.	42/215489	Keuper Marl near Lower Lias outcrop
Alveston & Tiddington	Warks.	42/235565	Keuper Marl
Barford	"	42/222558	" "
Caldecote near Upton	Hunts.	42/271608	" "
Scaldewell		52/175785	Oxford Clay
Scaldewell	Northants.	42/769726	Upper Lias Clay/Inferior Oolite
Leamington with Lillington	Warks.	42/316655	Keuper Marl
Throckmorton		42/324673	Keuper Marl
Throckmorton	Worcs.	32/981499	Lower Lias
Ratley	Warks.	42/382473	Mid. Lias (Marl stone)
Hellidon	Northants.	42/516582	Mid./Upper Lias
Chatteris	Cambs.	52/392860	Kimmeridge Clay

Where the settlements are marginal, exact knowledge of the location of the arable fields referred to in the documents is important. If the fields at Scaldewell were on Upper Lias Clay, then the need for green furrows was highly probable, but unlikely if they were based on Inferior Oolite. The Mid. Lias at Ratley makes the need probable; the type of soil at the other eight settlements makes it highly probable.

Thirteen more of the documents cited refer specifically to balks between lands, as distinct from furrows.¹ They have, however, a characteristic extremely damaging to Dr Kerridge's contention that they were boundary balks "dividing and bounding the properties and occupations lying dispersedly in the common fields." For in every MS. they are described as lying between *every* land in the field or fields. Since many properties and occupations must have consisted of more than one land, then these balks lying between *every* land cannot possibly have been boundary demarcations.

Thus of the forty-four references provided as evidence of boundary balks between strips, thirty-eight prove on examination to contain no evidence at all. Of the six remaining references, four will be considered when they are duplicated in a later context.² The other two will be considered now.

The first of these refers to a field book of the Manor of Passenham, Northants (26 Sept. 8 Eliz.).³ In the East Field of this manor there were

¹ P.R.O., DL, RS, bdle 106, no. 1535, m. 1; m. 5; Chanc. Proc. ser. 1, Jas. I, bdle S. 29, no. 7, m. 1; SOA, Trevelyan Coll., Ct. R. Snitterfield 20 Oct. 1660; Northants R.O., Montagu Coll., Misc. Ledger 129, Weekley, 12 Oct. 1721; Luddington, 12 Oct. 1728; 145, p. 71; p. 157-8; p. 469; box 1336, box 7, no. 72, Ct. Bk Weekley 4 Oct. 1707; No. 66/10 Ct. R. 12 Oct. 1721; box 1342, box P, pt. 2, Ct. Files Dondon in Quainton, 10 Sept. 1700, field orders; Daventry Coll. 573a, Ravensthorpe agreement, 1721.

² P.R.O., DL, RS, bdle 106, no. 1534, m. 6; SOA, Throckmorton Coll., Ct. Bk. Stoneleigh, p. 23; Warks. R.O., MR. 14, copy Ct. R. Leamington Hastings, 25 Aug. 1630; MR. 16/9.

³ P.R.O., DL, RS, bdle 8, no. 6a, p. 3.

90 strips of lands of which two were balked on both sides and seven more strips were balked on one side. No balks are described as being in the West Field. In the North Field, of a total of 112 strips, two were balked on both sides and ten strips were balked on one side only. A terrier of lands held by Richard Campion in South Luffenham in 1615 affords similar evidence of balked strips.¹ In the South Field of South Luffenham² Richard Campion held 33 strips of land of which four were balked on both sides and eleven were balked on one side. In the East Field he owned 42 strips of which one was balked on both sides and eight on one side only. In the West Field he owned 33 strips; one was balked on both sides, seven on one only. In both these MSS. it will be observed that a very few balks are described as occurring among a very great number of strips. In view of the various types of balks to be met with in the open fields of any district—foot-paths, headlands, sikes, and so on—it would be surprising if these did not occur as important landmarks in terriers and similar documents. Such balks, of course, bounded the lands which lay adjacent to them, and therefore bounded the strips which contained these as their outside lands. These sorts of balks are to be seen in estate maps and it is not surprising that they are to be found in documents as well. But in both these documents mention of them occurs with insufficient frequency to justify the view that their main purpose was to demarcate the strips next to which they are described as lying.

Dr Kerridge goes on to say: "When a land had been a middle land, it did not have to be balked on each side, but after it was exchanged and had become an end land, it had to be balked on one side to provide a boundary between neighbour and neighbour." His evidence for this statement is taken from a deposition concerning the ownership of lands in Cotton End in Northamptonshire,³ part of which reads as follows, "And at the same time two of the said lands had at every end two bawkes and the other being the middle land had no bawke since which time this middle land being exchanged by one Thomas Ayle with the said George Ravenscroft was marked with bawkes as the others are . . ." But surely only a very hurried reading could suggest that the balks mentioned were running lengthwise *between* the lands. The writer states clearly that the two outside lands had balks at *each end*: that is to say, they were headlands or stintins. If the writer had meant sides when he said ends, then the two outside lands would have had balks running down both

¹ Leics. R.O., Linden Hall MS. 343.

² See Appendix, Rutland, South Luffenham.

³ *Art. cit.*, p. 38, n. 3, P.R.O., Exch. Q.R., Deps. by Comm. 26 Eliz., Trin. 8, dep. by Wm. Harrowden.

of their sides. If this had been the case, the effect must have been, inevitably, to give the middle land balks down its sides too. This is, however, contrary to what the writer explicitly states.

Dr Kerridge next states: "There is, however, abundant evidence that it was forbidden by customary law to plough up the boundary balks during any year of the field course, especially and specifically where the lands were not middle but end lands and the balks were boundaries between neighbour and neighbour." This assertion is supported by no argument or illustration other than a footnote containing references: one to the printed work by F. S. Colman which has already been discussed, and thirty-two to MSS.¹ The validity of these MSS. references will now be examined.

One MS. could not be traced.² In three instances no mention whatsoever could be found in the MSS. of the ploughing up of balks, let alone of the ploughing up of those bounding end lands or between neighbour and neighbour.³ In fifteen cases the ploughing up of balks is forbidden but the type of balk is not specified as being either between land or between strip.⁴ Some of these fifteen documents, indeed, indicate fairly plainly what type of balk was in question. For instance, in the Tempsford Court Roll of 1617, "Item it is ordered anew that noe man shall eare or plough up any Baulkes or Common Headons being atte theire Lands ends further than in former and ancyeut tyme it usually hath beene upon payne . . ." Here the phrase "being atte theire lands ends" which qualifies both Baulkes and Common Headons, suggests stintins. Or possibly "Baulkes" is being used as synonymous with "Common Headons" (or headlands). And in the Stivichall Court Roll of 3 Oct. 1724 we find: "Ordered that no one shall plough half Balks between their land and the land adjoining on payne of 10-0." This half balk was, it may be assumed, a stintin where the two lots of land met without the intervening headland.

In five cases, the ploughing up of green furrows was forbidden, although

¹ *Art. cit.*, p. 39, n. 2.

² Northants R.O., Montagu Coll., box 1352, box 18, no. 160, Barnwell orders 1 Dec. 1614.

³ Leics. R.O., box 311, Leire arts. of agreement 1689; Northants R.O., Montagu Coll., box 1342, box P, pt. 2, Ct. Files Dondon in Quainton 10 Sept. 1700; SOA, Man. Docs., Ct. Files Whitchurch, pains and orders, 24 Apr. 1588.

⁴ B.M., Add. MS. 36908, f.3v; Beds. R.O. DD/TW 10/2/9, Ct. R. Clapham 14 Apr. 8 Chas. I; BS. 1276, Ct. R. Tempsford 1617; L. 26/563, Ct. R. Harrold 2 May 9 Chas I; Northants R.O., Westmorland Coll., box 7, no. 71, Yarwell presentmt. bk. f.5; Finch-Hatton Coll. 834, Gretton bye-laws 24 Oct. 1695; 991, Ct. R. Weldon Magna 1728; Ecton Coll. 20, Ct. R. 9 Oct. 1713; 7a, Ct. R. 1 May 1701; 9, Ct. R. 14 Oct. 1743; Daventry Coll. 573c, Ravensthorpe agreement 1760; Montagu Coll., Misc. Ledger 145, p. 236; Higham Ferrers Burgess R. 1696-1725, field orders, 23 Apr. 1719; SOA, Willoughby de Broke Coll. 1393a, Ct. Bk. Sowe 6 Apr. 8 Geo. I; Hood Coll., Ct. R. Stivichall 3 Oct. 1724.

the MSS. contain nothing to connect the furrows with lands which were not middle but end lands, or to suggest that the furrows were boundaries between neighbour and neighbour.¹ The last of these may be quoted. "Item that no man shall kare up his furrows and hades but shall leave them sufficient at the discretion of the overseers viz. three yards on a side at the hades and three foot broad the furrow." The three townships referred to—Alveston and Tiddington together with Whitchurch—are on Keuper Marl, and Luddington is on Boulder Clay. On both types of soil green furrows were probably a necessity.

Six references alone among the odd thirty support Dr Kerridge's statement that it was forbidden to plough balks specifically where these occurred between neighbours.² The relevant passages in these six MSS. read as follows. "It is agreed that there shall be no baulkes plowed betwixt Neighbour & Neighbour" (Thurlaston, Warks., 1719); "They do agree and do amerce William Dowler . . . for ploughing away part of a meare betwixt the land of Richard Thornton and the said William Dowler" (Kempsey, Worcs., 1656); "Item that everye of the inha'tantes of Shenston that have plowed upp, any of the balkes in the fieldes betwixt theires and their neighbours landes, that before the feast daye of St. John Baptist next cominge they and everie of them soe offendinge doe laye the same downe againe and soe suffer the same to lye as formerlye" (Shenstone, Staffs., 1633); "We present Tho: Clarke for plowing away a balke between Thomas Pytchley and himself at Larkshill" (Hellidon, Northants, 1714); "It is ordered and agreed that noe landholder shall plow any greensward from any balkes that lye betweene landes and lands" (Hellidon, Northants, 1677); and "The Jurors aforesaid Do upon their oath present John Hudson for ploughing up a Balk which lay betwixt him and Widow Garlick . . ." (Stoneleigh, Warks., 1742).

Two further of the MSS. cited may be quoted, since, although these do not support Dr Kerridge's statement that it was forbidden to plough up balks between neighbour and neighbour, they are not without bearing on his case. "It is agreed that there shall be balks layd down in Blackfern field for every acre the balke two foot wide for three roods a foot and half and for two roods a foot" (Urchester, Northants, 1711)³; and "Item. That every inhabitant in the parish of Leamington Hastings shall make and keep a

¹ BM. Add. R. 44654, Ct. Whitchurch, 7 May 1740; Northants R.O., Montagu Coll. Misc. Ledger, 145, p. 451, Luddington; SOA, Man. Docs., Ct. Files Whitchurch, 12 Oct. 1711; Ct. R. Alveston and Tiddington, 11 Apr. 18 Chas. II; Ct. Bk. 20 Apr. 2 Jas. I.

² Warks. R.O., MR. 16/9; Worcs. R.O. Acc. 54, Ct. R. Kempsey, 31 Mar. 1656; WSL, Ct. R. Shenstone, 1 May 9 Chas. I; Northants R.O., Daventry Coll. 532, Hellidon orders, 13 Nov. 1714; 533, do. 20 Oct. 29 Chas. II; SOA, Ct. Bk. Stoneleigh, p. 23.

³ P.R.O., Ct. R., SR, bdle 106, no. 1534, m. 6.

sufficient mound betwixt neighbour and neighbour" (Leamington Hastings, Warks., 1630).¹

These last eight references do not indicate, however, that the balks ploughed up were boundaries between strips, in the sense that they ran longwise between them. Of the Presentments, the following interpretation is equally possible: that they were stintins or half-balks where two furlongs met end to end, with the lands of one furlong abutting direct on to those of the other. The owner of each abutting land had to leave a customary margin unploughed for his neighbour to turn his team on. When the time came to plough these half-balks, one man ploughed too far into his neighbour's margin and was duly presented and fined at the manorial court in consequence.

It is the contention of this article that Dr Kerridge has failed to produce any satisfactory or conclusive evidence of the existence of balks as demarcations *between* strips in the open fields. Such of his evidence, in the form of footnote references, as has been examined, turns out to be in some cases untraceable, in others non-existent, and the rest susceptible of interpretation other than that suggested in his text. He has failed to prove that such demarcations, either in the chalk country or in the midland plain, existed as late as the seventeenth and eighteenth centuries. But even had he succeeded, it would be difficult to deduce that such boundaries were common in the Middle Ages. That, surely, is the important point, if we wish to know how the open fields worked at their zenith and not where they merely survived as a remnant.

Obviously there came a time in the history of every open-field parish when a comparatively static phase was reached. Signs that it had been reached would be found, for instance, in the abandonment of the practice of co-aration, in a certain degree of consolidation of strips, and in a change of the method by which land reclamation was effected. Instead of a third large field (in addition to the two already existing) being brought into cultivation, what was reclaimed from the waste was now held, on the margin of the open fields, in severalty. Where there had been much consolidation, there might be a desire to enclose: and this desire might be effected by the use of narrow balks which would at the same time preserve the rights of pasturage over the arable fields. For this reason, the dating of the appearance of balks, if such exist, between strips, is essential if we are to deduce anything relevant to the medieval strip-farming system.

The purpose of this article has been to determine the present position regarding balks as boundary demarcations, to stress the present state of ignorance of the subject and the pitfalls into which we may be led. A far

¹ Warks. R.O., MR. 14.

wider and more profound investigation could be made; and some indication of its extent is to be found in the Appendix. Here are listed a number of places for which evidence, varying in strength, of balks as strip boundaries may be found. In cases where a visit, or some examination of the evidence has been possible, these have been described. Where the information is sufficiently brief it has been quoted in full. Where considerably more has been written on the subject, references only are given.

The two most fruitful lines of investigation, for those who would attempt to establish the use of balks as strip boundaries, would appear to be as follows. Did the one-way plough ever hold sway to any extent in open-field country? If so, when and where? If evidence is forthcoming along these lines, is there any further evidence, in such localities, that balks existed between strips as distinct from all the other kinds of balks which existed in every open-field area? Secondly, there are certain areas where enclosure has never taken place, or incompletely so, and where balks dividing holdings in some sense exist or existed until recently. Did these balks themselves come into existence only recently, or at least in the modern period, as a result of consolidation, and as an attempt to satisfy the desire to enclose while respecting unalienated grazing rights; or are they, in fact, a survival of an ancient form of strip demarcation? The question 'when?' here is all-important. The answers will be found only by a patient and detailed study, such as the Orwins made of Laxton, of the localities in question—of their soil and contours, of their estate maps, terriers, and manorial records, and all other evidence printed, written, and unwritten.

APPENDIX

BEDFORDSHIRE

HINWICK. Orders for Hinwick (in court papers) 29 Oct. 1668. "That every person within the parish afforesaid shall leave a balke att the outsides of his lands betwixt man and man and the said balke to bee a foote and halfe wide under paine of 2s. 6d."—Beds. R.O. OR 809. I am indebted to Miss J. Godber for this reference.

BUCKINGHAMSHIRE

WENDON (*sic*, for WEEDON?). The following statement, made by William, James, and Jacob Malcolm in their *General View of the Agriculture of the County of Buckingham*, London, 1794, p. 29, is quoted by Gilbert Slater (*The English Peasantry and the Enclosure of the Common Fields*, London, 1907, pp. 75, 76) and cited by Dr Kerridge (*A.H.R.*, III, 1955, p. 40, n. 1). "About fourteen years ago the parishioners came to an agreement, and obtained an Act to lay the small pieces of land together. . . When division took place, the balks were of necessity ploughed up, by which a great proportion of the sheep pasture was destroyed." There is no indication that

these balks were strip boundaries. If they were, it is difficult to understand how sheep could be pastured on them. Of their extent, the writers go on to say "the wastes and balks in these common fields occupy a great space of ground, and yield but very little of any kind of produce."

CUMBERLAND

CASTLE CARROCK. Of this parish F. M. Eden, in his *State of the Poor*, London, 1797, II, p. 65, says that it "contains by estimation, 750 acres of cultivated land, 600 acres of cow common, and 1500 acres of mountainous common. . . The greatest part of this parish remains in dales, or doles, as they are called; which are slips of cultivated land belonging to different proprietors, separated from each other by ridges of grass-land: about 100 acres may have been enclosed within the last 50 years." Gilbert Slater quotes part of this passage (*op. cit.* p. 257) substituting, however, the word "strips" for "slips."

WARWICK ON EDEN. F. M. Eden (*ibid.*, p. 92) says: "It consists of 600 acres of common, and 1126 acres of cultivated land. . . There is a small common in the middle of the parish: almost the whole of the cultivated land has been enclosed within the last fifty years. It formerly, although divided, lay in long slips, or narrow dales, separated from each other by ranes, or narrow ridges of land, which are left unploughed. In this manner, a great deal, and perhaps the whole of the cultivated lands in Cumberland, was anciently disposed." Gilbert Slater quotes part of this passage (*ibid.*) substituting, again, "strips" for "slips."

DEVONSHIRE

BRAUNTON. See J. B. Phear, 'Notes on Braunton Great Field', *Trans. Devon. Ass.*, XXI, 1889, p. 202; H. P. R. Finberg, 'The Open Field in Devonshire', *Antiquity*, XXIII, no. 92, Dec. 1949, p. 180; W. G. Hoskins and H. P. R. Finberg, *Devonshire Studies*, London, 1952, pp. 265-71; Orwin, *op. cit.*, pp. 50, 51.

DORSET

GRIMSTON. Extract from Court Roll of the Manor of Grimston, 9 Oct. 1789. "It is agreed that the several tenants of this Manor do meet in the West Field within this Manor on the 14th inst., between 9 and 10 o'clock in the morning, to bound out the several Lands. And after the same shall be so bounded out it is ordered that each Tenant leave a Lanchett of a furrow between his and the adjoining land, under a penalty of 20s. for making a default." See Alfred Pope, 'Some Ancient Customs of the Manors of Stratton and Grimston, Co. Dorset', *Proc. Dorset Nat. Hist. and Ant. Field Club*, XXX, 1909, p. 94.

ISLE OF PORTLAND. See C. D. Drew, 'The Open Arable Fields at Portland and Elsewhere', *Antiquity*, XXII, no. 86, June 1948, p. 79; R. Douch, 'Customs and Traditions of the Isle of Portland', *Antiquity*, XXIII, no. 91, Sept. 1949, p. 14; Orwin, *op. cit.*, p. 50.

GLOUCESTERSHIRE

UPTON ST LEONARDS. Gilbert Slater, in his notes on *Some Recent Enclosures* (*op. cit.*, p. 63), says of this parish: "This enclosure took place at the same time as that of Castor and Ailes-worth, and was completed in 1899. The common field consisted of 1120 strips of arable land, total area 520 acres, and the 'balks' or 'meres' separating the strips were estimated at 14 acres." The date of enclosure was in fact 1895, the date of award or enrolment, 1897, and the acreage involved 516 acres. (W. E. Tate, 'Gloucestershire Enclosure Acts and Awards', *Trans. Bristol and Glos. Arch. Soc.*, LXIV, 1943, p. 63.) It will be seen that the balks constituted barely three per cent of the total acreage. This is a very small proportion if these balks consisted not only of paths, sikes, and possibly headlands, but also of unploughed land between the strips. At Laxton, where there were no balks between strips, "the sikes and other unploughed

ground amounted to about five per cent of the area of the common fields."—Orwin, *op. cit.*, p. 58.

Slater does not say where he obtained his evidence for stating that there were balks between the strips, but it may have been from an article by Canon Scobell who, incidentally, derives some of his interpretations from Seebohm (*art. cit.*, p. 215). In this article Canon Scobell says, "The strips, which thus appear to have existed generally in this and other uninclosed parishes, were separated from each other not by hedges but by lengths of unploughed grass—called 'balks' or 'meers'. . . ." With this article is published a photograph of a balk. Set into the ground, at the near end of the balk, is a meerstone, initialled 'N'. A complete and extended view of the balk is prevented by the figures of a lady and dog who are shown reclining at a distance of some three yards from the camera: further than these two figures, the balk cannot be seen. Mr Charles Green, commenting on this article, says, "The balks themselves have, in the intervening years, been ploughed out of existence as far as I can trace. Merestones, however, can still be found in this parish, in considerable numbers." ('Balks and the Open Field System', *Antiquity*, xxii, no. 88, Dec. 1948.) Although the following information is not given in his article, Mr Green has been so kind as to tell me that none of the merestones he was able to find dates from a period earlier than the eighteenth century: some date from the early, and others even from the late, nineteenth century.

The 1841 Tithe map of Upton St Leonards is of a scale: 3 chains to one inch (Glos. R.O./P3476/SD2/2). All strips and roads shown on it are numbered, and the numbers refer to a schedule. Unnumbered, however, are series of double dotted lines, with a very narrow space between—narrower than that indicating the roads. These appear through the fields where access balks would be expected: but double dotted lines such as these are not shown between the strips. Another map shows parts of the parish in 1780. This is a Survey of Certain Estates belonging to Benjamin Hyett Esquire (Glos. R.O./D.6), on the scale 12 chains to one inch, and shows headlands at the end of strips, but no balks between them. In view of the scale of these maps, however, narrow balks may well have existed without other indication than a single dotted line. Both stones and posts are shown in the Enclosure Award maps, and they are also found in what was part of the open fields (a part called Brimps Field) in the 1884 Ordnance Survey map.

WESTCOTE. On the main road from Burford to Stow-on-the-Wold, and almost equidistant between the two, occurs the parish of Westcote, consisting of two parts, Church Westcote and Nether Westcote. This parish is on the Oxfordshire-Gloucestershire border, its solid geology is Inferior Oolite, and it is situated almost at the junction of stonewall country with that of fences. It has never been enclosed. On the left-hand side of this road may be seen rectangular fields some 30 to 40 yards wide, divided by balks of about the width of one yard. Of this land the Orwins say, "Much of it is divided by grass balks, but most of the parcels are large having the appearance of small fields rather than of strips, and they suggest that there has been a good deal of consolidation at some time, the balks taking the place of hedges and boundary marks."—*Op. cit.*, p. 46. On the other side of the road, however, between it and Church Westcote, are a number of considerably narrower strips—suggestively so. And the 1840 Tithe map shows that a century ago there were rather more of these narrow strips than exist today. One of the strip farmers (Mr Simmonds of Nether Westcote) provided the following information regarding the present position. The balks are called meres, they are "to part the land," and may be ploughed up between holdings when these are owned by the same man. He considered them most economical. They are kept as narrow as possible—2 to 3 feet—and are kept down by burning. Each mere belongs to the strip on the north side of it. Although never grazed, they were, within living memory, mown for hay. Only the fixed mouldboard plough is used, and this makes 'lands'—the strips themselves having each their special field name and no other generic term

to describe them. It would seem important that these balks should be dated, either by documentary or archaeological means. (For the difficulties inherent in the archaeological method, see Collin Bowen, M.A., 'The Problem of Roman Villa Fields', *The Archaeological News Letter*, VI, no. 2, 1955, p. 39.)

HAMPSHIRE

COMPTON. The following extract from a Court Roll, 1525, of Compton, is published by J. S. Drew in *Compton, near Winchester*, Winchester, 1939. "Lawrence Whytman has ploughed up a boundary, viz. a 'land-sherde', between the lord's land and that of Peter Fylpotte; he is ordered to keep it restored in future under pain of 40s."

NORFOLK

FORNCETT ST MARY. A visit to this parish last summer (1955) elicited that 'mere' balks dividing the lands had now gone. The previous owner (Mr Lincoln) of a $\frac{1}{4}$ -acre land said that the mere balks were boundaries, that they had proved useful as a pathway for the plough horses. He said that the fixed mouldboard plough was the only type used, and that with it lands were ploughed, known locally as 'beds'; also that there had been similar mere balks at Wacton.

CAISTER-ON-SEA. Mr Charles Green has described to me balks, in the form of small ridges between lands, under turf, which he noted while excavating the Roman site in 1951. The lands were parallel to the contours on a very slight slope.

HAPTON HOLE. My attention was directed to this district of Hapton, near Norwich, by Mr Charles Green, on the basis of information which he had obtained from Mr R. Rainbird Clarke, Curator of Castle Museum, Norwich. A visit to Hapton Hole last summer (1955) revealed a small field divided into three strips called 'londs' separated by mere balks consisting of grass and weed, and about a yard in width. These londs and their mere balks were not straight-sided rectangles but of the reversed-S shape, suggesting for the one, if not for the other, a certain antiquity. (See S. R. Eyre, 'The Curving Plough-strip and its Historical Implications', *A.H.R.*, III, 1955, pp. 90-4.) Another mere balk was said to exist in a neighbouring field, but this was not inspected.

RUNTON. This parish, near Cromer, is still unenclosed. Gilbert Slater said of it: "There is a tendency for adjoining strips of land to be let to one and the same farmer and he is allowed to plough down the balks, in Runton called *lawns* or *loons*, which separate them."—*Op. cit.*, p. 331. A visit to West Runton last summer (1955) and a few enquiries made on the spot elicited the following information. On one large arable field there are a few balks separating strips. These balks consist of grass, dock, and other weeds, and are supposed to be maintained to the width of one yard. They are called 'mire' balks, not lawns or loons. There used to be mire stones at the end of some of these. One is supposed to be still in position, although now in a hedge, but a rather cursory search for it proved unsuccessful. The strips, straight-edged rectangles, rather than the balks, are called 'londs' (to rhyme with 'ponds'), although the 'd' sometimes fails to be articulated. The londs vary in width: some are 10, some are 20 yards in width, some are an acre, some half an acre in extent. They are made with the fixed mouldboard plough into lands which are also, confusingly, known as 'londs'.

The practice now seems to be contrary to what Slater described, in that if adjoining strips (belonging to different owners) are let to one and the same farmer, he must not plough down the mires. They may disappear only as the strips are consolidated among owners themselves. Since this land has never been enclosed, common grazing rights remain: two flocks of sheep, one after the other, are entitled to graze over the stubble after the harvest has been lifted. There are, in fact, no flocks in Runton and no one knows now who are the commoners: but these

unalienated grazing rights have precluded the erecting of barriers such as hedges or fences. For the information regarding grazing rights I am indebted to Canon F. H. Matthews, rector of Runtun, and for the rest to farm labourers, working in the field, to whom he kindly introduced me.

NOTTINGHAMSHIRE

NEWARK. See M. W. Barley, M.A., F.S.A., 'Documents Relating to the Manor and Soke of Newark-on-Trent', *Thoroton Society, Record Series*, xvi, Nottingham, 1956, Introduction, pp. xlvii-xlviii, and Survey of the Bishop's Demesne, pp. 46-53.

PEMBROKESHIRE

HAVERFORDWEST. H. L. Gray, in his *English Field Systems*, O.U.P., 1915, p. 174, quotes from a note prefixed to the survey of the royal lordship of Haverfordwest, made in 21 James I. "And wee holde it conveynient that for all exchaunges to be made of anie peeces of land betwixte the Tennantes for conveynencie, that the same be made in writinge and presented at the next Courte to the Stewarde to be Recorded, and that Notwithstandinge the exchaunge the auncient landshares and meares betwixt the peeces be preserved."—Land Rev., M. B. 238, f. 37.

PERTHSHIRE (SOUTH)

H. L. Gray (*op. cit.*, p. 165) describing the system known as 'runrig' in southern Perthshire, quotes from James Robertson's *Southern Perth*, 1794, p. 65: "But in our times nothing can be more absurd, than to see two or three, or perhaps four men, yoking their horses together in one plough and having their ridges alternately in the same field, with a bank of unploughed land between them by way of boundary. . . The land is like a piece of striped cloth with banks full of weeds and ridges of corn in constant succession from one end of a field to the other."

RUTLANDSHIRE

NORTH AND SOUTH LUFFENHAM AND BARROWDEN. Gilbert Slater states (*op. cit.*, pp. 64, 65): "The first steps towards the enclosure of these three parishes were made immediately after the passing of the 1876 Act: the Enclosure Act was passed in 1878, and the awards were made in 1881 and 1882. Out of 5480 acres in the three parishes, 4800 were common-field arable, a heath claimed by Barrowden and South Luffenham occupied 390 acres, and much of the remainder was commonable meadow and pasture. . . The report of the Enclosure Commissioners says of Barrowden that the 1240 acres of arable land 'is divided in 2790 strips, some not more than 12 feet wide, each divided from its neighbour by a green balk, which is a nursery of weeds.' Old farmers, however, assured me that the balks were mostly gone before enclosure. Field reeves were elected, and they settled any dispute that arose in consequence of the absence of balks, and individual farmers quickly detected, by pacing across their strips, if a furrow had been appropriated by a neighbour."

WILTSHIRE

VALE OF WARMINSTER. The Rev. Canon Jackson, F.S.A., in his article 'The Vale of Warminster', *Wiltshire Archaeological Magazine*, xvii, 1878, p. 294, stated: "There is, in this country, and there used to be a great deal more, of what is called 'common field', i.e., large tracts of unenclosed arable, held in 'severalty', not unlike our modern Poor Allotments—strips or pieces, held, either by different persons, or, may be, three or four, by one and the same person. The strips are marked off from one another, not by hedge or wall, but by a simple grass path, a foot or so wide, which they call 'balks' or 'meres'."

An Answer to Poverty in Sussex

1830-45

By A. C. TODD

THOUGH the founding of the Royal Agricultural Society in 1838 arose out of the acute and prolonged depression in farming, it might have occurred some years earlier on the disappearance in 1822 of the old Board of Agriculture. Faced with a refusal by the government of Lord Liverpool to provide any further funds for its maintenance, the President, Davies Gilbert, suggested that a new lease of life might be gained if the Board became a voluntary society, and membership was opened to the public through the payment of subscriptions and donations. The project failed, and the Board was dissolved, but the idea was not abandoned, and finally flowered as one of the many and varied efforts to break the deadlock of poverty and unemployment in agriculture.

The heavy burden of the poor rate, diminishing rents, uncultivated land, idle labour, and empty stomachs, leading to the violent and wanton destruction of property, were the outward symptoms of a *malaise* for which no one seemed to know the cure. William Gausden, coachman to Lord Charles Fitzroy, giving evidence about the reasons for rick-burning in Sussex in 1830, wrote down: "my Beliefe is this that the fiers were not spite to eny indiviead but to open the eyes of the NO Bileity in reagard of lost of the land for the want of imploy of the Labor in tilling it." The nobility were not blind to the blight which had settled on English agriculture, nor unaware of the real hardships of hunger and poverty, and the humiliations of poor law relief. Some of them, for instance, sensibly reacted to the suggestions advanced in 1801 and 1819 that one way of relieving distress among landless labourers would be to provide them with allotments. Imaginative landowners were prepared to experiment locally and on a limited scale on these lines. One of them was Mary Ann Gilbert of East-

bourne, the wife of Davies Gilbert, last President of the Board of Agriculture. Her private papers, kindly loaned by Major and Mrs Davies Gilbert of Herstmonceux, reveal the extent to which a private landowner was prepared to go to restore to the landless and workless labourer something of the independence which he had once enjoyed. Her work is an interesting pioneer effort to cope with the twin problems of poverty and unemployment by means of allotments.

Regarding compulsory relief as a degrading substitute for the spirit of "independent support," she had few illusions about the problem of poverty. On the one hand, the law of God and Nature said: "He that will not work, neither shall he eat"; on the other hand, the law of England said: "The industrious must maintain the families at the least of the most profligate and worthless." Parish relief she did not believe was any solution to this paradox. "I would rather see the Poor Rate sunk in the sea than employed as now to the misery and moral deterioration of my fellow creatures," she roundly declared. Like many other landowners of her time who saw good land going out of cultivation while labourers were required to be supported by an ever-increasing poor rate, she saw the answer to the problem of poverty in economic and moral terms, of land being made to produce its fruits, and of men being allowed to do honest work. She herself was prepared to demonstrate on her own land near Eastbourne that if the unemployed were provided with ground on which to grow their own food, the worst features of pauperism would disappear.

To break down a fixed conviction that the pauper was work-shy, she began a pilot scheme to cultivate waste land to the east of Beachy Head, which she calls "the beach." Dr Whately, Archbishop of Dublin, told her how he had tried to develop land in Ireland

as barren as a beach by transferring to it soil from meadowland. Describing his method to her he said: "I pared off the turf from part of a rich meadow, dug up a spit deep of the mould and laid it in a heap, then dug out the subsoil for about four feet more, which I carried to a barren hill, bringing from thence back carriage, the sand from the hill (as you would the shingle), with which I filled up the hole, then laid the top soil over, and replaced the turf. The meadow was of course rather better for the draining and the hill greatly enriched." Mrs Gilbert believed she could do the same by the double process of removing soil and clay from marshland, depositing them on "the beach" to the east of Beachy Head, and replacing them by flint pebbles taken from "the beach." If paupers were employed to do this work at fixed rates of pay, several objectives would be reached at the same time. Marshland would be drained, new land brought under cultivation, the Poor Rate of Eastbourne reduced, and proof found that paupers wanted to work.

By the beginning of November 1832 Mrs Gilbert was in a position to present to Whately an interim report on the progress of her scheme. Marshland had been purchased and part of "the beach" covered with its clay to a depth of three inches by twenty-seven paupers, who had worked at the rate of one rod per day. In spite of the dry summer of 1832, these paupers had produced a reasonable crop of potatoes, and seeing the possibilities of the scheme they were now anxious to hire at 3d. a rod or 40s. an acre as much of the beach as the parish were willing to fence off to keep away stray cattle, "who much relish the produce." In anticipation of this, a wall was built parallel to the coast road, and a gateway made fitted with the first iron gates seen in Sussex. As the labourer opened the gate his eye caught the warning: "Here waste not Time and you'll want not Food." It was claimed that 174 paupers, mostly married, were managing to support their families on this land, indignant that some of the local landowners seemed to prefer that they should receive 2d. a day as dole, while good land

"in fine corn country" was going out of cultivation. Of these 174, 117 had punctually paid their second year's rent for twelve rods each and no one had forfeited his land for trespass. One man Mrs Gilbert had provided with a cart and horse, the cost of which he had paid off through the sale of his produce. Because of his good husbandry he had now been permitted to rent a further three acres on condition that he also maintained a brother. One old man of sixty-seven had done so well with crops of potatoes, turnips, and mangel-wurzel that he had quadrupled the quarter of an acre he had originally rented and was now building "shelters" for himself, his cow, and his pigs. But in spite of these results, the vestries were sceptical and uncooperative, maintaining that the physical gain would be offset by a moral loss, for the labourers would actually learn to become independent.

Whately suggested that more trials should be made and then the results submitted to the Poor Law Commissioners as a possible local solution to pauperism. Before this could be done, some definite answers would have to be found to questions which the Commissioners would be sure to ask. For instance, did the day's labour of one man per rod mean spreading the soil over "the beach," or did it include the digging of that soil from the marsh and filling up the hole again? How many average men and boys could, in a week, prepare an acre of untouched "beach" and bring it into a state fit for planting? Had seaweed been tried as manure, as in Cornwall? Could it be brought in boats from Beachy Head? Could *beta maritima* be grown as cattle food? What was the best kind of hedge? Whately recommended sea buckthorn, or better still furze ditches made by digging two ditches with a mound between, on which was planted the furze, reinforced with tamarisk, as in Cornwall.

Mrs Gilbert reckoned that the cost of bringing one acre of beach into a state fit for cultivation was £16, but an Assistant Poor Law Commissioner who inspected the site put it at not less than £130. An independent assessor, one Pitman, reckoned it at £30, but

Whately advised her to proceed even if it cost £50, because it would be "a profitable speculation if the land be let at £2 since that would be 4 per cent on the outlay which is more than one can get in the Funds."

Whately was anxious that she should begin a long-term experiment, not with a view to the immediate benefit of neighbouring labourers, but by taking labourers from anywhere, to ascertain how much work a man could do per day. But this did not appeal to her. What she felt was needed was immediate relief to the labourer and a reduction of the poor rate. Through persistent pressure on the Eastbourne vestry, by bringing before them her own evidence and that of Whately's brother, the vicar of Cookham in Berkshire, who claimed that he had saved £15,000 in poor rates in eight years by setting paupers to cultivate "gravelled" soil, she succeeded in making them accept her views. They agreed that more "beach" land should be developed with pauper labour, each pauper to be paid by the parish for actual work done, and to be allowed to keep his crops after he had repaid the parish for the clay and soil.

Lord Liverpool, to whom she sent some specimen potatoes grown "on the beach," generally approved of the plan, though he admitted that he had a poor opinion of the Sussex labourer who drew on the poor rate "by habit" more heavily than the labourers in any other part of the country. This Mrs Gilbert strongly denied; she told him that when she had asked labourers whether they wished to emigrate they had invariably replied: "There is America in England." "There is," she said, "far more intelligence amongst labourers than those suppose who have not questioned them, they eagerly read the papers in hopes of the promised amendment of the Poor Laws, and say they believe the Government has forgotten them." In a public letter of November 1833 to the overseers of the parish of Eastbourne, she pointed out how in 1832 between four and five thousand pounds had been spent on the relief of those "not infirm" who were indignant at being kept useless on the roads in sight of

land going out of cultivation, while they watched foreign corn being imported from Newhaven by land carriage to Lewes "with heavy tolls."

It is not surprising therefore that Mrs Gilbert early became a member of the Labourers' Friend Society, for its aims coincided with her own. Having proved that labourers would work even on land which they had to reclaim themselves, she was convinced that the amelioration of their condition was bound up with allotting them land at a fair rent which they could cultivate by spade husbandry. The allotment system and educating the labourer in good husbandry were the key to restoring independence to the peasantry of Sussex, especially if supported by sound moral teaching. When she let land to be turned into allotments, each tenant received a printed card bearing these words of pointed advice:

"Two glasses of gin every day at three half pence a glass cost four pounds eleven shillings and threepence a year, which would pay for:

	s.	d.
A Man's shirt	6	0
A pair of men's stockings	1	9
A pair of women's stockings	1	6
Shift and Muslin Cap	3	8
Printed Cotton Gown	5	6
A man's Cotton Shirt	4	0
A man's fustian Coat	16	0
A pair of Blankets	12	0
A neck Handkerchief	1	4
A pair of men's shoes	8	6
A pair of women's shoes	4	0
A Flannel Petticoat	2	6
A Coarse Cloth Cloak	7	0
A quilted waistcoat	4	0
Fustian Trousers lined	7	6
A pair of Cotton Sheets	6	0."

Edwin Chadwick thought this excellent, but wondered if much could be done in a locality by a group of individuals without the support of the Government. In a letter of 9 December 1833 to Mrs Gilbert he urged that "the landowners should unite with the labourers and get up petitions praying the parliament to put an end to all local discretion and abuse and appoint a special agency for dispauperising the country." Research of the kind that Mrs Gilbert was doing was necessary if the New Poor Law Bill of 1833 was to provide this special agency which Chadwick

had in mind. Its provisions she found profoundly disappointing—nothing about bringing more land under the plough, growing more wheat, making bread cheaper, encouraging more investment in land, solving the problem of the unemployed. "We make bread dear by paying a double set of labourers," she said, "our own for standing still against their wills, and foreigners for growing the food we buy." This she believed was the core of the trouble, and not, as the Lord Chancellor stated, that "able-bodied men prefer a small sum in idleness to a large sum in wages." Using all her powers of persuasion she called upon men of influence in Sussex to devise some method of determining whether a labourer would work or not before he and his family were forced into the workhouse. Nothing is more remarkable than the courage and persistency with which this woman advocated measures to see that the labourer had a fair deal, and she did not lack support. On 10 April 1835 the Guardians of the Poor of fourteen parishes from Seaford to Pevensey, on the invitation of the Poor Law Commission, met at Eastbourne, and not only protested against the forced separation of man and wife, but issued the following statement. "Nine paupers, for ten weeks up to January last, on the bleak downs near Beachy Head, drew in their Hand Carts and for £6 an acre, the same quantity of Chalk for which Surveyors allow a quarter part more, that is £8 for this labour when performed by cattle, for which hard work the poor fellows expressed themselves thankful, stating that they liked it far better than being on the roads useless."

In spite of the new Poor Law, she proceeded to develop her allotment system and to think out methods of improving the whole business of husbandry. She advocated supplying workmen's cottages with tanks to catch rain-water, and experimented on her own farms to show that a tank 12 ft by 7 ft was sufficient for a large family and six horses. One tank 23 ft by 11 ft was built for the Eastbourne Union and was more than sufficient for all the uses of its 150 inmates. The tanks she had in mind were of two kinds, the

more familiar barrel-shaped butt resting on the ground and covered, and a more elaborate kind which was dug out of the ground. One built by the Eastbourne Vestry was 20 feet deep, 10 ft in diameter, cased with a flint wall 9 inches thick, the whole covered in with grey lime mortar and domed over by brickwork "in the Egyptian manner." It was claimed that soft water, thus stored, was good enough for drinking, and especially if the water was filtered by placing inside the tanks a board covered with pebbles, sand, or powdered charcoal.

From Cornwall, through a Mr William Gill of Chacewater, she collected evidence to show that broadcasting wheat was wasteful, and that dibbling it produced a higher yield, as well as being more economical. Gill achieved this by placing three grains of wheat into a hole measuring 4 inches in depth and 7 inches across. But as she was not satisfied that dibbling was more satisfactory than drilling, she gave £10 to the Labourers' Friend Society to ascertain "the comparative produce and cost of broadcasting, dibbling, and drilling of wheat." She investigated the best method of stacking wheat in the open to protect it from rain and advocated the Cornish "Arish Mow." In Cornwall, which she often visited with her Cornish husband, she had noticed the practice of threshing the grain and storing it on the floor above the cattle shed, where it remained free from damp and vermin, a method also practised in Switzerland. To her labourers in Sussex she therefore passed on the advice of stacking the wheat like haystacks on stone piles, rather than in barns. She was tireless in circulating information about the advantages of forking the soil, of the stall-feeding of cows, and of the value of conserving liquid manure. Whenever she let land, the terms always included the improvements which she was trying to introduce. A tenancy could be forfeited if it was proved that any hay, straw, and manure had been left to waste on the roadside. The printed terms of a lease always included the advice, "It is recommended to fork the land as soon as convenient after Michaelmas, laying it up

in ridges for the benefit of sun and frost." Competition was also encouraged, as the following notice shows. "One penny, three half pence, and twopence per ear will be given in 1843 by Mrs Gilbert for the greatest number of ears of wheat from one grain, the plant being produced complete at the next Battel Horticultural Show."

The success of the allotment scheme may be gathered from the fact that while in 1830 Mrs Gilbert had some fifty allotment tenants, this number in 1835 had increased to 213, all of whom (with the exception of two), it was claimed, had, through their products, paid their rents. A reason advanced for this success was that she gave to each tenant a card, on one side of which were printed hints about the use of manure and how to make a compost heap, while on the other side were printed injunctions about Thrift and the value of Ready Money. The latter are worth reprinting.

"It makes all the difference to comforts and character whether a man takes up all his things at the shop as he wants them and then pays for them on the Saturday night, or whether he carries the money in his hand when he takes up the goods. In one case, he will always have the feeling of being in easy circumstances; in the other, he feels that he is a poor man; yet in both cases he has the same income and spends the same, except that when he has the ready money he can go to what shop he pleases and so makes his money go much further; and the shopkeeper too, is much more glad to see him and thinks better of him. And all this difference is made by just contriving to have one week's pay forward instead of backward; to live, not one week under another, but one week over another."

The *Sussex Advertiser* of 9 April 1844 described this allotment system as one of successful "home colonization," implying perhaps that if it were generally adopted it would do much to reduce the desire for overseas emigration. One observer, Mr J. I. Burns of the Labourers' Friend Society, wrote to the secretary describing a visit he had made to an allotment tenant at Javington. Here he had

found the man and his family, together with an aged mother, living in a cottage to which was attached a small shed for the stall-feeding of cows, and adjoining that a tank for the drainage of liquid manure. He worked three acres of land, two and a half of which were arable. The best crop at the time of inspection was the mangel-wurzel because it was fertilized by the liquid manure. It would seem that Mrs Gilbert had insisted that the tenant should experiment with the stall-feeding of cows, in return for which she had advanced him £5 to buy a cow. This he had repaid at the rate of 1s. 6d. per week, and was convinced that as a result of his trials cows gave more butter when stall-fed than in the open air "as 7 lb. to 5 lb." An examination of the tenant's accounts showed a flourishing state of affairs.

From 16 January to 26 July 1840,	
278 lb. of butter made, sold at 1s.	
a pound	£13 18 0
2 calves sold for	5 18 0
Milk for the year, sold and given to the pigs	10 0 0
Probable produce of 88 rods of wheat at 8s. a bushel, say 19 bushels	7 12 0
Ditto of 40 rods of oats, at 4s. a bushel, say 14 bushels	2 16 0
Probable amount of butter for rest of year	6 8 0
	46 12 0
Deduct rent and rates	£12 12 0
Deduct seeds	2 0 0
Deduct Hired Labour	2 0 0
	16 12 0
	£30 0 0

Burns's final comment to the secretary of the Society reveals no doubt in his mind about the success of the allotment scheme. "Contrast this with the probable result of the poor man's fortune if he had not thus been rescued from destitution . . . he gives to his country, by thus giving to his family, a considerable income; he saves to his country, by not becoming burdensome, another considerable increase."

Sydney Smith was almost equally enthusiastic. Writing to Mrs Gilbert in February 1841 he agreed that it was sound in principle to let the poor have small allotments of land.

But he was not quite sure about the stall-feeding of cows, still less about the general application of the principle of advancing money to buy cows. "I am not so sure about the cows, and as long as they live, it is very well, but who is to ensure this? And to replace the loss? In half an hour a poor wretch is hurled from the beatitude of his milky way upon the bare earth and if he has not the good fortune to live near Eastbourne he cannot get up again." Gently but firmly and in a tone of good-natured banter, he suggested that the stall-feeding of cows might be modified. "I have always considered the pasturing of cattle to be a perfect barbarism in agriculture—suppose Guillemard's¹ servants were to walk over their Bread and Butter and lay down upon it?" he questioned, and added that perhaps the cows ought to be let out for two or three hours a day in the open air, for "without this their health is apt to give way."

Seymour Tremenheere added his own testimony. "Re your mode of cultivation I have no doubt. There is a mine of wealth of moral and social good in the undeveloped resources of the land of England, the value of which it would be difficult to over-estimate. It is but beginning to be opened. Your example, however, must have greatly contributed to draw attention to it." (Letter to Mrs Gilbert, September 1842.) Tremenheere was speaking as one of the first inspectors of the Council of Education, and he had a special reason for writing to her, because he had been instructed by his Council to visit and inspect what was perhaps Mrs Gilbert's greatest achievement. This was the founding of two agricultural schools, one at Willingdon and the other at East Dean.

Tremenheere had been called upon to furnish a report on the industrial schools of the country, as provided for by the Poor Law Amendment Act, but these "self-supporting agricultural schools" of Mrs Gilbert's were part of the tradition of the older craft schools. The main idea was to teach the children of

allotment holders the rudiments of education, employing a master to do this who would otherwise have been in the workhouse, and paying him by the labour of the scholars. George Cruttenden, the first master of Willingdon School, has described how his school functioned. To his twenty scholars he taught reading, writing, accounts, the church catechism, the collects and psalmody, "on the National plan with the approval of the vicar." For this he received no salary, but took a fee of one penny per week from each scholar, and taught them from nine o'clock in the morning until midday. After a two-hour break, the children again assembled, and from two to five in the afternoon they were engaged in helping him to cultivate the land. Of this voluntary activity, Cruttenden recorded: "I have not lost one from dissatisfaction and I am glad to say that they willingly assist me." For the School House he paid an annual rent of £10, and £15 for the five acres of land which he farmed. This he claimed he easily paid through the sale of his produce, although he had no salary and had to maintain a wife and four children. The school institutionalized all the ideas which had become identified with Mrs Gilbert. The building had attached to it the usual shed for the stall-feeding of cows, the tank in the rear to draw off the liquid manure, the tanks to collect roof water, a pigsty, beehives, and storage above ground for grain. The same pattern was to be seen at the second school, opened in 1842 at East Dean, whose master, J. Harris, had once been a pauper with his wife and five children in Eastbourne Union. It was claimed that their keep in the Union at 3s. a head cost the rates £54 a year, "equal to the rent of 273 acres let as a sheep walk at Eastbourne at 4s. an acre—but he now maintains himself on five acres," said Mrs Gilbert. The link between labour and learning, which these schools fostered, was strengthened by moral and social values, which Burns was quick to point out in his report to the Labourers' Friend Society.

¹ John Guillemard was the brother-in-law of Mrs Gilbert's husband, Davies Gilbert, President of the Royal Society. He had been a member of the Land Commission set up to enquire into disputes after the American War of Independence.

"Now the education received here is such as is exactly needed for the probable destination of the children hereafter and calculated to improve their moral and physical condition in this world and to lay the basis of their eternal welfare hereafter; it cannot fail and there are thousands who may read this able to do the like, with the like probable and most important results."

Mrs Gilbert was less interested in the results of her work in a future life than in their immediate effects on the economic welfare of the labourer here and now. There is no doubt that her experiments attracted wide attention. She wrote a paper on "The Allotment System" which was read on 7 February 1844 to the Highland Agricultural Society at Edinburgh, with the Earl of Rosebery in the chair. A report on the Self-supporting Agricultural Schools was published in *Chambers' Edinburgh Journal*, 6 July 1844. Edward Sabine in October 1844 asked her for a paper embracing all her experiments and this Lord FitzWilliam presented to the Statistical Section of the British Association. On the evidence of Henry Coleman, her allotment system aroused wide interest in the United States of America, the Americans being astonished that "so much produce could be obtained by manual labour." Lord Erne in Ireland, and the earls of Essex and Devon were frequently asking her for information, while Viscountess Tamworth wanted to found similar schools at Shirley in Staffordshire.

When she died on the 26th April 1845, it was already generally realized that she was one of the pioneers who sought to abolish poverty by encouraging labourers to grow their own food on land let at economical rates. This is her greatest title to regard, that with vision and humanity she rescued the "forgotten men" from their position of dependence on the landowners, and through spade husbandry taught them self-respect. This was part of a wider plan to prove that land was capable of a much higher rate of productivity, a lesson not completely learnt until the submarine menace of the 1914-18 War. Her self-supporting agricultural schools were a vital part of this wider plan and re-introduced the old principle of a relationship between labour and learning, again not entirely appreciated until the days of the University Extension Movement. As the *Sussex Advertiser* remarked in its obituary notice, "In carrying out this plan, her object was a double one, for it was a part and a valuable part of her system to show that, as Cobbett said of the gallows, idleness and the workhouse was the worst use to which a man could be put. Mrs Gilbert by her industrial schools and by locating a family on a given small area of land also managed to prove the error of supporting the pauper population of this kingdom in idleness and of their continuing as mere consumers when they might be much better employed as producers of wealth."

Notes and Comments

THE BRITISH AGRICULTURAL HISTORY SOCIETY

A one-day conference was again held jointly with the Association of Agriculture at the University of London Institute of Education on the 10th of December 1955. Three papers were given all of which related to some scientific aspect of agricultural history. This marked a change from the previous two con-

ferences, which had been devoted to regional studies. The chair was taken by the President, Sir James Scott Watson, and about fifty people attended the conference, which was extremely successful.

The Annual General Meeting and Conference will be held this year at Florence Nightingale Hall, University of Nottingham,

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List of Books and Articles on Agrarian History issued since September 1954¹

Compiled by JOAN THIRSK

BOOKS AND PAMPHLETS

- ADDISON, HERBERT. *Land, Water, and Food: a topical commentary on the past, present, and future of irrigation, land reclamation, and the food supplies they yield.* Chapman and Hall.
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¹ The date of publication is 1955 unless otherwise stated. The compiler wishes to thank Mr George Green for help with this bibliography.

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NOTES AND COMMENTS (*continued from page 51*)

on Friday 13 April. Accommodation has been reserved in Hall for the nights of 12th and 13th April. Miss Audrey Beecham, Warden of the Hall, will be acting as local secretary for the conference.

MEMBERSHIP

The number of members of the Society has now reached four hundred. The Executive Committee is naturally anxious, however, that it should continue to increase. With this in mind a pamphlet giving information about the Society has been included with this issue of the Review and it is hoped that members

will make a point of sending it to any friend who may be interested. Further copies of this pamphlet may be had on application to the Secretary.

Among recent new members have been libraries in Denmark, Finland, Germany, Italy, Japan, and Russia. The recent welcome increase in overseas members may to some extent be due to the efforts of the British Council, which circulated copies of the Review to its reading rooms throughout the world. Whatever the cause, however, it is a trend which we may hope to continue.

Letter to the Editor

THE RABBIT IN ENGLAND

SIR,—Is there any reliable information about the date of the introduction of the rabbit into England?

From the field-name 'Conygar' here on the old manor of Blackford and elsewhere (e.g. Dunster) it appears that the Normans may have been responsible.

Where was the original home?

Yours truly,

J. K. RIDLER

Minehead.

[A charter of 1176 refers to the taking of wild rabbits in the Scilly Isles. Does any reader know of earlier evidence?—ED.]

Book Reviews

W. G. HOSKINS, *The Making of the English Landscape*. Hodder and Stoughton, 1955, 240 pp. 25s.

Dr Hoskins's work on the English landscape has opened a department of historical studies which is of interest to the specialist as well as to the general public. It has its own clearly defined objectives with its appropriate instruments for attaining them, and it calls for a combination of techniques and attitudes that can only be acquired as a result of careful training and strenuous preparation. If, as may be the case, it is taken into the canon of academic 'subjects', it will certainly not be found among the soft options.

The basic requirement is a knowledge of archaeology and of economic history; but an indefinable feeling for landscape, which is more the result of endowment than of training, is also necessary. Perhaps, in the last resort, it is a study intended for those in whose veins the blood of their farming ancestors still runs and feeds the imagination with memories which a large-scale map or a view from a church tower will recall to life.

In the early chapters the archaeologist is entrusted with the main theme, but the historian has some interesting and thought-provoking passages, and the relation between changes in the landscape and underlying agricultural techniques receives frequent emphasis. Perhaps this ought to be still stronger. It was for agricultural purposes that settlement took place at all, and the relation between the actual implements of cultivation and the Bronze Age corn plots, the Iron Age square fields, and the long strips of the Roman villas and the English settlers is strictly relevant to Dr Hoskins's theme. It is perhaps a little confusing to have villages "with enclosed fields of Celtic type" side by side with Roman villas in "large open fields" without some explanation of the technological reasons for the difference; and to explain the Kentish square fields in terms of the turnwrest plough "which could produce either

strips or square plots, and either of these shapes could be associated with open-field agriculture" does not carry us very far. There is a footnote reference for which we are grateful, but the intricate problem of the Kentish field system is not disposed of in the few lines which Dr Hoskins devotes to it. And can we discuss balks (in the Seeböhm sense) and ridge and furrow without entering into the technicalities of ploughing? The plough with a fixed mouldboard, as Dr Hoskins says, would leave a wide furrow between the lands, so that balks could be—and perhaps were—dispensed with; and all land so ploughed would be in ridge and furrow though not necessarily in 'high-backs'; on light soil the ploughing would be practically flat, but the lands would still be separated by wide furrows so that balks would be no more necessary than on heavy soil. It is worthy of note that of the many aerial photographs that have appeared of ridge and furrow on deserted medieval sites not one suggests that balks existed, and examination on the ground has not supplied the missing evidence.

It should perhaps be taken as a delicate tribute to the late Dr Orwin that no explanation is anywhere offered of the actual process of ploughing, and that no mention of his famous book on the Open Fields is made in any of the recommended reading; but as one who has tried to introduce modern town-bred youth to the alien mysteries of field systems and landscape study, this reviewer would plead for a constant recapitulation of the mechanical basis of the art of cultivation; and for triumphant demonstration of the part played by ploughing in the making of field patterns it is not necessary to go further than the masterly article in the last number of this journal by Dr Eyre, the findings of which must surely be incorporated in any future edition of Dr Hoskins's book.

Even if Dr Orwin is so well known that he can be ignored, the subject of his study, the open fields of Laxton, might have been

allowed to speak as the only surviving example of the authentic open-field village (as distinct from remnants of open fields). As Dr Hoskins says, no poet has arisen to describe the life of the open fields before they were extinguished by enclosure (though there is an effusion in Latin, as he no doubt knows, celebrating the benefits enjoyed by a village in Northamptonshire *after* enclosure); but Mr Rose, the bailiff of the Manor Court of Laxton and farmer of 70 acres of which all the arable is in the three open fields, has a story to tell which is not without its poetry, though it smacks more of Crabbe than of John Clare. And when Dr Hoskins writes, under a picture of a deserted Leicestershire village, "here we have an entirely medieval scene," it is worth remembering that a view from Laxton church tower provides the best picture England can offer of a medieval village that is still alive. It has recently been bought by the Ministry of Agriculture in order to avoid piecemeal sale and enclosure, and though the tenants are a little apprehensive at passing out of the hands of an ancient family into those of the Welfare State, they go on as before and the village still lives. Let us sometimes praise famous survivals as well as lament forgotten losses.

Throughout the book Dr Hoskins presents us with a succession of bright ideas and new points of view to which students of the rural and urban landscape will return again and again. His book may be enlarged and improved but it is difficult to think that it can ever be superseded. While using archaeology and economic history as instruments, not ends, he throws new light on both. In regard to economic history—the only tool in his well equipped workshop that this reviewer shares with him—he raises many questions which invite discussion. He speaks of depopulation in late Roman times, and refers to the farms and villages, silent and in ruins, which the Anglo-Saxons found and in many places inherited. Much of the arable land appears to have been given over to sheep pasture, and the Germanic invaders seem to have occupied, if not an empty land, at least a land

where "most of these [the villages] were probably deserted by the fourth or fifth century" (p. 42). If this is the case, the age-old problem of racial continuity largely disappears, together with the supposition that there may have been continuous occupation of village sites on any significant scale. Dr Hoskins is not satisfied that any such site has yet been satisfactorily established, though there are "exciting clues" to suggest that some may yet be found. And it would be interesting to have Dr Hoskins's views on the origin of the numerous slave population of Anglo-Saxon England.

A contribution which all economic historians will welcome is the reference to the two building booms of 1570–1620 and (*circa*) 1690–1720. Of the first, Dr Hoskins says very rightly "it was an age of profit inflation for farmers as well as merchants and industrialists" (p. 122); but since farmers were many times more numerous than merchants and industrialists put together, the economic impact of their prosperity represents a factor in the history of economic change to which justice has not yet been done. The coincidence of Dr Hoskins's visual evidence of agricultural profit inflation with Professor Nef's industrial revolution of the same period will not be lost on students of the subject.

The second building boom is even more interesting. It was especially marked, he says, in the Midlands and the North, and as regional historians know, it coincided with expansion in every department of the local economy. The parish registers show that it was also a period of substantial population growth. The study of the landscape corroborates the view derived from more conventional sources that this was a period of boom, and that it ended with the commercial collapse of 1720 and the beginning of the demographic depression of the following two decades.

Dr Hoskins has an unrivalled eye for the detail which others overlook: the increase in the singing-bird population as a result of the enclosure of fields with white-thorn hedges; the fox covers laid out by the fox-hunting

gentry; the furlong brought in from the waste perhaps in the twelfth or thirteenth century and cutting across the direct path of the next village; the absence of lanes in recently enclosed country; and—on the subject of roads and green lanes—the “immense continuity of English boundaries.” To the subject of roads Dr Hoskins brings an almost poetic insight, and the treatment of canals and railways provides some of his most evocative pages. On the landscape of towns he has a chapter of twenty pages which bring together what little is known of this neglected subject; but it is a pity that all he can do for the landscape of today is to blot it out with the boiling lava of his quite unhistorical and indiscriminating rage.

On this subject, the poet in Dr Hoskins gets the better of the historian; the techniques of the London School of Economics in which he was trained are yoked with the brooding nostalgia of Wordsworth and John Clare, and the result is sometimes a flurry of feet and a cloud of dust, including, as we have come to expect, a quantity of mud at the expense of the Royal Air Force. But the desiccated calculating machine of the economist goes on grinding all the same, and there are times when it conveys a message which should be taken into account by the lovers of the pre-industrial landscape. Its beauty depended partly on the maintenance of a particular ratio between space and numbers of inhabitants, and this in its turn depended on the fact that the latter died almost—but not quite—as fast as they were born. When, in the villages and towns during Dr Hoskins’s “flowering period” of England, the seventeenth and early eighteenth centuries, it is found that burials rose again and again above baptisms; when in Nottingham, that “Paradise Restored” (p. 218) between 1732 and 1739, there were 1022 “infant” burials out a total of 2226; when in the beautiful city of Norwich John Evelyn noticed the naked corpses piled high on one another awaiting decomposition because there were too many to bury; when the poor who lived outside the newly repaired walls of Chester were so rank with disease and filth

that the respectable citizens who lived within the walls held their noses and gave them a wide berth; when gibbets, for those who survived the hazard of infancy, were so numerous that travellers are said to have used them as landmarks, there is some reason for thinking that the melancholy lucubrations of Wordsworth on the coming of “social industry” to the countryside and the lament of poor Clare for his vanishing commons are a very partial rendering of the still sad music of humanity which these writers—and Dr Hoskins—are at pains to convey during the period of transition to the industrial age. There were features in the landscape of the “flowering period” of England which would have offended Dr Hoskins if they had survived; and it is surely a weakness of the aesthetic interpretation of history if its judgments are to be determined by the superior durability of the dignity of free-stone compared to the evanescent squalor of stud-and-mud.

If Dr Hoskins’s complaint is that the industrial age condemns men to live as tools of the productive process rather than as human beings, many would agree; but the fact has to be faced that the industrial process has made possible a vast increase in the number of those who can live at all, and some of their efforts to come to life in a fuller sense might well fall within the purview of the historian of the landscape. Is there no significance in the individuality which is sometimes seen in domestic and institutional building, in the loveliness of flowers and trees which sets off many of our most commonplace houses and streets, in the parks and open places where twentieth-century man can possess his soul in quietness if he likes? And a reference to the post-war Dutch landscape as an example of what can be done by imaginative corporate planning would not have been out of place. The twentieth century may be doomed, but it is not yet dead. Some would say it is very much alive.

But whatever we may think of Dr Hoskins’s views on the twentieth century, his pre-eminence in the field which he has made so

conspicuously his own is unchallenged and unchallengeable. He has not only opened up a new branch of historical study, but in a single slim volume has placed it on a firm foundation for further development from prehistoric to modern times. This is a remarkable achievement and has come when it was most needed. It provides an organized centre of resistance to the tide of vulgarity and sheer vandalism which threatens to engulf the historic English landscape, and by its uncompromising challenge it stimulates the expression of the vital forces of our own age. Dr Hoskins thinks it is irretrievably lost. It is one of the special virtues of his book that it will help to prove him wrong.

J. D. CHAMBERS

R. B. PUGH and ELIZABETH CRITTALL (eds.),
The Victoria County History of Wiltshire,
Vol II. Geoffrey Cumberlege, O.U.P.,
1955. xviii+246 pp. 63s.

This, the second volume of the *Victoria History of Wiltshire*, is virtually a work by one hand, Professor R. R. Darlington having written seven of its eight sections. It is natural to think of it as the Domesday volume, for a text from the Exon Domesday smiles austere from the dust-jacket, and Domesday and its satellites with their several commentaries occupy one hundred and eighty of the two hundred and twenty-odd pages of text. Such a short title, however, would do less than justice to the editor's intentions, for its contents are explicitly described (p. xiii) as including a survey of "all aspects of Wiltshire civilization from the seventh century to the eleventh."

Readers of the *Agricultural History Review* may expect such a survey to comprise an account of the Saxon settlement and economy of the shire, referring closely to its topography. If so, they will be disappointed. This is not entirely because a discussion of the Domesday Survey is bound to overweigh, in a volume of this size, the history of the centuries that preceded it. The impressiveness of Domesday Book, and the difficulties that its study entails, naturally focus the historian's attention upon it. Yet it may be asked whether

in a volume of a county history in which material from Domesday Book is included, both as a commentary upon the end of the Dark Ages and as a great historical source whose elucidation is still in progress, it should be allowed to dwarf the earlier history in this fashion. And if it be urged that the documentary material of earlier date than Domesday is indeed very slight in comparison with the Survey, then surely that fact enhances the value of all supplementary evidence, especially that of topographical enquiry? Professor Darlington does not accept Dr G. M. Young's arguments for continuity between some Romano-British and Saxon settlements; he observes that the Saxons eschewed the uplands in favour of sites in the valleys of streams, but he says very little about what they did there. If Britain was really severed from her past by the Saxon invasions and her economy modelled entirely anew, the process by which the revolution was effected and maintained might be thought to merit exhaustive study. The outlines of the political and ecclesiastical history of Wessex have been drawn in other works, and we are not presented here with anything more than this conventional skeleton.

Only one manor in Wiltshire is described in the Exon Domesday, so the text of the Exchequer Domesday is not, as is its account of other south-western shires, duplicated and supplemented by that manuscript; but the Exon Domesday does contain three texts of geld rolls for Wiltshire, and these, translated and collated, add considerable weight to the Domesday section. The reader who turns from the translation to the commentaries will find no lack of information. The text will tell him what Domesday says, but he will not as readily discover what he is to make of it. The interpretation of Domesday's information in geographical terms will have to wait for the relevant volume of Professor Darby's survey, though even then the enquirer may find himself referred back to some such discussion of technicalities as the *Victoria County Histories* ought to provide. These technicalities make for reading that ranges

from the difficult to the prohibitive, and here the difficulty is increased by the existence of the geld rolls. Professor Darlington dismisses Professor V. H. Galbraith's argument that the geld rolls depend upon the Domesday Survey and are not earlier than 1086, but their discrepancies still exist; he admits, indeed, that "on some matters it is unlikely that any two scholars would ever reach agreement" (p. 177).

It may be noted in passing that if the V.C.H. convention of rendering *masura* by messuage is now to be discontinued, so ought that of translating *servus* as serf.

One's surprise in finding seven pages accorded to a chapter on Saxon art in Wiltshire is not abated by reading them.

G. H. MARTIN

V. R. WEBSTER, *Cruck-Framed Buildings of Leicestershire*. Reprinted from the *Transactions of the Leicestershire Archaeological Society*, xxx, 1954. The Guildhall Leicester. 32 pp. + plates, figures, and folding table. 6s.

To review a single article from a local journal is unusual; the Leicestershire society is to be congratulated for making articles available, and one wishes that all local societies were as cognizant of the wider interest that particular contributions to their transactions may evoke. The article is also an indication of the valuable field-work that members of a local society, without specialist training, can do: members of the Vaughan College Archaeological Society have helped to track down these houses, and one must echo Mr Webster's tribute to them.

The article makes a valuable contribution to the study of peasant houses. The distribution map shows that cruck building was widespread in Leicestershire; examples are scarce on the eastern limestone uplands, but, as we know, the jurassic ridge was an interruption and not a barrier. The concentration in the north-west of the county shows that timber from the waste of Charnwood Forest was an important source, though more than geographical factors are needed to explain the

distribution in detail. In the case of a village like Rothley, where cruck houses are so plentiful, one would like to know more about local conditions of land tenure; had the medieval sokemen become freeholders or copyholders? Mr Webster has good photographs and some scaled drawings and plans. He is aware of the importance of recording details of construction, and the plans of the best examples, at Hoby and Rothley, are most valuable. One observation which may be new is that crucks were sometimes pierced at the foot, so that ropes could be passed through them while rearing the house. One instance is quoted from Twyford in east Leicestershire of the common East Anglian practice of filling panels with upright stakes inserted in the main timbers. In many cases all that Mr Webster can do is to record surviving details of frames which have been in part removed or obscured by later work.

The most difficult problem is that of dating cruck construction. It does not seem possible to regard the position of a house in relation to the road as an indication of date, nor are crucks planted directly on the ground necessarily older than those mounted on bay stones or on a stone plinth. One wishes, however, that the author had tried to use such features, together with constructional methods, to suggest a more detailed chronology; it might have been hypothetical, and open to error, but it would have been a start. It is tantalizing to have only a verbal reference to mouldings together with *upper cruck* construction on the newer part of the house at Thurstaston; they can no doubt date it, and help to date the older portion. Will Mr Webster go on to do a detailed study of that house?

M. W. BARLEY

A. R. BRIDBURY, *England and the Salt Trade in the Later Middle Ages*. Oxford University Press, 1955. xiii + 198 pp. 21s.

Salt, in the 'storage economy' of the Middle Ages, as the late Professor Hecksher has pointed out, was a commodity of long-distance trade whose importance can nowadays hardly be grasped. Without it, meat and

above all herrings would not have been available as food; and perhaps barley would have been a less important medieval crop, since the enormous medieval thirst for beer was the consequence of eating salted food.

England was fortunate in the early Middle Ages in her brine springs in Cheshire and Worcestershire and her east coast salines. She was able to supply her home needs for salt, and even to export, through both aliens and denizens, perhaps a thousand pounds' worth or more a year in the early fourteenth century. But from the 1360's onwards England ceased to be a salt exporter, and became an importer of this still vital commodity.

This change is the central fact, while not constituting the greater part of the content of Mr Bridbury's book. For in the comparatively small space of 150 pages the author also gives us the essential facts about the main European areas of production, their techniques of production, their connection with the herring fisheries (Lüneburg with the Scania fisheries, for example), the changes in the pattern of the international salt trade, and the forms of local distribution in England. He shows how the salt produced from the salines of the Atlantic coast of France (especially from the Bay of Bourgneuf) conquered the English, Low Country, and Baltic markets because of its cheapness. For although inferior in quality, it was still cheap enough to be worth while importing for further refining and use by the Low Country fisheries.

The story is quite straightforward in its main outlines, but Mr Bridbury also fills in, with both skill and economy, some highly significant details. His treatment of the political events and social structure of fourteenth- and fifteenth-century Brittany and Poitou is a case in point, and incidentally a comment on the grave limitations of 'pure' economic history. Of even greater interest is his deft account of conditions in England which prevented the expansion of the English salt industry when the German and Low Country industries were declining. He em-

phasizes that the late fourteenth century was precisely the time when the expanding country cloth industry was attracting labour which might otherwise have been available. Mr Bridbury's refusal to become straight-jacketed in the over-simplification of the stagnation theory of later medieval development is worthy of note by agrarian historians.

It may be that the statistical side of Mr Bridbury's study will stand up least to further examination. His calculation of the total volume of the Bay Salt trade in the middle of the fifteenth century depends on too many dubious factors to be convincing. And recent suggestions by some French historians that English customs figures are not as impeccable as we had thought them to be may undermine some of Mr Bridbury's other figures. However, no work is ever definitive, and meanwhile Mr Bridbury is to be congratulated on a model study of a problem of economic history in its total setting.

R. H. HILTON

JOYCE YOUNGS (ed.), *Devon Monastic Lands: a Calendar of Particulars for Grants, 1536-58*. Devon and Cornwall Record Society, 1955. xxxviii+154 pp. 30s., from Mrs Miller, 7 Cathedral Close, Exeter.

The redistribution of estates that followed the Dissolution of the Monasteries was the greatest upheaval the English land-market has ever known. Its economic and social effects must always engage the attention of historians. Of the abundant documentary materials, many have been printed; but in the volume under notice the lately resuscitated Devon and Cornwall Record Society publishes a calendar of certain records which have been comparatively neglected until now. These are the Particulars for Grants, containing brief surveys and valuations of all the monastic lands in the county of Devon that were disposed of by the Crown from the Dissolution to the end of Mary's reign. All students of the subject will be indebted to the society and to the editor, Dr Youings, for this scholarly and fully annotated publication. In a valuable introduction Dr Youings describes the machin-

ery of redistribution and analyses its effect on the social history of the county. Her treatment of the largest grant of all, however, invites criticism. On p. xxi she speaks of the "quite extraordinary generosity" shown by Henry VIII to John, Lord Russell. On pp. 5, 6, she prints a provisional valuation, drawn up when the prospective grant to Russell had reached a total value of only £725. The fact

that it was presently raised to £1000 or more, but that, so far from showing extraordinary generosity, the king reserved an annual rent-charge on the property of nearly thirty per cent instead of the normal ten per cent, is relegated to a postscript in small type. In this case, while the facts are stated correctly, their presentation leaves something to be desired.

H. P. R. FINBERG

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The AGRICULTURAL HISTORY REVIEW



VOLUME IV 1956

PART II

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The Statistical Assessment of British Agriculture
by J. T. COPPOCK

*

Rhosili Open Field and Related South Wales Field Patterns
by MARGARET DAVIES

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The Development of Feeding Standards for Livestock
by CYRIL TYLER

*

Estate Management in Eighteenth-Century Kent
by G. E. MINGAY

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The Statistical Assessment of British Agriculture

By J. T. COPPOCK

(Continued from page 21)

EVALUATION OF THE RETURNS

THE returns have continued to expand in scope and complexity but their importance for the agricultural historian does not derive primarily either from their more recent developments or from the hazards of the experiments from which they originated, but from their value as source material for the reconstruction of past agriculture. It is a paradox that the more abundant is the source material the less highly is it regarded. The very abundance and continuity of the agricultural statistics reveal weaknesses and deficiencies which might not be apparent in a more limited body of evidence. Analysis of these will tend to over-emphasize the limitations of the data, but it must be remembered that many of these limitations are common to all such statistical data. The following examination of the returns may help to throw light on the worth of other sources such as the 1801 Crop Returns.

From statistical data of this kind, an answer is required to three questions: how accurate and complete are the data? how comparable is the information given in different years? what light does it throw on the agricultural changes taking place? Some answer will be attempted to each of these questions, though emphasis will be placed on the first and second. But one caveat must first be entered. The purpose for which the statistics were collected was neither the regional analysis of agriculture nor the study of regional changes in land use; it was to obtain national figures from which estimates of agricultural produce might be made, and which would indicate trends in the production of different agricultural commodities. Most of the limitations to be discussed apply to these national totals; but they apply more forcibly to the figures for smaller areas, which were produced, not as ends in themselves, but incidentally in the collection of the national totals. In a country such as Britain, with its great variety of natural conditions, in which relief, soil, and climate show considerable contrasts within a small area, attention must necessarily be focused on these small administrative units, the parish and the county; yet figures for these areas are least reliable and most difficult to interpret.

ACCURACY AND COMPLETENESS OF THE RETURNS

It is clear from the preceding summary of the evolution of the statistics that the figures for the first few years of collection must be treated with the

greatest caution. Opposition was still marked, the procedure was unfamiliar to both officials and farmers, and differences of interpretation by farmers were frequent. Official opinion regarded the period from 1868 to 1872 as too short to indicate reliably even the changes in the total area of cultivated land, but it was later felt that averages for the period 1871 to 1875 did provide a sound basis for comparison with later periods.¹ None the less, in each year from 1867 to 1891 the total acreage returned increased, the cumulative increase being more than four million acres. Part of this increase was due to changes in the basis of collection, but the greater part was due both to more accurate returns and to the expansion of the cultivated area by the improvement of hitherto uncultivated land.

The abolition of a minimum size of holding must have made a substantial contribution to the increase of more than a million acres from 1866 to 1867. Subsequent changes were less important; the alteration in the minimum size of holding from a quarter to over one acre was estimated to have reduced the returned acreage by not more than one-tenth per cent, while the adoption of the quarter-acre minimum and the change in the date of collection must have had very little effect. But the great contrasts in the livestock figures for 1866 and 1867 are clearly due in part to the change in the date of collection from 5 March to 25 June.² Changes in the acreage returns have also been caused by the alteration in the definition of land which could properly be included in the returns, but as these are closely bound up with the distinction between permanent grass and rough grazing, discussion will be deferred. Though the effects of these changes in the basis of collection have not always been numerically large, they do affect the comparability of the figures from year to year.

The annual reports which accompany the statistics do not apportion the remainder of the increase in the total acreage among the various causes; but their emphasis suggests that in the first fifteen years both increasing accuracy and land improvement were making important contributions, while for the following ten years the bulk of the increase was due to reclamation. Reports of new enclosure and improvement repeatedly refer to these activities in the "hilly districts," and it is clear that the scope for the extension of the cultivated area in Lowland Britain was limited.³ Yet both Highland and Lowland

¹ *Agricultural Returns of Great Britain*, 1872 (C675), p. 7; *Agricultural Statistics*, 1905 (C3061), p. x.

² *Agricultural Returns*, 1892 (C6743), p. vii; 1877 (C1878), p. 3; 1867 (C3941), p. 4.

³ The terms Highland and Lowland describe a fundamental twofold division of Britain, widely accepted by geographers and archaeologists, the boundary line being conventionally drawn from the mouth of the Tees to that of the Exe.

show the same trend of rising acreage in the early years, although the rate of increase was slower and the period of rising totals shorter in the south and east than in the north and west; thus, in Oxfordshire, the acreage rose until 1880 at an average rate of increase of $\frac{3}{4}$ per cent per annum, while in Cornwall the acreage continued to rise until 1918, at an average rate of $1\frac{1}{2}$ per cent per annum.¹ Similar trends are observable in the livestock returns, but the figures fluctuate more widely, as might be expected, and show a steady increase only in the first ten years. These facts confirm the impression that most of the earlier increase was due to more effective collection.

The progressive improvement in the accuracy of the returns must largely be the result of more complete enumeration. The Rate Books, on which great dependence had been placed in the compilation of parish lists of occupiers, seem to have been far from reliable guides, and many holdings or parts of holdings were at first omitted.² Such omissions were sometimes revealed on a change of tenancy, but the problem of achieving complete enumeration is one which has continued to cause concern.³ Even as late as 1938, 13,302 acres could be shown to be omitted from the returns of Buckinghamshire, while in 1941 some 250,000 acres were added to the total for England and Wales by the discovery of holdings which had previously escaped enumeration.⁴ The completeness and accuracy of the livestock figures are much more difficult to check than those for the acreage returns. Some observers believed that livestock grazing on moorland were being omitted because the land on which they were grazing was not, until 1892, returnable; confirmation of this was given by a ruling that such stock should properly be included in the returns.⁵

Other sources of greater accuracy in the acreage returns were the detection of the use of local measurements, and the extension of the large-scale survey of the Ordnance Survey. Numerous references occur to the use of local, particularly Scottish, Cheshire, and Lancashire acres in lieu of statute acres; corrections seem to have been made before the publication of the county figures, but errors of this kind must inevitably have entered into earlier

¹ While the scope for greater accuracy in Highland Britain was diminished by the absence of opposition, this gain is probably more than offset by unintentional errors and omissions.

² Not only holdings or parts of holdings were omitted, but also parishes or parts of parishes. Excise General Order, 8 May 1876, gives warning of this, and states that "numerous errors have been discovered in recent years."

³ *Agricultural Returns of Great Britain*, 1885 (C4537), p. 4.

⁴ E. Thomas and C. E. Elms, *An Economic Survey of Buckinghamshire Agriculture*, Part I, 1938, p. 11; and *Agriculture*, LVI, 1949, p. 234.

⁵ *Parliamentary Debates*, CXCVII, 1869, p. 830; Excise General Letter 244, 5 July 1872.

totals.¹ Before the completion of the 25-inch survey there must often have been ignorance on the part of both landlord and tenant as to the exact acreage of holdings and fields, particularly in those areas in which no Tithe Survey had been made.²

Inaccuracies also arose from the introduction of new items. Increases in the acreages of such items are often noted in the first few years for which returns were collected, but these increases are probably due to progressive improvements in the accuracy with which the returns were made, rather than to actual increases in the extent of land under such crops. While such changes do not usually affect the total acreage of crops and grass or the total number of any kind of livestock, they do modify the sub-totals. It is not possible to document most of these changes, but two examples, where the collection of new items had to be abandoned because of the poor response, will indicate what happened in extreme cases. In 1884 an attempt was made to collect numbers of poultry, but opposition was so strong and the results so suspect that it was abandoned after three years; similarly an attempt in 1885 to obtain the numbers of livestock born in the year of the return brought replies from only 220,980 out of the 509,186 occupiers to whom schedules were sent.³ The farmers were said to regard the requests as inquisitorial, and to be unable to comply in any case, since they kept no records. New items were continually being added, and old subdivided; after each change there was a period of adjustment, and the figures for the first few years in which new items were collected must be treated with considerable circumspection.

The decreasing proportion of estimates must also be borne in mind in considering the accuracy of the returns; estimates became both less necessary, as the fears and hostility of farmers gradually diminished, and more accurate as the officers became more experienced in making them. While a soundly based estimate was preferable to an unreliable or wilfully erroneous return, it is reasonable to suppose that returns were more accurate than estimates, especially in the case of livestock figures. The increasing accuracy of the estimates and the decrease in the number of estimates necessary thus both

¹ See, among others, *Agricultural Returns of Great Britain*, 1878 (C2133), p. 3, and 1889 (C5856), p. 4.

² An example of this may be found in L. L. Price, 'The Recent Depression in Agriculture, as shown in the accounts of an Oxford College 1876-1890', *Journal of the Royal Statistical Society of London*, LV, 1892, p. 7: "In the interval between 1876 and 1890 additional exactitude in the measurements contained in the various estates was secured, in a large degree in consequence of the publication of the sheets of the Ordnance Survey." See also *Agricultural Returns*, 1885 (C4537), p. 4.

³ *Agricultural Returns*, 1885 (C4537), pp. 14, 76-7; and *Agricultural Returns of Great Britain*, 1886 (C4847), p. 19.

made for greater accuracy in the returns, and the method laid down for making estimates would seem to have precluded the possibility of any gross errors.

CHANGES IN FARM, PARISH, AND COUNTY BOUNDARIES

While these observations are relevant to national, county, and parish figures, it is clear that the smaller the area, the greater their importance. Furthermore, in the smaller administrative units the effects of improving accuracy and more exhaustive enumeration are complicated by changes which are due to the procedure adopted in the compilation of the parish, and to a lesser extent the county, totals. Examination of these totals shows that they may vary considerably from year to year, sometimes showing increases and sometimes decreases; such changes, which are quite haphazard in their occurrence, are largely due, not to changes in the extent of land cultivated or of crops grown or in the numbers of livestock kept, but to transfer of farms from the summary of one parish to that of another.¹

Such transfers are primarily the result of changes in farm boundaries and in the boundaries of parish and county, but their effects are accentuated by the differing procedures adopted. The instructions given to officers in 1866 are quite explicit, but they do not always seem to have been followed; furthermore, in an attempt to overcome the prejudices of farmers against making returns, considerable latitude in their interpretation was allowed. Officers had been instructed that where separate farms in two or more parishes were occupied, separate returns were to be made for each farm; but later it was said that every effort was made "to save trouble to the occupiers by allowing them to make one or more Returns as they please," and that much latitude had always been permitted "with respect to the custom of returning separate farms or detached portions."² As a result, in addition to the changes which would have occurred in any case through the alteration of farm boundaries, quite arbitrary changes in county and parish totals arose from the whim of occupiers, who one year returned their land in this parish and another in that. It was also noted that some occupiers made returns in the county in which they resided "instead of for that in which the land is situate."³ In 1885 an apparent diminution of about 16,000 acres in the acreage returned for the East Riding of Yorkshire was explained as the result of casual interchanges of this kind with the West Riding;⁴ while, to quote a parish example, in

¹ See J. T. Coppock, 'The relationship of farm and parish boundaries—a study in the use of agricultural statistics', *Geographical Studies*, 1, 1955, pp. 12–26.

² *Agricultural Returns of Great Britain*, 1879 (C2407), p. 2, and 1892 (C6743), p. vii.

³ *Agricultural Returns of Great Britain*, 1883 (C3907), p. 3, and 1884 (C4142), p. 3.

⁴ *Agricultural Returns*, 1885 (C4537), p. 1.

1891 154 acres were transferred from the parish of Towersey (Bucks) to that of Emmington (Oxon) because an occupier holding land in both counties refused to make two returns.¹ Officers were instructed to ensure that returns were always made in the same county, but parish totals continue to show marked variations, some of which are due to changes of this kind.²

The interpretation of the parish figures is not assisted by the numerous changes in parish boundaries; such changes were particularly numerous when much of the fragmentation which characterized the ancient parishes was eliminated by the Divided Parishes Acts from 1876 to 1882.³ Many other changes were associated with the creation of the present machinery of local government; thus, of the 14,926 Civil Parishes of which the populations were given in the Census returns for 1881, no fewer than 3,258 had their boundaries altered in the course of the next decade.⁴ Comparison of parish figures before and after these dates is, therefore, difficult, particularly since it is not possible, as in the case of the decennial censuses, to adjust the parish returns to make allowances for these boundary changes. Nor can anything be done to adjust the parish totals to take account of the far more numerous, and unrecorded, changes in farm boundaries.

The interpretation of the parish summaries is not facilitated by the uncertainty which prevailed about the sense in which the term 'parish' should be used. In southern England, in particular, many small townships and hamlets of a few hundred acres were treated as separate parishes; thus, in 1866, the township of Little Haseley and the hamlets of Latchford and Rycote, all lying in the Oxfordshire parish of Great Haseley, were separately returned. This practice was particularly widespread in the first few years for which returns were collected, and since it is in general very difficult to ascertain the boundaries of these small areas, even greater uncertainty prevails about the land to which the returns refer. In 1886 officers were instructed that no township was to be returned as a separate parish which did not exceed 2,500 acres, and that only those parishes exceeding 5,000 acres which were already divided for Tax, Poor Rate, or other purposes, could be divided into two parts.⁵ Nevertheless some small townships continued to be returned

¹ Manuscript comment by Collector on Parish Summaries, Oxford County, Oxford Collection, 1891.

² Excise General Order, 20 March 1895.

³ These detached portions present particular difficulty, since it is not possible to ascertain whether the land in them was returned in their parent parish or in adjacent parishes, though some detached portions were returned separately where they lay in a different collection from their parent parish. However, the acreages involved are small and can generally be disregarded.

⁴ *Census of England and Wales, 1891, General Report (C7222)*, p. 2.

⁵ Excise General Order, 12 April 1886.

separately; thus the hamlet of Dagnall in the Buckinghamshire parish of Edlesborough was returned until 1934.

DIFFERENCES OF INTERPRETATION BY FARMERS

The reliability and comparability of the statistics do not only depend on the accuracy and completeness with which the returns were made. Equally relevant are differences in the way in which various items in the returns were interpreted by the farmers in different parts of the country. These differences affect both the total acreages returned and the apportionment of those acreages between different crops, and, to a lesser extent, the number of livestock and their subdivision into various age classes of stock. These differences arose primarily from difficulties in defining the crops and livestock in such a way that they would mean the same thing to farmers in all parts of Britain. Differences of interpretation were most common between 1866 and 1871, but they also occurred whenever crops or stock were returned for the first time, when established definitions were changed, or when existing items were subdivided. Apart from the effects of different agricultural practices in different parts of the country, it was only to be expected with the large numbers of both farmers and collecting officers that uniformity of procedure and interpretation would be difficult to achieve.¹

The chief sources of difficulty were the distinctions between permanent grass and rough grazing and between permanent and temporary grass. Uniformity of interpretation is of great importance in both cases, for the boundary between cultivated and uncultivated land is determined by the former, and that between arable and permanent grass by the latter.

The distinction between permanent pasture, to be included in the returns, and rough grazing, was most difficult in Highland Britain, where open moorland was extensive, and in those parts of Lowland Britain, particularly the chalk country of Berkshire, Hampshire, and Wiltshire, where there were large areas of unfenced downland. The problem of definition had immediately to be faced. In 1866 permanent pasture had been defined as "Permanent pasture, meadow or grass not broken up in the rotation (exclusive of hill pastures)"; it had been intended to exclude only "Mountain Land with heathy and scanty pasture," but it was believed that a large acreage of down and other hilly pasture was being omitted from the Returns. The definition was accordingly changed in 1867 to read "Permanent Grass as meadow, down, or pasture, not broken up in the rotation (exclusive of heath or mountain land)"; this change was followed in that year by a considerable increase in the acreage returned under permanent grass in many counties, e.g. 62,873

¹ *Agricultural Returns of Great Britain*, 1869 (C4200), p. 4; and 1870 (C223), p. 4.

acres in Wiltshire and 143,022 in Carmarthen.¹ The problem of definition continued to present difficulties, however, and in 1876 officers were instructed that "enclosed Grass Land, not common to two or more Occupiers having grazing rights, must be entered as Permanent Grass," but that "unenclosed mountain land or heaths not capable of cultivation" should be excluded.² Despite this clarification, difficulties continued to be encountered; thus, in 1889, a decrease of some 2,200 acres in the acreage returned for Haddington and one of 2,400 acres in that for Orkney were found on investigation to be due to the exclusion of land previously returned as permanent pasture, but which was more properly regarded as heath and mountain land. In 1890, on the other hand, an increase in the national acreage of permanent grass was attributed in part to a more liberal use of the term 'cultivated'.³

In 1891 estimates were made of the extent of such heath or mountain land used for feeding stock, and from 1892 onwards the acreage of Mountain and Heath land was collected annually. Some of this land was common land, and officers were instructed that if the occupier could not give the acreage of such land they were to make an estimate of its approximate acreage.⁴ This collection of the acreage of uncultivated land led to further changes in the acreage returned under permanent pasture in some upland counties; thus, between 1891 and 1892 it fell by 40,671 acres in Westmorland and by 56,611 acres in Cumberland. Reclassification of land formerly returned as permanent grass continued to affect the totals of both cultivated and uncultivated land; in 1897 much rough downland in Hampshire, Sussex, and Wiltshire was reclassified in this way, and in 1898 the Collector responsible for Wiltshire reported that "Down Pasture" was increasingly being returned as mountain and heath land. The weather also affected the extent of land returned in this category; in 1901 an increase in Mountain and Heath land in Hampshire was attributed to transfer from permanent pasture of land which "afforded no pasturage in consequence of the drought in Spring." So numerous were these interchanges that it was concluded in 1907 that no close analysis of these figures was possible.⁵

The distinction between permanent and temporary grass was equally difficult to define, and the difficulty was accentuated by the progressive con-

¹ *Agricultural Returns*, 1867 (C3941), p. 3.

² Excise General Order, 8 May 1876. In 1895 it was further ruled that such heath and mountain land should be excluded, even though it were enclosed by boundary fences.—Excise General Order, 20 March 1895.

³ *Agricultural Returns*, 1889 (C5856), p. 4; and 1890 (C6143), p. xi.

⁴ Excise General Order, 20 April 1892.

⁵ *Agricultural Returns for Great Britain*, 1897 (C8897), p. xi; 1898 (C9304), p. viii; 1901 (C1121), p. ix; and *Agricultural Statistics*, 1907, XLIII, Part I (C3870), p. 7.

version from arable to grass which was taking place during the last two decades of the nineteenth century, and possibly even during the seventies.¹ In fact, of the addition of 3,999,000 acres to the acreage of permanent pasture between 1871 and 1891, approximately one half was attributed to the laying down of arable to grass; detailed analysis is, however, made difficult by the lack of uniform interpretation by farmers.² In 1866 temporary grass had been defined as "clover and artificial and other grasses under rotation"; differences of interpretation led to the adoption in 1869 of a new definition, "Clover, Sainfoin, 'Seeds' and Rye Grass under Rotation." This change was followed by a decrease of 510,000 acres in the acreage returned as temporary grass, though part of this was attributed to the dry summer of 1868. But it was found that this new definition had led in many areas to the return as temporary grass only of one-year leys, all other rotation grass being returned as permanent pasture. A third definition, "Clover, Sainfoin, 'Seeds', Rye and other grasses under rotation for one or more years," was therefore adopted in 1870, and a transfer from permanent to temporary grass ensued. Unfortunately, it had also been decided in that year to distinguish between the acreage of grass cut for hay and that not cut, and this added further confusion; some farmers returned land which was supporting a corn crop undersown with seeds both as corn and as seeds, though it should not have been returned under the latter head until the following year. By 1871 greater uniformity of interpretation was thought to prevail, but further difficulties were noted in 1876 and in 1883, while in 1885 a special enquiry found that the clover acreage had been overstated. The simplified schedule adopted in 1897 led, on the other hand, to an increase in the acreage returned as temporary grass.³

The problem of uniform interpretation was most acute in those areas where leys of two, three, or more years were common. The difficulty of classifying such leys was increased by the effects of the agricultural depression. One Collector, whose territory lay in the south and west of England, and in the midlands, reported that a large proportion of the increase in permanent pasture consisted of temporary grass, which would normally have been ploughed up after one or two years, but because of the unprofitability of arable farming had "simply drifted into Permanent Pasture." A similar

¹ This difficulty was noted by many writers: see, for example, *Royal Commission on Agriculture, England, Report of Mr R. Hunter Pringle (Assistant Commissioner) on the Counties of Bedford, Huntingdon, and Northampton*.—House of Commons, Sessional Papers, 1895, xvii (C7842), p. 41: "I am aware that farmers in making their returns do not always distinguish between the two."

² *Agricultural Returns of Great Britain*, 1891 (C6524), p. x.

³ *Agricultural Returns*, 1869 (C4200), pp. 4, 8; 1870 (C223), p. 10; 1871 (C460), p. 13; 1876 (C1635), p. 7; 1883 (C3907), p. 5; 1886 (C4847), p. 13; 1897 (C8897), pp. x-xi.

increase in permanent pasture in 1893, which was most marked in parts of Scotland and Wales, was likewise ascribed to the reclassification of land which up till then had been regarded as being in the rotation; for an increasing amount of temporary grass was coming to be regarded "in name as well as in fact as permanent."¹

Mountain and heath land, permanent pasture, and temporary grass were not the only classes of land about which uncertainty prevailed, though they were by far the most important. Bare fallow was also a source of difficulty, and here too fluctuations due to the weather added to the uncertainty of the exact nature of changes revealed in the statistics. Variations in 1866 and 1867 were attributed to misconceptions about the land to be returned in this category, and in 1868 some land "capable of cultivation but lying waste or untilled" was believed to have been erroneously returned as bare fallow. Consequently the definition was altered in 1869 from "Bare Fallow or uncropped Arable Land" to "Bare Fallow or Ploughed land from which a Crop will not be taken this year"; this alteration was followed by a great decrease in the acreage of bare fallow, particularly in Devonshire. There was a further fall in 1870, especially in Devon and Cornwall, and again in 1871. The interpretation of bare fallow was also complicated by the agricultural depression; during the worst periods of depression some cultivated land was temporarily abandoned, and doubt existed whether this land should be returned as bare fallow. It was similarly debatable at what point arable land which had been allowed to tumble down to grass should cease to be returned as bare fallow, and be reclassified as permanent grass.²

While most other field crops seem to have presented little difficulty, the collection of the acreages of orchards, small fruit, market gardens, and woodlands was not without its hazards.³ In the case of orchards and market gardens, the normal difficulties of interpretation were accentuated by the fact that such land was returned under more than one head; thus the land lying beneath orchard trees was returned under permanent grass, or under bare fallow, or the appropriate crop, while the land returned as market gardens was also returned under the separate crops growing on it.⁴ Before the intro-

¹ *Agricultural Returns*, 1880 (2727), p. 5; 1885 (C4537), p. 9; 1886 (C4847), p. 14; 1893 (C7256), p. ix; 1896 (C8502), p. xvi.

² *Agricultural Returns*, 1867 (C3941), p. 4; 1868 (C4057), p. 5; 1869 (C4200), pp. 4, 8; 1870 (C223), p. 9; 1881 (C3078), p. 14; 1887 (C5187), p. 4.

³ The principal difficulty here would have been the return of mixtures; I have been unable to find any ruling about mixed crops before 1912, when the instructions on the schedule prescribed that the acreage of mixed crops should be equally apportioned among the component crops.

⁴ *Agricultural Returns*, 1897 (C8897), p. xvi.

duction of a separate category of small fruit there was no heading under which orchards or market gardens growing small fruit could be returned; it is probable, therefore, that the total acreages, as well as those under market gardens and orchards, were underestimated in this period. With this exception, it is theoretically true that inaccuracies in the acreage returned under the head of orchards and market gardens did not affect the total acreages, since such land had already been returned under other heads and was already included in the total. Clearly, however, the possibilities of confusion were considerable.

Market Gardens, which were first recorded in 1872, presented peculiar difficulties of definition, and were a source of much trouble; in 1883 a large acreage in Essex, occupied by peas and potatoes as part of a normal rotation, was erroneously returned as market garden. The increasing practice of growing vegetables on arable farms was making the old meaning of market garden obsolete, and in view of this and of the difficulties of interpretation which occupiers experienced, the collection of further returns under this head was discontinued.¹

Orchards were first returned in 1871, but the collection of market garden acreages in the following year revealed that some land had been erroneously returned as orchards. Further confusion was noted in 1885, when part of the increased acreage of orchards was attributed to the proper return of orchards previously returned under the heading of permanent grass. In 1887 a further complication was introduced with the recording of the acreage of small fruit growing in orchards; in 1888 that growing in market gardens was also included, since the 1887 acreage only partially accounted for the land devoted to small fruit. It was clear that some land was being omitted, while other land was being erroneously returned under more than one head; thus, in 1888, a decrease of 3,056 acres in the orchard total was ascribed in part to land under small fruit being incorrectly returned as orchard the previous year. The new schedule in 1897 revealed numerous errors in the interpretation of small fruit, and in the measurement of small fruit areas lying within orchards and in market gardens, while in 1907 the return under separate heads of those orchards under grass and those undercropped with small fruit led to further improvement in the accuracy of the fruit acreages being returned.²

The acreage of woodland was collected in 1872, 1880, 1888, 1891, 1895, 1905, and 1913. Unlike the crop and livestock returns, the acreages were estimated by the officers on a parish basis and refer only to the woodland lying

¹ *Agricultural Returns*, 1884 (C4142), p. 7; 1897 (C8897), p. xvi.

² *Agricultural Returns*, 1872 (C675), p. 10; 1885 (C4537), p. 11; 1887 (C5187), p. 13; 1888 (C5493), p. 11; 1897 (C8897), p. xv; and *Agricultural Statistics*, 1907 (C3870), p. 15.

within the boundaries of each parish; the figures are, therefore, less ambiguous than the annual returns, but they are also less accurate, particularly in the years prior to 1891, when reliance was placed on the rate books. These, however, proved very defective guides, and the 1891 return was based on local enquiry by the officers and on Ordnance Survey measurements.¹ None of the figures is very reliable and they must therefore be used only with great caution.²

The livestock returns presented fewer difficulties of interpretation to the farmers. It is true that the number of horses returned in 1869 is not comparable with that collected between 1870 and 1911, since the latter excludes non-agricultural horses, and that some doubt exists how far the Milk Cows returned in 1866 are comparable with the Cows and Heifers in milk and in calf of 1867.³ But these are isolated instances; the use of age limits to define the different classes of livestock minimized the possibility of differences of interpretation. Difficulties in drawing conclusions from the returns do not derive so much from differences in the interpretations made by farmers as from the effects of changing agricultural practice on the significance of fluctuations in the numbers of stock in particular age classes. Thus the trend towards the production of 'baby beef' tends to invalidate any conclusions that might be drawn from movements in the numbers of other cattle of two years and over about the rise or fall in beef production.⁴

Finally, it must be noted that changes in administrative policy and in the interpretations which were placed by farmers upon the instructions issued to them affect the conclusions which can be drawn from the statistics about trends in farm size. For while the number of holdings fluctuates and shows an increase in the numbers of small and medium-sized holdings and a decrease in the number of larger holdings of over 300 acres, independent observers noted that enlargement of farms through consolidation was widespread.⁵ Sir Daniel Hall thought that farmers continued to return once separate holdings even after consolidation, while official sources attributed the variations in the numbers of holdings in different size groups to the varying practice of making one or several returns for holdings under the same ownership, as well as to more complete enumeration, and to the tendency for newly reclaimed land to be divided into small holdings.⁶ Thus, while it is

¹ *Agricultural Returns*, 1891 (C6524), pp. vii-viii.

² *Ibid.*, pp. vii-viii.

³ *Agricultural Returns*, 1870 (C223), pp. 11-12.

⁴ Astor and Rowntree, *British Agriculture*, London, 1938, p. 45.

⁵ See, for example, *Agricultural Statistics of England and Wales*, 1913, Acreage and Livestock Returns, XLVIII, Part I (C7325), pp. 9-10.

⁶ A. D. Hall, *A Pilgrimage of British Farming*, London, 1938, p. 43.

usually possible to draw valid conclusions about regional differences in the size of holdings at any one time, comparisons from year to year are not justified.

CONCLUSION

Conclusions about the usefulness of the agricultural statistics must largely be based upon what is known of their origin and compilation, and upon their internal consistency. No other source exists with which full and valid comparisons can be made; the arable, grass, orchard, and market garden acreages can, however, be checked for some individual parishes against the areas given in the area books of the first 25-inch plans of the Ordnance Survey prior to the latter part of 1880, and in the altered Tithe Apportionments which are available for some parishes after 1865. Such comparisons involve laborious calculations, and since the figures are not strictly comparable, extensive checks are not justified, nor are they possible for more than small groups of parishes. Two examples must suffice to indicate the general reliability of the statistics. The parish of Great Missenden in Buckinghamshire was surveyed by the Ordnance Survey on the 25-inch scale in 1877; the computed acreages for arable, grass, and orchard are respectively 4,040, 1,039 $\frac{3}{4}$, and 80 $\frac{1}{2}$, while the agricultural returns give 3,975, 1,003, and 67 acres respectively, figures which, in view of the different basis of calculation, are remarkably consistent.¹ After the enclosure of Edlesborough parish in Buckinghamshire in 1875 an altered Tithe Apportionment was made in the same year, and this gave acreages for arable, grass, and orchard of 2,980, 1,231, and 43 $\frac{1}{2}$ respectively, compared with 3,806, 1,040, and 63 acres in the return;² these figures show much wider discrepancies than do those for Great Missenden, but it must be remembered that while the latter parish is compact, Edlesborough is an elongated parish which had recently been enclosed and had eight detached portions, all considerations which affect the comparability of the totals. These two parishes represent extremes; but they give some indication of the general reliability of the returns. It is not possible to compare crop acreages with other sources, but an official sample check found discrepancies between the actual extent and the returned acreages "only in rare instances."³ No comparison of the livestock figures is possible. None the less, with the

¹ There are several possible totals for grass; I have included both the orchard acreage and the acreage of ornamental gardens, which are mainly landscaped parks.

² The Tithe Grass acreage includes 114 acres of Hudnall Common, which would be excluded from the Acreage Returns. The difference in orchard totals may also be due to the fact that the Tithe surveyors were primarily interested in the distinction between arable and grass, and did not always record orchards, or included them with gardens.

³ R. J. Thompson, 'An Agricultural Census', *Journal of the Royal Statistical Society*, LXXXVIII, 1925, p. 188.

qualifications noted in the second part of this paper, both the internal consistency of the returns and the plausibility of the trends they reveal indicate their general reliability. It could hardly be expected that absolute accuracy or completeness would be attainable in view of the large number of occupiers of small acreages, and of the frequent changes taking place between holdings.¹ Discrepancies and inaccuracies do exist, so that it is rarely possible to compare total figures, even on a national basis. Ratios of different crops and densities of stocking, particularly where these are based on mean values for a number of years, provide the only safe basis for comparison, particularly when counties and parishes are being studied.² Comparisons from year to year can only be made with caution, in view of the changes of definition and of the different interpretations which have occurred; but while there are very few items which are strictly comparable throughout the period for which they have been collected, most crop and livestock figures are sufficiently comparable over long periods to be of great value.

The light which the Agricultural Statistics can throw on the agricultural changes taking place is, of course, limited by their accuracy and by the problems of interpretation which they involve, and by the fact that they reveal only average trends for groups of farms. It is unfortunate that opposition and apathy prevented the collection some twenty years earlier, for their grosser inaccuracies would then have been eliminated before the beginning of the period of agricultural depression. As it is, the illumination which they can provide on the great changes which were taking place at this most important moment in British agricultural history is diminished by the ambiguities and uncertainties of the first years of collection. But whatever their limitation, their value is greatly enhanced, both by the fact that they are unique and by the fact that the period for which they have been collected has been one of rapid and fundamental change. At no other period is it possible to examine in such detail for so wide an area and for so long a time the changes taking place on our farms, and if in this paper undue emphasis has been placed on the limitations of the returns, it is well to remember Clapham's caveat, that if the statistics cannot be trusted, there is nothing else that can.³

¹ Each year about 80,000 holdings show a change of acreage (*Agriculture, op. cit.*, p. 234).

² Coppock, *op. cit.*, pp. 21-2.

³ J. H. Clapham, *Economic History of Modern Britain*, III, Cambridge, 1951, p. 86.

Rhosili Open Field and Related South Wales Field Patterns

By MARGARET DAVIES

IN the manor of Rhosili there are two sharply contrasting types of land (Fig. I). The northern half is occupied by Rhosili Down, a rounded mass of Devonian conglomerates and brownstones, partly strewn with boulder clay. The southern half, the land south of Rhosili and Middleton villages, is largely free from glacial drift and is covered with good loams underlain by Carboniferous limestone.

Rhosili Down rises sharply from a shelf of arable land (the drift-covered terrace along Rhosili Bay) to a rock-strewn ridge 600 feet high. Though this ridge falls away more gently eastward, slopes are still steep and Rhosili Down was and is pasture for sheep, horses, and cattle. The main area of the Down has never been enclosed; it is the common land of the manor of Rhosili and, as the remainder of the manor is largely arable, plays a vital part in its agriculture. The southern slopes of Rhosili Down are now enclosed; in the south-east, around Talgarth Well, the fields are small and they are grouped, two or three together, round small scattered houses. These have all the marks of squatters' holdings, encroachments made by stealth on the fringes of the common land. Larger and more regular fields, enclosed by the village farmers, lie behind Rhosili and Middleton villages on the southern slopes of the Down. These two villages, recently joined by a string of roadside houses, are distinct clusters of old farms. Their main arable holdings lie in the peninsula south-west of the villages, and until recently these two farm clusters housed all the tenants of the land there. The former squatters' holdings provided and still provide smallholdings for farm labourers having no share in the better land in the southern half of the manor. Here there are no scattered farms.

On the west and south Rhosili manor is bounded by the sea. An Elizabethan survey of 1598 defines the boundaries shown on Fig. I as "Beginning at a well called Tall-garth-Well and joining to the hedge of Owen Perkin's land called Freeland, and so as that leadeth southward to Elliot's Cross, from thence and crossing the land as the hedge leadeth to a hallar (*sic*) called Stephen's Torrs, and there hence as a stone wall, being a landseare between this Lordship and the lands of Wm. Price Esq., leadeth to a little creek called Newslade, and so westward by the side of the sea to the farthermost or point of Wormshead, being within the Lordship afsd, and so northward by the

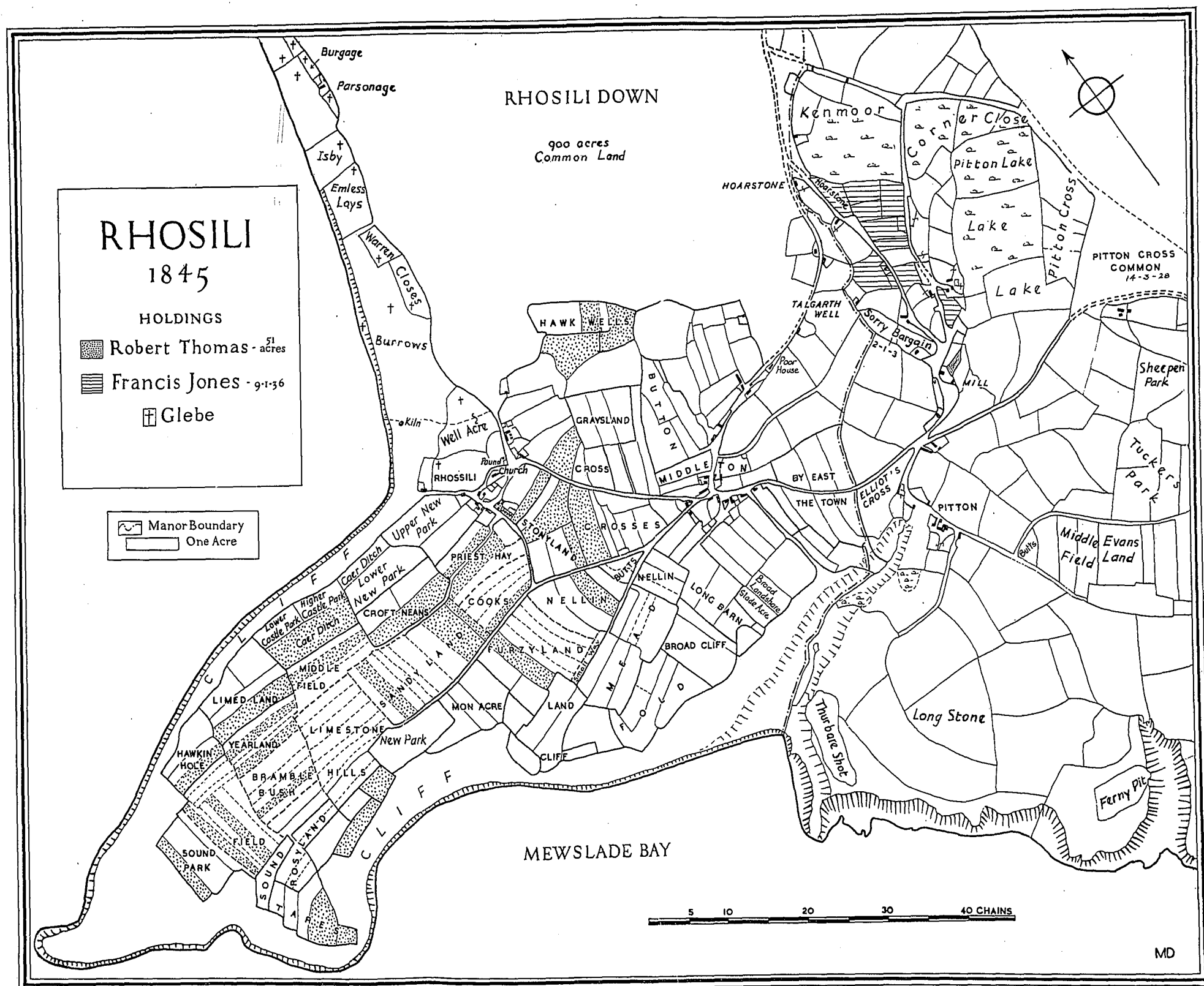


FIG. I

Rhosili Manor in 1845. The northern half of the manor, which covers most of the 900 acres of common on Rhosili Down, is excluded, as is Worms Head. Continuous lines represent fences or walls; balks are shown by broken lines. The simplified coastline is shown as on the tithe map on which this map is based. The strips grouped under the name Yearland, and the adjoining four strips of Bramble Bush, are known collectively as Dis Furlong. The adjoining "Field" is Dip Slades.

side of the sea to the fall of the Dilly-Lake being the landseare between the parish of Langennith and Rosilly."¹ Fig. I shows the part of the landward boundary of the manor which lies between Mewslade Bay and Hoarstone, a name used in Gower and elsewhere for a manorial boundary mark and subsequently for a field and place name. The "Dilly Lake" is a stream running out into Rhosili Bay beyond the northern end of Rhosili Down. Another part of the survey of 1598 notes that parts of the manor were held separately, and this was so in 1780. Fig. II is based on one of the fine series of maps by John Williams of the estates of Thomas Mansel Talbot of Penrice, which are now deposited in Glamorgan County Record Office. Nearly fifty acres and a farmstead in Rhosili village were owned by the Popkin family of Forest, Llansamlet, in 1780. With the exception of one field owned by William Richard, the remainder was held by Thomas Mansel Talbot as lord of the manor. The manor was part of the lordship of Landymor, and the two parts were sometimes referred to as "Llandimor and Rhosilli, the Greater and the Less."

The southern, arable half of the manor lies between Rhosili and Middleton villages and the sea. It comprises the snout of land which culminates in the superb broken limestone ridge of Worms Head. The arable land lies on the surface of a plateau which slopes gently south-westward from a height of 275 feet at Rhosili village to 165 feet at the coastguard station on the south-west common, nearly one mile away. The plateau top is thus almost flat. It falls sharply to seaward in limestone cliffs, and these cliffs and the unenclosed cliff tops were and are common grazing land. The cliff top provides a sweeter pasture than Rhosili Down but the southern cliff slopes have much rough bracken and gorse. The cliffs on the north-west side are precipitous. There were also sixteen acres of pasture on Worms Head. In 1845 they were classed, together with Rhosili Down and the cliff pasture, as common land. In 1780 they were let to Matthew Beynon (tenant B: Fig. II) and in 1693 to John Beynon for an annual rent of five shillings.

The arable holdings are separated from the cliff common by walls built of stone dug on the spot; the cliff top is pitted with shallow holes at the base of these walls. Within the enclosure walls the arable holdings are arranged in a pattern which is now unfamiliar but was formerly characteristic of the southern lowland fringe of South Wales. This land within the walls forms Rhosili Open Field, locally known as the Vile.² Here open-field cultivation

¹ *Archaeologia Cambrensis*, suppl. vol. 1864, p. 160.

² The word *vile* is probably derived from O.E. *gefilde*: a field or plain. Ekwall cites this as the source of the Lancashire Fylde ('The File *pro* Feild—1586) in *The Place Names of Lancashire*, 1922, p. 139. Mr Gwynedd O. Pierce, who also suggested this derivation, adds that the

survives today with the holdings only very slightly different from those shown on Figs. I and II.

THE OPEN FIELD IN 1780

The Vile is laid out in long narrow strips which average one and a half acres in area. The marginal strips were and are enclosed within limestone walls near the cliffs and with earth banks topped by thorn hedges near the villages. These enclosed fields were sometimes meadow or pasture land in 1780 as they are today, and those which border the village farms have probably always been closes used for pasturing young stock and milch cows. Within the peripheral belt of enclosed strips the Vile was and is arable land and there are no fences between the strips tenanted by various farmers. The dividing line between the strips is a low narrow balk known as a landshare, a word widely used to denote a boundary in south-west Britain, e.g. in Pembrokeshire the Landsker separates the northern area of predominantly Welsh from the southern one with mainly English speech. Landsear is used for 'boundary' in the Elizabethan survey already quoted and landshares or balks are further discussed below. Strips tenanted by the Rhosili and Middleton farmers were and are widely scattered over the Vile. Fig. I shows that groups of strips have distinctive names and that a holding is made up of strips distributed over these different segments of the open field. These names, which often provide clues to soil conditions ('Stonyland' marks the southern limit of glacial drift) are still used. Strips held by one tenant rarely adjoined each other in 1780, except in the extreme south where the two adjoining patches tenanted by George Thomas probably represent an encroachment on the cliff common.

In 1780 the six farmers of Rhosili village (B-H on Fig. II) held nearly 142 acres in the Vile and in closes of meadow around their farms. It will be noticed that several holdings, here and at Middleton, were of about nineteen acres and that Matthew Beynon's holding was considerably above the average. The seven farmers of Middleton (I-P) held nearly 130 acres in the Vile and, to a greater degree than those of Rhosili, in enclosed fields sloping up to Rhosili Down and gently down towards Mewslade Bay. Many of the Middleton farmers held only one or two strips in the Vile; the larger share of open

voicing of the initial *F* to *V*, a common feature of the dialects of south-west England and the south-west Midlands, has influenced field and place-names in the Vale of Glamorgan. Similar field-names occur in Gower, and Furzylands is pronounced Verzylands at Rhosili. Both Gower and the Vale of Glamorgan have received peoples from lands around and across the Bristol Channel for many centuries and a large proportion of their field-names are English. A Welsh derivation for *vile* is unlikely.

arable land was therefore held, and was probably always held, by the farmers of the older group of farms around the parish church of Rhosili. Many of the holdings are small, not by Welsh standards generally, but, say, in comparison with the larger farms of the Vale of Glamorgan. But it must be remembered that 900 acres of Rhosili Down and a further eighty-two acres of cliff common were available for the communal grazing of the animals of both villages.

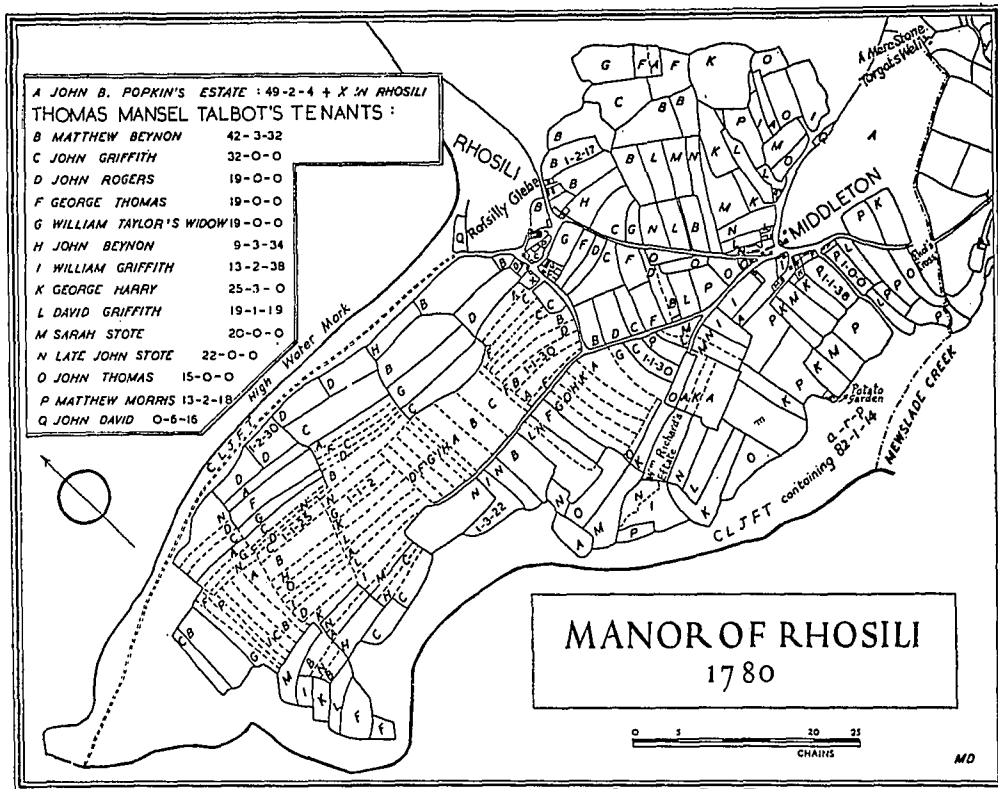


FIG. II

Rhosili Manor in 1780. The coastline and 'cliffs' are shown as on John Williams's map of 1780.

There are no common meadows such as Llanbethery Moor, in the Thaw valley, which is still communally grazed in the summer half-year. No similar flat-bottomed valley exists in Rhosili manor or elsewhere along the south coast of Gower. The Bishopston valley is a possible exception and the cattle of several farmers may once have grazed in meadows there (Fig. III).

An annual redistribution of strips was unknown at Rhosili. The strips shown in Fig. II were tenanted as part of a holding year after year. They were handed over when holdings changed tenants, as did that of John Griffith (Fig. II, c). Between 1780 and 1845 this was added to the holding of the Thomas family and the strips which made up the fifty-one acres held

in 1845 by Robert Thomas are held by that family today. Extensions of holdings could be made only into the common pasture. By 1780 this had been done upslope on the south face of Rhosili Down, probably to the limit of cultivation on this exposed slope. A small encroachment on the cliff common is the "potato garden" tenanted by Sarah Stote. Potato patches were often enclosed in this way in the eighteenth and early nineteenth centuries on the margins of fields and roads. Sarah Stote held Broad Cliff (m) in addition to her twenty-acre holding and its distinctive classification suggests that it had been enlarged by encroachment. By 1845 it had been joined to the potato garden by another enclosure.

RHOSILI MANOR IN 1845

Fig. I shows the old parsonage and its glebe lands on the shelf of drift-covered land below Rhosili Down. A terrier of 1720¹ describes the parsonage as having two rooms and lofts (it was declared unfit for habitation a century later), a barn and three outhouses, and a small croft on the north side of the house. This croft is the 'burgage' of Fig. I; the name is frequently used for such closes as far west as south Pembrokeshire. The parsonage had eight tillable fields in 1720, totalling twenty acres, and six acres of warren. The rectory now stands in Rhosili village, but the former parsonage and its well-kept fields are still a distinctive feature of the land fronting Rhosili Bay. Glebe land lying apart from the open-field system is a common feature and may be seen in other parts of Gower—e.g. at Bishopston (see below).

Fig. I is based on the tithe map and award of 1845. Holdings in the Vile, and more especially those of the Rhosili farmers, are only slightly different from those of 1780. For this reason only one open-field holding has been shown. The farm clusters have not been enlarged, and in 1845, and today, the houses and land are mainly occupied by the descendants of the farmers of 1780. Christopher Rice Mansel Talbot of Penrice was lord of the manor in 1845. A comparison of Figs. I and II reveals very minor changes in the open field and in the enclosed fields east of it which lie on the margin of the Mewslade valley. Up this valley, on the north side of Pitton village, was the only suitable point for a mill to grind the locally produced corn. There was no mill in the manor of Rhosili, where there are no considerable surface streams. North of Pitton Mill squatters' holdings can be seen on both sides of the manor boundary. An unusually large one, that of Francis Jones, is shaded on Fig. I. These squatters' holdings were more frequently of two fields like that named Sorry Bargain. All this south-eastern fringe of Rhosili Down is a poorly drained area of rough grazing.

¹ J. D. Davies, *West Gower*, Swansea, 1885, III, p. 169.

PRESENT-DAY CONDITIONS

Fig. I shows two lanes leading into the open fields. They are deep and narrow and just wide enough for a tractor. The main hedged lane from Middleton to Limestone Hills is now disused along Sandy Land and Cooks, and the only way for modern agricultural vehicles down to the Vile from Middleton is along the motor road to Rhosili and thence down the lane through Priest Hay to Middle Field. A number of unfenced ways run along several of the groups of strips and there are paths out to the cliff top whence grazing sheep can be inspected. The tenants of Rhosili manor have, in recent years, bought their holdings from the Penrice Estate, but there is as yet little rearrangement of the pattern of strips. Holdings are widely scattered, and some time may elapse before considerable amalgamations occur. During the latter half of the nineteenth century further strips near Rhosili village were enclosed within walls and hedges. Those grouped on Fig. I under the names Sandyland, Furzyland, Mead, and Nellin became hedged strips with the hedges running on top of the earthen balks. Many of them reverted to pasture in the nineteenth century and a few have not been ploughed again. Cattle graze there and on the enclosed fields near the cliffs. 'Cooks' remains as a small isolated group of strips and is known as the Little Vile. A wire fence has recently been run through the centre of it on top of one of the balks. In the main Vile a few balks have been ploughed out and an occasional light fence has been run along the side of a lane over the open field. The only permanent structure in the area is a light shed built by the tenant of the pasture at Sound Park. The homes of those who work the land remain in the villages some distance away.

This south-western extremity of Gower is exposed to strong sea winds, and hedges and shelter belts might appear to be far more suitable than low balks one to two feet high as protection for crops. But long experience has shown that the winds dry the corn, and in the boisterous late summer of 1954 it was far less badly laid than in enclosed fields further inland in Gower where the hedges had acted as a funnel for wind gusts. Low balks are also more economical divisions of land and do not shade the crops as do high earth banks topped with thorn hedges leaning away from the west winds.

Are these narrow one-and-a-half acre strips likely to survive? Their distinction has caused them to be marked on the 2½-inch map (Sheet 21/48) as "allotment gardens," and they are in fact as carefully cultivated as many market gardens. The old manor of Rhosili and the former fee of Pitton now produce large quantities of spring cabbage: mild springs make early crops a profitable undertaking, as in south Pembrokeshire. Potatoes, cereal crops, rape, and rotation grasses like lucerne and sainfoin are also grown. The

flatness of the plateau top made it possible to lay out straight-sided strips and these are far more convenient for tractor ploughing than strips which curve with the swing of the land. In other parts of Gower where such curved strips, often of one acre or less, have been enclosed, tractors get into more difficulties than the ox ploughs for which these strips were originally designed (see below). The narrowness of the Rhosili strips appears to present no problems, and a few strips are even subdivided along their length; for example, a few furrows may be sown with barley and the rest with potatoes.

In medieval open-field agriculture cattle were turned into the stubble after harvest and grazed in common as they still do in the open fields of Laugharne across Carmarthen Bay. This practice is not remembered at Rhosili, though the older farmers used to graze their cattle on their own stubbles in the open fields and herd them individually, as does a French farmer in the open plains of Beauce today. Periodic grazing has now wholly lapsed on Rhosili Vile.

The Vile is the mainstay of Rhosili and Middleton villages and is in a good state of intensive cultivation. The small local tourist industry and agriculture hardly impinge upon each other, but together they make for greater local prosperity than in the nineteenth century.¹

OPEN FIELDS IN GOWER AND OTHER PARTS OF SOUTH WALES

Many surveys of open-field agriculture exclude or dismiss the Welsh evidence. The system was best developed in the English midlands and spread westward during the Anglo-Norman occupation of South Wales. "The saied Lords marchers being Englishe lords . . . brought the most parte of the landes of the saied Lordships to be of English tenure."² It is likely that fields were communally tilled by Welsh tribal units in South as in North Wales before the Norman Conquest, but the open-field patterns and nomenclature which survived until recently in many South Wales areas are essentially English. Vestiges of open-field farming can be found in documents,³ in estate and tithe maps, and on the ground at the present day in all South Welsh counties from Monmouthshire westward and northward to Cardiganshire. It

¹ In 1833 when the lord of the manor gave up his right to 'wreck de mer' it was hoped that "the neighbourhood, which is very poor, will be considerably benefited by this occurrence." Up to the early nineteenth century smuggling was a minor local occupation. In 1801 George Beynon, Customs Officer, seized a cargo of 108 eight-gallon casks of brandy, 'Geneva', rum, and wine.

² George Owen in 1603. See *The Description of Penbrokeshire*, ed. Henry Owen, Part III, 1906, p. 144.

³ The documentary evidence was first collected and presented in detail by William Rees in *South Wales and the March*, Oxford, 1924.

is in the coastal lowlands and in the main valleys, where English influences were strongest, and fairly flat land most abundant, that the manorial system was established and persisted. The homesteads are grouped in nucleated villages as in the English plain, and not scattered over the countryside as they are in the pastoral uplands of Wales.¹

As might be expected, the south Monmouthshire open fields, nearest the present border, were most akin to those of the English midlands. Undy, Magor, Redwick, and Caldicot had large areas of open arable and meadow land (sometimes described as Furlongs) which were enclosed as late as 1850–8.² Some of their common pastures are still unenclosed. In Caldicot parish 225 acres lay in intermixed strips of arable or meadow until 1858. Most of them lay in the Great Field which bordered the north side of the village.³ Open arable and meadow land survived on the outskirts of Monmouth borough until the mid-nineteenth century and was also found on the margins of the middle Usk valley. By its estuary The Marshes, on the north side of Newport, was the common meadow of the burgesses.⁴ Open-field farming was a feature of the Vale of Glamorgan where it is widely attested in documents and maps throughout the area between the common meadows of Cardiff, on the eastern, and those of Baglan on the western margin. A large common meadow is still in use on Llanbethery Moor in the Thaw valley. It is similar to meadows in the adjoining manor of Llancadle which were formerly cropped for hay by individual farmers and then grazed in common by their cattle. These lammas meadows are on the flat bottom of the valley of the Kenson River, a tributary of the Thaw. On Llanbethery Moor holdings are substantially the same today as they were when the tithe commissioners surveyed the area in 1840 and drew up the tithe award for the parish (Llancarfan). Stinting of cattle grazing on the moor is determined according to the size of the holding at a spring meeting of the farmers involved. Open arable fields in many parts of the Vale of Glamorgan and Gower were small. The deep valleys which trench the coast plateaux in both areas often leave only narrow blocks of plateau top available for ploughing. This was the case

¹ "Their buildings are Englishe like, in Townreddes and villages and not in severall and lone houses."—George Owen, *op. cit.*, Part 1, 1892, p. 33.

² These four parishes are included in the distribution map in the first edition of C. S. and C. S. Orwin, *The Open Fields*, Oxford, 1938, p. 65, as the only Welsh open-field areas.

³ This was formerly the West Field. See William Rees, *A Survey of the Duchy of Lancaster Lordships in Wales, 1609–1613*, Cardiff, 1953, pp. 135 ff.

⁴ Hay from this common meadow was sold by auction until the nineteenth century and the aftermath was grazed in common. Profits from hay sales were divided among the resident burgesses: the last payment from this fund was made in 1924. See David Williams, *John Frost: A Study in Chartism*, Cardiff, 1939, pp. 28–9.

around Llancadle village between the steep-sided Kenson and Thaw valleys, and in other parts of Llancarfan parish.

The manors of the Gower peninsula provided several examples of small open fields until the nineteenth century, but with the exception of Rhosili Vile all are now enclosed. Occasionally the balk which separated two strips can still be found, topped by a wire fence, e.g. in Broad Acre, south of Pyle Cross at Bishopston (Fig. III). The extensive common pastures of Gower have resisted enclosure to a remarkable degree, and Port Eynon Moor, en-

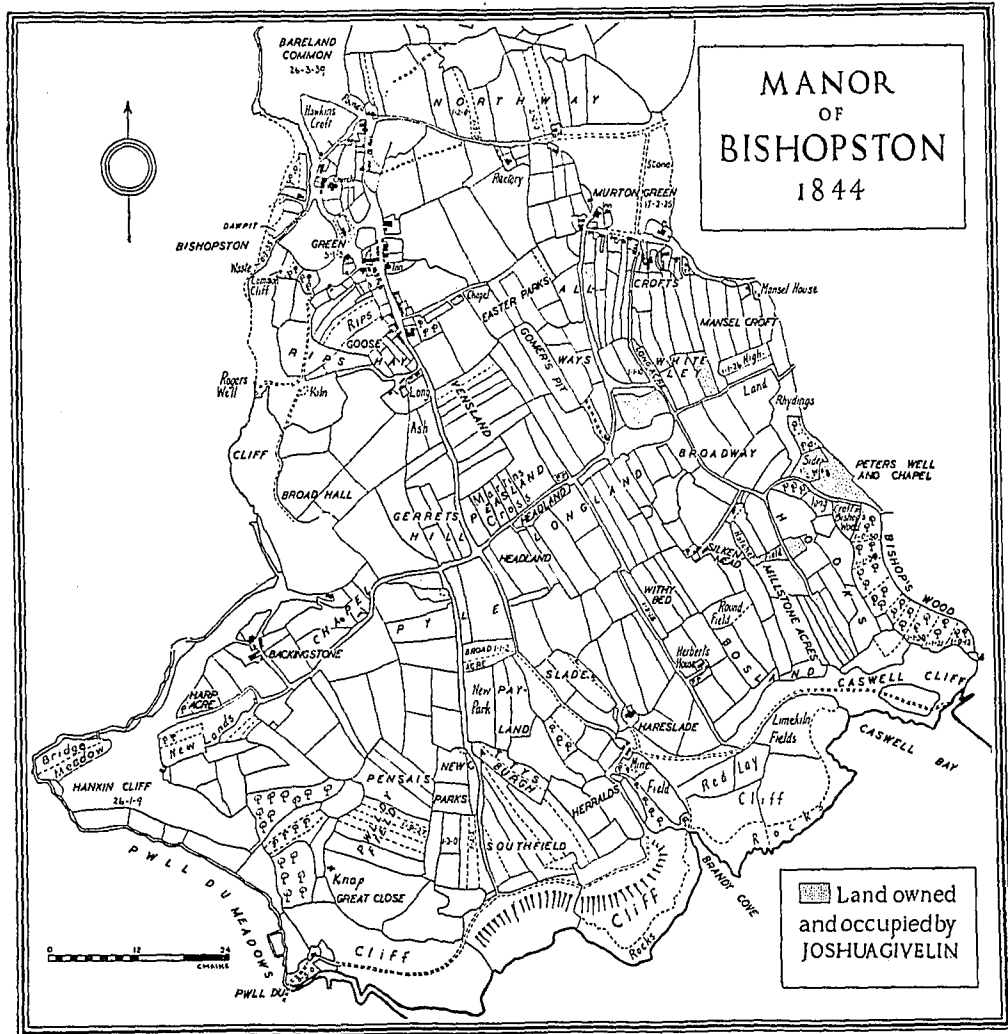


FIG. III

The Manor of Bishopston in 1844. This map is based on the tithe map of the parish. In the southern part of the manor, shown here, parish and manor boundaries coincide. The 'dawpit' west of Bishopston village is a sinkhole in the bottom of the limestone valley.

closed in the early seventeenth century, is the only considerable common which has been converted to hedged arable fields and meadows in recent centuries. Boundaries of commons and rights of grazing and of quarrying (of limestones on cliff commons and millstones on sandstone commons like Cefn Bryn and Rhosili Down) were always clearly defined in manorial surveys.¹

The tithe map and award of 1844 for Ilston parish show "Lithered" (Llethrid) Meadow between Pengwern Common and the stream which drains Welsh Moor and drops underground in the limestones of Parc le Breos Cwm, south of Llethrid. The outer shares in Llethrid Meadow were enclosed by the early nineteenth century, but two groups of unfenced strips (described as landshares) lay within them. The strips varied from half to one and a half acres in the northern to two and a half to seven acres in the central block of strips. Llethrid Meadow may well have been the remnant of a lammas meadow similar to the Lord's Meadows granted to the burgesses of Swansea by the de Breos charter of 1305-6.

Fig. III, based on the tithe map and award for Bishopston, shows typical examples of former field patterns in Gower which are by no means wholly obliterated. The limestone coast plateau is trenched here by the two bordering valleys and by that which meets the sea at Brandy Cove. In 1844 the flat tops of the segments between the valleys were laid out in narrow arable strips. Many strips had already been hedged and these hedges have since been partly removed to form normal fields. But several strips of approximately one acre are still being cultivated today. Fig. III shows the two villages of Bishopston and Murton, in which the older farms are grouped, and their small adjoining commons where cattle, sheep, ponies, and geese graze today. The sea cliffs and Hankin Cliff (above the Bishopston Valley) were also common pastures. The larger fields between Bishopston village and the Rectory were glebe lands farmed by the rector. The windswept Bishop's Wood behind Caswell Bay was occupied by nine farmers (one had two shares). Each share included just over an acre of woodland which may have provided very rough pasture or, possibly, timber for 'housebote and heybote' as in medieval times. The field names given in the 1673-5 survey of the manor of Bishopston² all appear on Fig. III and the descendants of many of the

¹ See, e.g., *Archaeologia Cambrensis*, suppl. vols. 1861, 1864, 1870. Many unpublished manuscripts provide earlier and later details. Among the latter is the largely unpublished *Survey of the Seignories of Gower and Kilvey with the several members of which the Most Noble Henry Duke of Beaufort is Lord*. This survey, which is partly based on earlier material, was made in 1764 by Gabriel Powell of Gellihir, steward to the duke of Beaufort. It is in the library of the Royal Institution of South Wales at Swansea.

² *Archaeologia Cambrensis*, suppl. vol. 1864, pp. 143 ff.

seventeenth-century farmers were still holding land there as at Rhosili and elsewhere.

Across Caswell Bay groups of strip fields are found in the adjoining manor of Oystermouth. The best examples are around Langland and Newton villages, and although much arable land is being built over here, the field pattern is still discernible. The narrow lanes show the right-angle bends and frequent changes of direction characteristic of cart tracks which formerly bordered the margins of open fields. A typical example is the disused lane which formerly ran from Newton northwards through the open field and out to Clyne Common, the common pasture of Oystermouth manor. The unfenced tracks which run alongside the groups of strips in Rhosili Vile change direction just as frequently.

Similar field patterns existed in the nineteenth century at Lunnon where the arable land above Parkmill gorge lay in ten unfenced strips described by the tithe commissioners as landshares. They were of half to three acres and together formed Lunnon Great Field. On the north side of the group of farms which form Lunnon village the High Grove field lay in thirteen strips. Between the Great Field and High Grove lay Middle Field and Coity Ditch, similarly subdivided. At Reynoldston holdings were again scattered, though the fields were largely enclosed (Fig. IV). The Lucas family had replaced their roadside farm of Stout Hall by a mansion with the same name which they had built in the adjoining field. They had laid out a park around it in what may well have been a large common field south of Reynoldston village. The tithe map of 1838 shows that a considerable acreage in this park, made up of unfenced landshares, was owned by C. R. Mansel Talbot of Penrice. Along the stream which forms the southern boundary of Reynoldston parish and manor, the meadows were in a few cases still laid out in unfenced strips. Further south in Gower, between the farm clusters of Port Eynon and Overton, there was a Middle Field in eight unfenced acre strips in 1844 and the adjoining fields of Hill Land and Boarland included several fenced strips grouped under these names. The meadow at the bottom of Horton Cliff (common pasture adjoining the village behind the dunes) lay in six strips which the tithemen called landshare pieces. These meadow strips were valuable because this type of lush meadow was rare around Horton, and they were occupied by several tenants.

In the north of Gower there are more examples of arable strip fields and scattered holdings. From medieval times onwards the beasts of the northern farmers had access not only to Cefn Bryn and other large hill commons, but also to the vast salt marshes which fringe the south side of the Burry River estuary. In 1847 Llanrhidian village, and Leason west of it, were flanked by

Marsh at its foot. By 1844, when the tithe commissioners surveyed this parish, the Marsh had been enclosed, but the meadows and withy-bed on its eastern side were described as "in landshares" and were partly unfenced. South of Broughton, in the north of the manor, a field called Longstone was still in four landshares, and one east of Broughton, called Landshare by the tithemen, was in six. Holdings of the farmers of Broughton and Llangennith settlements were scattered throughout the cultivable area. Llanmadoc Down backed the bigger cluster of farms at Llangennith and provided an extensive common pasture. The large hill and dune commons of the parish of Llangennith are described in the tithe award as Lord's Waste. In most awards this older form is not used by the tithemen to describe common land.

In south Carmarthenshire three open fields with a total area of about 300 acres survive at Laugharne. Here they have been in continuous use since the early fourteenth century when Guy de Brian granted the land to the burgesses of Laugharne.¹ South Pembrokeshire and the St David's peninsula were formerly open or 'champion' country and many strips of arable land were enclosed only in the nineteenth century. The *Description of Pembrokeshire* by George Owen of Henllys, lord of Kemes, contains many references to fields and farming in sixteenth-century Pembrokeshire, "a champion and plaine countrie" in which he estimated that 3,000 young people were employed in herding because of the lack of enclosures.² Tithe and estate maps show many strip fields in the Englishries of such manors as Fishguard and Newport, and further south in the manors on both sides of Milford Haven. On its north side the villagers of Houghton in 1840 farmed open fields which included an Oxland. In the Pembrokeshire lowlands a bovat or oxland measured eight acres, and this is the total area of the strips which made up the Houghton oxland. The bishop of St David's was lord of several Pembrokeshire manors and it was noted in 1802 that bishops could not be expected to pay their portion of the expenses of obtaining an enclosure act and of enclosing the 30,000 acres of common and waste land in the diocese.³ Enclosure of this great area could hardly be completed during the tenure of the bishop who initiated enclosure, nor would he reap its reputed benefits.

There was a good deal of church land intermixed with lay holdings in other areas where open fields survived to a late date, e.g. in south Monmouthshire, and the name of a Cardiganshire open field which is still in use is suggestive. This is Morfa Esgob (The Bishop's Moor), on the raised beach

¹ Margaret Davies, *Geography*, XL, 1955, pp. 169-77.

² George Owen, *op. cit.*, pp. 42 and 146-7.

³ John Clark, *Report to the Bishop of St David's*, 20 June 1802 (a privately printed letter now lodged in the Nat. Library of Wales).

between Llan-non and Cardigan Bay. These coastal shelves of Cardiganshire are valuable arable land and were formerly famous for their malt barley crops.¹ A part of the raised beach which adjoins Morfa Esgob now produces

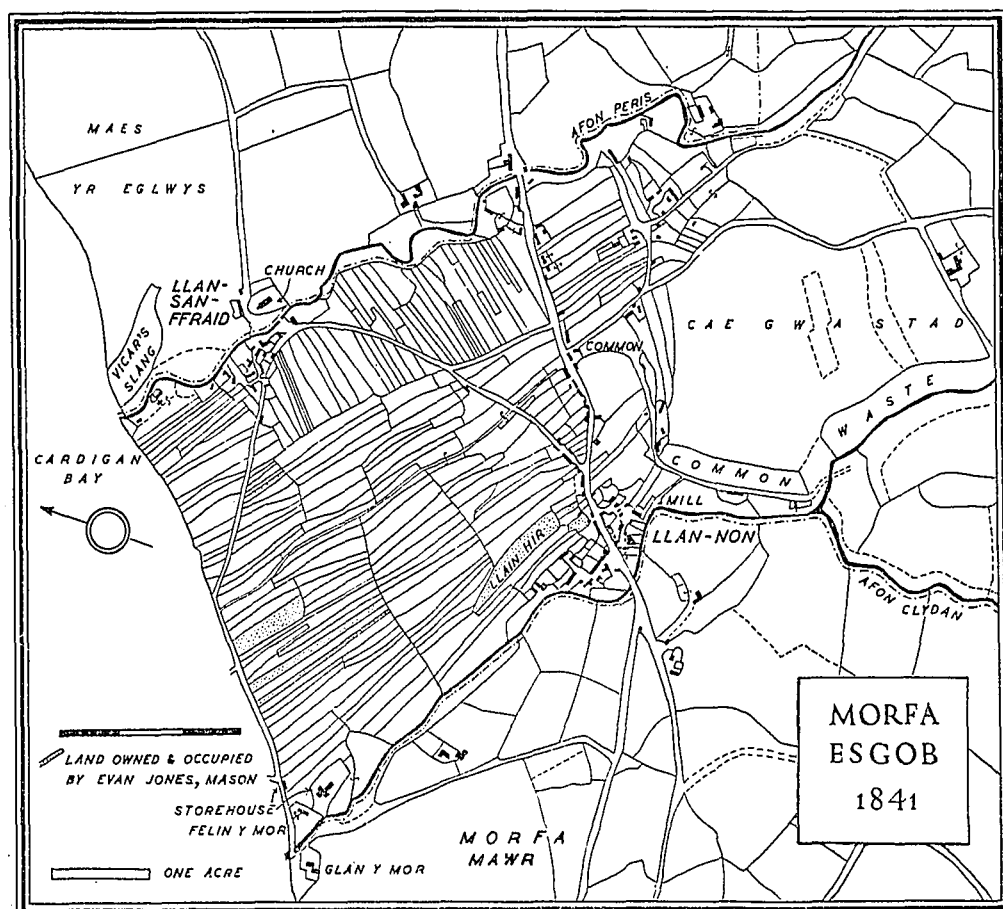


FIG. V

Morfa Esgob in 1841. This open field lies in the parish of Llansanffraid, but the other bordering village, Llan-non, housed the greater number of the men who farmed it. Llan-non is better placed than Llansanffraid as a road and fair centre. Fig. V is based on the tithe map which does not adopt the normal practice of showing unfenced strips bordered by broken lines. The strips of Morfa Esgob were fenced only round the villages and are largely demarcated by broken lines on Ordnance Survey maps made later in the nineteenth century. As there is no contemporary Ordnance Survey map, fenced and unfenced strips have not been distinguished on this map showing conditions in 1841. Morfa Mawr, a large holding off the south of the map, was formerly a grange of Strata Florida Abbey. Vestiges of similar strip fields are found on other parts of the Cardiganshire raised beach, e.g. around Llanddewi Aberarth village. The scale represents 15 chains.

¹ Much of this Cardiganshire raised beach lay in intermixed quillies. See Thomas Lloyd and the Rev. Mr Turnor, *General View of the Agriculture of the County of Cardigan*, 1794, p. 13.

large yields of Aberystwyth pedigree grass seeds. Morfa Esgob has been owned and farmed for several generations by the villagers of Llan-non and Llansanffraid which border it. Here a large number of small narrow strips produce good crops, though around the villages the strips have reverted to pasture and increasing numbers are being enclosed in wire fences run along the balks. Fig. V shows a typical holding. The villagers had only a few strips each and would combine their farming with a trade, as did Evan Jones who was a mason. Smallholdings farmed in this way are still widespread in rural Wales, though examples like the quarrymen's smallholdings of Caernarvonshire are strikingly different in lay-out from those of Morfa Esgob.

BALKS OR LANDSHARES

The surviving South Wales open fields—at Rhosili, Laugharne, and Llan-non—vary as to terrain, crops, and communal grazing of cattle on stubbles (practised only at Laugharne), but all are on relatively light soils and in all of them the strips are separated by low balks which are known at Rhosili and Laugharne as landshares, landscars, or landskers.¹ These must not be furrowed by the plough or disturbed in any way. In 1620 some tenants in the lordship of Haverfordwest, in exchanging their strips so that they might be more conveniently worked, had broken the intervening landshares. An “amendment” was “straightly required,” and whilst exchange of pieces to facilitate enclosure was not condemned, it was suggested that “notwithstandinge the exchange the ancient landseares and meares betwixt the pieces be preserved.”² A Nicholaston (Gower) jury's comment in 1632 also appears to refer to the preservation of these balks: “no landshare hath been altered or removed out of his place, to our knowledge, within the saide mannor.” Markers on the manor boundary are described specifically as “landshare stones” in this survey.³ When they are ploughed out, as was a Rhosili landshare in 1954, the earth and small field stones of which they are composed are soon scattered and very few traces survive a few seasons' ploughing.

Low balks known by some variant of the name ‘landshare’ are characteristic of former open-field areas in south-west England and it has been suggested that they were found where the open fields lay on relatively light

¹ Landshare and landscore fields were also found in Devonshire where Braunton Great Field has balks. See H. P. R. Finberg, ‘The Open Field in Devon’ in *Devonshire Studies*, 1952, pp. 266, 276–8. In the open fields of the Isle of Portland the balks are known as ‘lawnsbeds’. See C. H. Drew, *Antiquity*, xxii, 1948, p. 79.

² P.R.O., Land Revenue Books, 2/206, ff. 1–4.

³ *Archaeologia Cambrensis*, suppl. vol. 1864, p. 225.

soils, e.g. in the chalk lands of Wessex.¹ The surviving South Wales examples support this. It has been argued that balks were a feature of open-field areas where conditions were unique,² but the evidence for their existence in widely separated areas continues to accumulate. Although they cannot now be detected in enclosed fields on the ground, they appear to have been widespread in South Wales. The term 'landshare' was used by the tithe commissioners for parts of South Welsh open fields, though they assumed that it described the strip—'a share of land'—and not the balk. Eighteenth-century estate maps also show groups of strips jointly named "landshare fields." In the seventeenth-century manorial surveys of Fonmon, Penmark, and Lllancadle (Vale of Glamorgan), unfenced strips which the tithemen called landshares in 1840 are referred to as "lancets" and "landsetts." In the manors of the Wiltshire chalklands the balks were lynchets and lynchards.³

In much of the English midlands ridge and furrow has been correlated with open fields.⁴ Others have argued that drainage of wet clay lands rather than land division was the controlling factor there.⁵ The only surviving open field in South Wales known to the writer to be in ridge and furrow is the Lees at Laugharne which is a wet pasture on the fringe of Laugharne Marsh.⁶ In South Wales large enclosed estates were being ridged and furrowed by improving landlords well into the nineteenth century,⁷ and the practice has left its traces on hillsides where the English system was never imposed.

The theory of the curving plough strip formulated by Dr Eyre⁸ is not valid in South Wales. As he states, such strips enable the team to turn more easily into the headland, but to equate our groups of curving strips with ridge and furrow is difficult as the open fields of South Wales are, and probably were, in flat strips divided by balks. All that can safely be said of our widely distributed curved strips is that in the open arable fields curvature often increases with gradient and with the swell of the slope. This is noticeable in the upper parts of Rhosili Vile (in Cooks and Furzyland—Fig. II) and at Laugharne on the steeper eastern slopes of the Hugdon.⁹ Two miles

¹ Eric Kerridge, *Economic History Review*, 2nd series, IV, 1951, p. 19, and *Agricultural History Review*, III, 1955, pp. 32-40.

² C. S. and C. S. Orwin, *op. cit.*, 1954, pp. 49-50. ³ Eric Kerridge, *op. cit.*, 1955, p. 35.

⁴ M. W. Beresford, *Economic History Review*, 2nd series, II, 1949-50, pp. 34-45; W. R. Mead, *Geographical Journal*, CXX, 1954, pp. 34-42.

⁵ Eric Kerridge, *op. cit.*, 1951, pp. 14-36. ⁶ Margaret Davies, *op. cit.*, fig. 4, p. 175.

⁷ Their methods of ploughing ridges and intervening 'reens' with ox teams are given in some detail in Walter Davies, *General View of the Agriculture and Domestic Economy of South Wales*, 1815, I, pp. 287-9. These ridges were usually narrow and of no great height.

⁸ S. R. Eyre, *Agricultural History Review*, III, 1955, pp. 80-94.

⁹ Margaret Davies, *op. cit.*, fig. 2, p. 173.

east of Brecon there was a good group of curved strips at nearly 1,000 feet near Llechfaen on the southward-facing slopes of the Usk valley.¹

Neither in medieval nor later times were plough teams necessarily of "eight or more oxen yoked in pairs." Four oxen were most common in Wales, but there were many combinations, and the Welsh Laws mention yokes of three, six, nine, and twelve feet for the yoking abreast of two, four, six, or eight of the small oxen of the Dark Ages and medieval times.² Mr Payne suggests that "yoked abreast, four or six oxen require no more headland space to turn than two oxen do." He believes that eight or six were yoked abreast until the twelfth century, and four abreast until the end of the fifteenth century when the long team was adopted throughout Wales.³ Dr Eyre's theory hinges on the obsolescence of the long team in early Tudor times.

Dr Eyre asks us to seek curving plough strips grouped *en échelon* as evidence of medieval ploughing. In South Wales we find some of the best examples lying on a sward through which, before completion of ploughing in the manner of his Fig. IV A, the ox team would have floundered heavily to make a landfall on the headland. These groups of curved strips lay in very wet common meadows—e.g. by the mills of the bishop of St David's at Llanwnda (Pembrokeshire) and Llangyfelach (Glamorgan); at Tenby, and at Baglan near Neath; and above all in common meadows behind the sea wall in south Monmouthshire such as the Bees Ditch in the manor of Caldicot and the Hencroft in the manor of Undy.⁴

The open field of Rhosili, spread across a large and formerly remote promontory thrust into the Bristol Channel, would seem to provide evidence for the survival in Wales of a method of farming which is believed by some English authorities to have reached the limit of its westward spread in the Welsh Marches. The strips and landshares of Rhosili suggest, with other Welsh examples, that the lay-out of the strips varied as greatly as did physical conditions in the areas to which the system spread. The balks appear to be similar to those of south-west England, and provide one more link in the bonds of custom and culture which have joined the Bristol Channel shores since prehistoric times.

¹ *A Book of Survey of the Estates of the Hon. George Venables Vernon*, 1776, DDBF, Glamorgan County Record Office.

² F. G. Payne, *Yr Aradr Gymreig*, Cardiff, 1954, pp. 147 and 159.

³ F. G. Payne, *Archaeological Journal*, CIV, 1948, p. 860 and *op. cit.*, 1954, pp. 164-71.

⁴ The farmers of the Monmouthshire "Moors" maintain their excellent fattening pastures in ridges and furrows to solve their major problem of drainage into the major reens and thence into the sea. It might be more appropriate to say that these meadows lie in ridge and drain. The local description would be "ridge and reen."

The Development of Feeding Standards for Livestock

By CYRIL TYLER

WHEN writing of the historical development of a scientific concept, it is essential to give at least a general picture of the scientific ideas involved. A brief account of these ideas will, therefore, be given first.

If feeding stuffs are to be used to their full advantage, then it is essential for us to know something of their relative merits and of their effects upon the animal. Further, if they are to be quantitatively compared with each other, their value must be first expressed in terms of some unit, and their quantitative effect on the animal must also be measurable in these same units. Thus three feeding stuffs may contain x , y , and z units of nutrient material per hundred pounds respectively, whilst a cow may require m units of nutrient material to keep it alive and p units of material per gallon of milk. From this knowledge of the three feeding stuffs and the requirements of the cow, we should be able to decide theoretically on a suitable mixture of these feeding stuffs for the cow. Clearly this idea can be extended to all feeding stuffs and to all classes of product, such as eggs and meat. The historical development of feeding standards has therefore gone hand in hand with the nutritional evaluation of feeding stuffs, and both have progressed in the light of an ever growing knowledge of physiology and biochemistry.

At first, feeding stuffs *per se* were studied, and men learnt to know something of the worth of hay, turnips, oil cake, straw, and so on; but all the knowledge was empirical. Later it was recognized that each feeding stuff could be analyzed chemically and that the same chief groups of related compounds, namely fats, proteins, and carbohydrates, occurred in nearly all feeding stuffs. Thus the proportion of fats, proteins, and carbohydrates in the common feeding stuffs was established and feeds were compared and requirements stated on this basis. However, such an analysis did not take account of digestibility: this was, therefore, the next step.

Studies of digestibility soon made it obvious that the total quantities of fats, proteins, and carbohydrates in a feed were not a true measure of its worth to the animal, and so the emphasis passed to digestible fats, digestible proteins, and digestible carbohydrates. In other words, it was recognized that part of the feed is lost as faeces and is of no use to the animal.

The final stage was the recognition that even when a constituent of the

feed has actually been digested and absorbed into the body of the animal there may still be losses which vary under different conditions. Thus there are losses in the urine and breath and losses as heat from the lungs and skin. The digestible constituents cannot therefore be the final measure of worth, for this must be measured by what is left to the animal when all losses have been allowed for. It is this ultimate portion which enables the animal to maintain itself and to yield a product.

The measurement of productivity is relatively simple, in the sense that the live weight gain of a meat-producing animal or the gallons of milk from a dairy cow can be measured. The assessment of the needs for maintenance are less easy, but not impossible. If an animal yielding no product is made to fast, it will utilize its own body tissue in order to obtain the energy necessary for its life processes, and, very simply, it can be said that the energy so utilized must be exactly balanced by a supply of feed energy if the animal is just to maintain itself. Thus, by measuring the fasting metabolism of the animal, a value for its maintenance requirement is obtained.

In early literature there is not much evidence that the ancients had grasped any of these principles, although a few quotations and comments will indicate that they had an occasional glimpse of them.

As early as 2500 B.C. the Egyptians force-fed their fattening stock, as various pictures show, and this suggests that they realized that extra food gave fatter animals. Furthermore, the Hittite chariot-master Kikkuli wrote a treatise in 1350 B.C. which specifically dealt with the careful feeding of chariot horses. In his *Works and Days* Hesiod suggests that in winter, when the nights are long, oxen may be given half rations; and it is interesting to ponder whether this is the first glimmering of the concept that food requirements are related to activity and hence the shorter working hours of winter call for less food. Hippocrates expresses a similar idea but much more clearly when he says that "it is the nature of exercise to use up material, but of food and drink to make good deficiencies. . ." He also recognized that sometimes nourishment goes into being, but sometimes into both being and growth, which reminds us of maintenance and production. Meanwhile Aristotle took us some way in the study of body conformation and carcass quality, for he recognized that most of the fat in the animal body is laid down after the body has developed its bones and flesh.

Lucretius, writing in the first century B.C., also had something to say on the question of maturity and hinted at the balance of matter. In his *Nature of the Universe* he remarks:

"The things you see growing merrily in stature and climbing step by step the stairs of maturity—these are gaining more atoms than they lose . . . until

they have touched the topmost peak of growth. Thereafter the strength and vigour of maturity is gradually broken and age slides down the path of decay."

Finally, Columella, in the first century A.D., considered the question of quantities of food for cattle. He states that when oxen are tilling the ground they should receive 40 lb. of hay compared with 30 lb. when not doing so. Thus the conception of livestock feeding was advancing very slowly, but it was not becoming truly scientific, and it did not begin to do so until the beginning of the nineteenth century.

It has been suggested that about the middle of the eighteenth century the availability of a greater variety of feeding stuffs and the beginnings of a new forward surge in chemistry may have created the conditions for this development. Some authorities have also pointed out that stall feeding posed new problems in the utilization of feeds. Whatever the cause, it was Thaer in 1809, in his book *Grundsätze der rationellen Landwirtschaft*, who first put on record a table showing the relative values of different feeds. Thaer was a medical doctor who turned his attention to agriculture and finally became director of an agricultural institute at Möglin near Berlin, whilst his friend and helper, Einhof, was a chemist. Einhof began to study the nutritive materials in different feeds by treating them successively with water, dilute acid, dilute alkali, and alcohol. The residue was considered to be of no nutritional value, and therefore, by difference, the part which dissolved was the nutritive part. Thaer based his work upon Einhof's data and finally produced a set of relative values. For such a table to be of any use it is usual to adopt one particular feed as standard. Thaer, in selecting hay, states: "As hay is more known and more used than any of the other kinds of fodder, I shall make that article the standard by which all the others may be compared."

He gave the value of 100 to hay and expressed all other feeds in terms of his famous hay equivalents. Thus the hay equivalent of potatoes was given by Thaer as 200, indicating that 200 lb. of potatoes were equivalent to 100 lb. of hay. These values did not achieve much success, one of the chief reasons being that Thaer had selected for his standard one of the most variable feeds on the farm. Another reason was that the hay equivalent of a feed would vary according to the quantity and quality of the rest of the ration. Later writings made these difficulties quite clear, for soon most feeds had nearly as many hay equivalents as there were writers on the subject. However, before leaving Thaer it is important to note that it is generally implied that Thaer was seeking to establish the relative merits of various feeds as feeds, but a reading of Thaer's original book suggests that he was far more interested in the pro-

duction of manure and used Einhof's nutritive values because he believed that since fattening bullocks retained so little of their food, the more nutritious foods would produce a greater quantity of manure. Thus, he says: "There is no doubt that an accurate knowledge of the nutritive power of different vegetables would enable us to form some tolerably close calculations respecting the quantity of manure which they would produce." Furthermore, at no time did Thaer suggest a feeding standard for stock. It is of interest to note that in a tract published in London in 1812 a statement was made of the relative values of foods for human beings, giving a number to each food, rather on the lines of Thaer's system.

Meanwhile Magendie, in 1816, recognized the importance of the division into nitrogenous and non-nitrogenous food constituents, and Prout in 1834 divided the constituents of foods into three major groups: saccharine (carbohydrates), oleaginous (fats), and albuminous (proteins).

Boussingault, a French scientist, expressed the opinion in 1837 that nitrogenous compounds in the feed were the most important. In his *Économie Rurale*, published in 1843, he said: "The nutritious principles of plants and their products reside in their azotized (nitrogenous) principles, and consequently their nutritious powers are in proportion to the quantity of azote (nitrogen) they contain."

This idea was based on a number of points. Clover, lucerne, and sainfoin contained larger quantities of nitrogenous material than the more traditional fodders and also gave better results. Milk was rich in these nitrogenous compounds and was vital to the young animal building up its tissues. Horses broke down muscle when they performed work and hence required nitrogenous materials to repair their tissues. Finally, the Bramah oil press was invented at the end of the eighteenth century and linseed cake and decorticated cotton cake were increasing rapidly in popularity. These successful feeding stuffs were rich in nitrogenous material. Boussingault, therefore, put forward a table comparing foods on the basis of their nitrogen content, but admitted the need of other substances and went on to say that information on undigested materials would help even further. But, like Thaer, he proposed no feeding standard.

The great Liebig made many magnificent contributions to both pure and applied chemistry, but from our point of view his statement of the function of protein and other constituents was of great significance. He believed that fats and carbohydrates supported respiration and that proteins were capable of conversion into blood and thence into other tissues. In his book *Animal Chemistry*, which was published in 1842 and was a report to the British Association, he said: "... substances of which the food . . is composed may

be divided into two classes, into nitrogenized and non-nitrogenized. . . The former may be called the plastic elements of nutrition; the latter, elements of respiration."

We now know that these ideas were not entirely true, but even so the step forward was important. Liebig also expressed, as early as 1842, the opinion that the fat of the herbivorous animal must be derived to a great extent from the carbohydrate of the diet. Strong support for this came ten years later when Lawes and Gilbert of Rothamsted published the results of their pig experiments.

So far, workers had only dealt with the relative values of feeds, and no mention had been made of the needs of stock in terms of anything other than the feeds themselves. However, in 1853 Playfair, who had come under the influence of Liebig, gave a lecture at the Royal Institution in which he estimated diets for human beings in terms of nitrogenous and non-nitrogenous ingredients. He also discussed the requirements of some farm animals in terms of flesh-forming (protein) material. On the basis of chemical analyses Grouven, in 1858, in his book *Vorträge über Agrikulturchemie*, set forth the first feeding standards. He expressed the requirements for stock in terms of total fats, proteins, and carbohydrates. Thus a 1,000 lb. milch cow requires, per day, 2.84 lb. of crude protein, 0.84 lb. of crude fat, and 14.34 lb. of carbohydrate. However, this concept did not last long, for it was quickly becoming apparent that although digestion prepared the food for absorption, there were considerable losses of material in the faeces.

Nevertheless it would be wrong to dismiss the work of Grouven so briefly, for he was one of the great pioneers of animal nutrition. In the first place he recognized that live weight gains were not necessarily a true measure of the value of a food and that detailed studies of the gains and losses of protein and fat in an animal were required. Secondly, he recognized the great importance of chemical studies; and thirdly, he saw the importance of studies on fasting animals. A number of workers had studied the fasting animal before Grouven: for example, Magendie in 1852 had studied the fasting horse; but Grouven's intensive study of the fasting metabolism of cattle in 1864 was a model of its kind and preceded all similar work on cattle by over fifty years.

The concept of digestibility had begun its modern development when von Helmont (1577-1644) pointed out that gastric changes were something more than just grinding and mixing processes. Some of the major discoveries after this were as follows: Réaumur (1683-1757) performed experiments on birds and showed that gastric juice attacked some constituents of the diet but not others. By 1822 W. Beaumont (1785-1853) had shown that gastric juice contained some active substance which was responsible for much of the effect of

the juice; and two years later W. Prout (1785-1850) firmly established the presence of hydrochloric acid in gastric juice. However, there are other important aspects of digestion besides gastric juice. By 1856 Claude Bernard (1813-78) had studied the function of pancreatic juice as a substance which broke down starch, fat, and protein, and in 1854 Haubner showed that cellulose could be digested.

So the body of knowledge about the digestive processes grew, aided by information from a variety of sources. The next step was to obtain some quantitative facts about it in relation to domestic animals. The first true digestibility trials on farm stock were carried out at the Weende Experiment Station near Göttingen by Henneberg and Stohmann. They began their experiments in 1858, and in 1860 published *Beiträge zur Begründung einer rationellen Fütterung der Wiederkäuer*. In it they condemned Thaer's hay equivalents and gave results of their experiments. They also estimated, on the basis of experiments in which oxen just maintained their weight, the quantities of digestible nutrients which enabled the oxen to do this. These values were 0.57 lb. of digestible protein, 0.28 lb. of digestible fat, and 7.14 lb. of digestible carbohydrate per 1,000 lb. live weight per day. A second volume of their book came in 1863, and further experiments were performed by other workers under the general direction of Henneberg. Since then many thousands of digestibility trials have been carried out.

Meanwhile Emil von Wolff, the director of the Royal Agricultural College at Hohenheim, had been trying to modernize the Thaer system, by taking into account the fibre and the nitrogenous substances as well as the soluble material, but the publications of Henneberg and Stohmann convinced him that this concept was now outdated. In 1874 Wolff published his book *Die rationelle Fütterung der landwirtschaftlichen Nutztiere*, and in it he expressed the requirements of stock in terms of digestible fat, digestible protein, and digestible carbohydrate. To do this he examined all the existing records of feeding trials and converted the requirements into terms of digestible constituents. His standard for a 1,000 lb. milch cow was 2.5 lb. of digestible protein, 0.4 lb. of digestible fat, and 12.5 lb. of digestible carbohydrate per day. Wolff's standards were, from then on, published annually in Menzel and von Lengerke's Agricultural Calendar, and continued to be published with modifications until 1896. It should be noted that Wolff's chief standard was for a cow giving 20 lb. of milk but he made no suggested modification for other yields.

About 1880 Armsby in America had embarked on a translation of Wolff's book, but ended up by writing a first-class account of all the main researches on this subject up to that time. This is his well-known *Manual of Cattle*

Feeding. Then in 1895 Cousins published an English translation of Wolff's book under the title of *Farm Foods*.

In all this work, despite Grouven's study of the fasting animal, there was no recognition of the fact that food has two functions to fulfil, namely, to keep going the vital processes of the animal, i.e. maintenance, and to provide for production. Professor Julius Kuhn was director of the Agricultural Institute at Halle, and he criticized all the earlier work on this basis. In his book *Die zweckmässigste Ernährung des Rindviehs*, published in 1887, he put forward two ideas. First, that foods provide for maintenance and production, and secondly that the cow has a limited capacity to deal with the dry matter in a ration. His second proposition stressed, for the first time, the importance of bulk. His first point is usually accepted as the first statement made on the idea of maintenance and production rations. It is, therefore, of considerable interest to note that not later than 1843, i.e. nearly fifty years earlier, Veit had, in his *Lehrbuch der Landwirtschaft zum Gebrauch in Landwirtschaft- und Gewerbs-Schulen*, stated quite clearly that fodder could be divided into conservation and melioration fodder, and that the one served for maintenance and the other for production. The actual statement reads as follows: ". . . conservation fodder is the quantity of fodder necessary to keep the animal alive in his present state, and melioration fodder is the quantity necessary to be employed in improving his condition."

In 1897 Lehmann, of the Berlin Agricultural High School, modified Wolff's standards in the light of Kuhn's criticisms, and in the form of Wolff-Lehmann Feeding Standards, they continued to be published in the Agricultural Calendar, and were used throughout the world. The step had now been taken to recognize that the quantity of a product clearly modified the needs of an animal, but in 1903 Haecker, at Minnesota, advanced this concept even further by pointing out that in the case of milk its percentage of fat, that is, its quality, will also influence the needs of the animal. On this basis he put forward new standards, but, of course, they were still based on digestible nutrients.

Despite these advances the nutritionists and the agricultural chemists were not satisfied. In 1842 Mayer had put forward his law of the conservation of energy. Helmholtz generalized it five years later, and this had repercussions on all branches of science, not excluding nutrition. As early as the sixteenth century it was recognized that losses, other than faeces and urine, occurred from the body. This loss was referred to as insensible perspiration. Sanctorius, a professor in the Medical School at Padua, carried out many experiments on himself to try and measure this, and described them in his book *De medicina statica aphorismi*, published in 1614. In a sense these were the

first rudimentary balance experiments. But it was Boussingault who performed the first true balance experiments in 1839, when he investigated the intake and outgo of carbon, hydrogen, oxygen, nitrogen, and ash in a dairy cow. He realized, however, that he had not taken the gaseous excreta into account. By 1849 Regnault (1810-78) with Reiset was using a respiration chamber to measure gaseous exchanges in the animal, and in 1852 Bidder and Schmidt published their classical *Die Verdauungssäfte und der Stoffwechsel*, in which the idea of a complete balance-sheet of the material incomings and outgoings of an animal was set down. From 1857 onwards Voit, who had been a pupil of Liebig, and who is regarded as the founder of modern nutrition, developed these ideas still further. He and Pettenkofer built a much better respiration chamber in 1866, and, with others, they considerably extended the concept of metabolism. Furthermore, in 1887 Voit suggested the amounts of fat, protein, and carbohydrate required daily by human beings. Lavoisier and Seguin showed as early as 1789 that respiration and combustion are similar processes, i.e. both consist of the burning of organic compounds in oxygen to give energy, including heat, but it was not until 1893 that Rubner began to use his animal calorimeter in which it was possible to measure heat output as well as material excreta. This was a great step forward, and, in addition, it enabled him to relate the maintenance requirement of an animal to its surface area. His results were published in 1902 in his *Die Gesetze des Energieverbrauchs bei der Ernährung*. And at about the same time Atwater and Armsby in the United States began to use the animal calorimeter for their work on human beings and cattle respectively.

The great pioneers Henneberg and Stohmann lost no time in carrying out respiration experiments on farm animals, but unfortunately Henneberg's death put an end to them. However, Gustav Kuhn began similar experiments at Möckern, and in 1893 he was succeeded by Oskar Kellner. From 1893 onwards Kellner continued the work, and in 1905 he published his book *Die Ernährung der landwirtschaftlichen Nutztiere*. This took the idea of feeding to its logical conclusion, for Kellner carried out carefully controlled balance experiments in which he determined all forms of material loss from the animal: faeces, urine, and breath. In this way what finally remained in the animal represented that part of the ration which was truly of value to it for productive purposes. The value of 100 lb. of any feeding stuff was then equated to so many pounds of starch, and thus arose the famous "starch equivalent." This represented the productive energy of the ration whilst in addition Kellner gave a protein value in terms of digestible true protein. In actual fact Kellner's work was more fundamental than this,

because he established the producing value of pure digestible fat, protein, and carbohydrate, irrespective of the feeds in which they occurred. From these fixed values he was able to calculate the theoretical starch equivalent of any feeding stuff, and then by applying a correction for fibre, he obtained an actual value. It is, perhaps, important to point out that Kellner used fattening bullocks in his experiments, but that in 1911 he modified his ideas to cover milking cows as well. Thus starch equivalents were calculated for all feeding stuffs and the requirements of all classes of stock were expressed in the same terms. It became a popular system and forms the basis of present-day methods of scientific rationing in this country.

A little later than Kellner, Armsby, in America, attacked the problem from a somewhat different angle, using the animal calorimeter, and calculated what he called "Net Energy Values." However, fundamentally, it was the same basic idea as Kellner's.

Since this time a number of refinements and modifications have been suggested, but they do not carry us beyond the basic concept of Kellner and Armsby. This concept is the most logical idea, but its very accuracy and its variations with changing conditions, though predictable, make it in many ways unsuitable for farmyard approximations. And, in fact, in America nutritionists have turned back to a modified concept of the digestible nutrient idea of Wolff. However, this is not necessarily a retrograde step, because many thousands of digestibility trials have been performed against only a very few balance experiments, and the greater amount of information, plus an equal accuracy of determination, may well offset the lesser accuracy of the principle in a problem of this kind.

We cannot leave this historical outline without a brief mention of a system which developed away from the main line of events, namely the Scandinavian system. Fjord was the originator of this idea, and, according to Wilson, "... he was not an agriculturist. Nor was he a chemist. But he was a man of unusual ability and common sense." The work is supposed to have begun more or less by accident when Fjord was asked to settle a serious dispute. About 1880 the milk separator was being used on Danish farms, and it was being said that separated milk was much inferior to skim milk as a feed for pigs and calves. Fjord decided to carry out experiments to test the relative merits of the two milks. His method was recognized as sound, and, obviously, once started there was no end to this kind of problem, so the work of comparing feeding stuffs grew. In 1887 he published his results, based on many feeding trials, and from these results he worked out a new system of equivalents on similar lines to Thaer's. However, he was more fortunate than Thaer because he chose cereals instead of hay for his unit. This unit was

fixed at half a kilogram of a fifty-fifty mixture of barley and oats. All food values and all requirements of stock were expressed on the basis of this unit. Others continued the work, and in 1908 Hannson suggested one kilogram of barley as the new unit. This new unit was adopted throughout Scandinavia in 1915. The method has certainly proved successful in these countries, and it is usually maintained that this is owing to their smaller variety of feeding stuffs and their more uniform system of feeding.

Finally, comment may be made on the general concept of feeding standards. Clearly, for any system to work on the farm, it must involve no complicated mathematics. To express the value of a food in terms of one number renders calculations easy, to express it in terms of two numbers renders calculation more difficult, and progressively so with each additional number. Secondly, feeding standards do not take into account the mineral constituents of a ration, or the vitamins, or its palatability, for to do so would make their use exceedingly complex, but nevertheless these items are important to the animal. Furthermore, no matter how correct the values may be, they are always statistical averages. Oats have a starch equivalent of 60, but obviously not all samples of oats will have this value, which is only an average. Similarly, if the daily need of a 1,000-lb. cow for maintenance is 6 lb. of starch equivalent, this does not mean that every 1,000-lb. cow has this requirement. Therefore, however refined our scientific rationing may become, there will always be the need for an expert stockman to watch the individual needs of his animals, and this will continue until we finally rule out of our farm animals those biological variations which create individuality. Until then, the King of Persia, as quoted by Xenophon in the fourth century B.C., will be right, for he said that it is the eye of the master which makes the horse fat.

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Notes and Comments

THE BRITISH AGRICULTURAL HISTORY SOCIETY

The fourth Conference and Annual General Meeting of the Society was held at Florence Nightingale Hall, the University of Nottingham, on Thursday 12 and Friday 13 April 1956. It was attended by about thirty-five members. The Conference began on the Thursday evening with an illustrated talk by Mr John Higgs, Keeper of the Museum of English Rural Life, the University of Reading, on problems of identification encountered at the Museum. There were two papers on the Friday: the first, by Mr Malcolm Gray, Lecturer in Economics at the University College of North Wales, on the Consolidation of the Crofting system from 1750 to 1850; the second, by Dr W. G. Hoskins, Reader in Economic History at the University of Oxford, on Sheep-Farming in Saxon England. In the afternoon members were conducted round the open fields of Laxton by Dr J. D. Chambers and the Bailiff of the Manor.

The President, Sir James Scott Watson, took the Chair at the Annual General Meet-

ing which was held on the Friday morning. The retiring officers were re-elected, and Miss H. A. Beecham, Mr G. Ordish, and Dr Joan Thirsk were elected to the Executive Committee in place of Mr W. E. Minchinton, Mr F. G. Payne, and Mr R. Trow-Smith who had retired.

The Chairman of the Executive Committee, Mr Alexander Hay, was able to report that the Society had had a good year and that membership stood at four hundred and ten. The Treasurer, Professor Edgar Thomas, reported that the balance in the bank as at 31 January was £226 11s. 7d.

At a meeting of the Executive Committee it was decided to hold the usual one-day Conference with the Association of Agriculture in London on a Saturday early in December, and the Annual General Meeting in Bristol in April 1957.

CENTENARY OF THE CURTIS MUSEUM

In 1955 the Curtis Museum at Alton in Hampshire celebrated its centenary. The story of this active local museum has been set

(continued on page 120)

Estate Management in Eighteenth-Century Kent

By G. E. MINGAY

DOCUMENTARY evidence of the way in which landlords actually managed their estates is invaluable in broadening our knowledge of eighteenth-century agriculture. A modern historian, Prof. H. J. Habakkuk, in his well-known article on landownership has given us a striking picture of estate development in Northamptonshire and Bedfordshire and has stimulated interest in the growth of estates elsewhere.¹ Moreover, the contemporary accounts of estate management provided by such writers as Edward Laurence and John Richards,² although valuable, indicate what landowners ought to have done rather than what they actually did, and it is in ascertaining the latter that estate records are so important. But quite apart from its value in adding to our historical knowledge, local estate material is interesting in itself: we can see what sort of estate problems might occur and how they were dealt with; we realize what might actually be involved in being the lord of an important manor; and we can obtain an idea of the relationship between the landlord and his steward. The material discussed below is drawn from Sir Jacob Bouverie's estate records, now deposited in the Kent Archives Office. The most interesting of these records is Sir Jacob's "Coppy Book of Letters to my Steward in the Country begun the 17th July, 1716."³ The book covers only a brief period of six years, but this is more than compensated for by the fascinating details the letters contain. Although few of the steward's letters have survived, the view of estate matters pro-

vided by this correspondence is not so one-sided as might be supposed. On the contrary, owing to Sir Jacob's convenient habit of including the gist of his steward's letters in his replies, we can obtain a complete and accurate picture.

Sir Jacob's estates in Kent included the fishing town of Folkestone, of which he was lord of the manor, and a number of medium-sized farms, mainly arable in character, situated in and around Folkestone. The estates brought in some £1,000 a year; the principal farms together totalled about 2,900 acres. It seems that Sir Jacob was much confined to London, mainly by reasons of business and attendance at Westminster, but also by illness, so that the day-to-day administration of the estates was in the hands of his steward, Henry Barton of Folkestone. The evidence shows that Sir Jacob, although an absentee landlord, none the less exercised by means of a constant stream of correspondence a close supervision over all aspects of his property. Indeed, so strict was the landlord's control that his steward must often have wished for more room for manœuvre and for an employer less hard to please. Sir Jacob was the most exacting of landowners: at one time he would tell Barton that he was prepared to rely upon his opinion, that he should use his own initiative and knowledge, while at another he would upbraid him for some transaction that had miscarried: "I would have you honestly to consider how prejudicial to my interest your management. about that Farme hath been, you

¹ H. J. Habakkuk, 'English Landownership, 1680-1740', *Economic History Review*, Series 1, x, 1940, pp. 2-17.

² E. Laurence, *The Duty of a Steward to his Lord*, London, 1727; J. Richards, *The Gentleman's Steward and Tenants of Manors Instructed*, London, 1730.

³ Kent Archives Office, Radnor MSS., U 270, C1. Sir Jacob Bouverie, a brother of the Earl of Radnor, represented New Sarum in parliament, and in 1747 was created first Viscount Folkestone. He died in 1761.

turned out my old Ten^t. Blowne, run me into a great expense in repairing and new building part of the House then on a promise of a lease for 21 years that sunke my rent £30 p. ann. and throw in the first years rent free to him also, and now you will not settle that neither, though you have caused such losse to me but would go againe hunting for another Ten^t. more I think for your own interest or humour than any honest Truice [loyalty] to me. . ."

The unfortunate steward was constantly instructed to inspect the farms and especially to watch the progress of new buildings and the quality of repairs, to bear in mind and keep down his rent arrears, to remember to hold the courts at the usual times, and on occasion to canvass tenants and their friends in favour of the parliamentary candidate supported by Sir Jacob's faction. He would be admonished: "whilst you undertake my business act in it and bestir yourself the best possible," and Sir Jacob would frequently end his letters with an injunction to "expedite my Concerns" or to "transact honestly and diligently all my Affairs."

His complaints of Barton's conduct were so frequent and were expressed so virulently that one is tempted to wonder why he continued to retain so apparently unsatisfactory a steward. Among other things, he accused Barton of disregarding his instructions and of doing "only what your own humour and Self Interest dictates to you," of retaining estate money in his own hands for unnecessarily long periods, and of not keeping this money separate from his own. He constantly protested against delays in completing the accounts and refused to take Barton's excuses. "You write againe about your Study Chimney, which to be sure may be very easily rebuilt again, and I cant see why that should at all hinder your bringing your Accounts to a head, it is a Shame you had not done it before but you will go on to trifle with me in your own humour. You lately said you were behind hand in your business for want of a Clerk, and whose fault is it, that you have not taken assistance in all this time."

On the other hand, he would sometimes

show his steward some unsolicited kindness and consideration. When Barton's daughter Frances was suffering from an unusual ailment, he several times consulted his own surgeon (and paid the fees) in order to obtain good advice for her treatment. "I am indeed very sorry for your daughter Frances ill state of Health, to have a Swelling over her Eye, broke into holes, and dressed with taints [spots] as you mention is a melancholy case and requires very good Advice and Assistance."

Sir Jacob showed a somewhat similar inconsistency in his dealings with his tenants. He could be hard-hearted and tight-fisted: arrears of rent (which appear to have been particularly heavy in 1716 and 1717) he regarded, not unnaturally, with impatience, and after they had accumulated for a year or two he would instruct Barton to make a seizure on the tenant's goods when the next harvest was in. In 1716 he was particularly incensed to hear that the insolvent tenant of his Combe farm had attempted to cheat him by a prior disposal of his farm stock and goods among the neighbouring farmers. Sir Jacob tended to suspect that his tenants were having the best of the bargain and frequently urged Barton to try to raise their rents. But again he would send his good wishes and some kind words on hearing of a tenant's illness or of an accident, as when his bailiff in Folkestone was kicked by a horse: "I am glad Verrier walks about againe." Moreover, it was possible for the steward to influence him on behalf of an old tenant. Barton wrote: "Mr. Ladd having a Bible in his hand when I acquainted him on what conditions you would be pleased to grant him a new Lease of that farm he was so moved he offered to fling away the Book saying my Landlord told me he would never turn me out but I find I must be undone if I stay and when I offered to speak he wished he had never known me. . ." Barton explained that it would be possible to find another tenant, "but that would bring the Old Mans Gray Haires with Sorrow to the Grave." At another time, Sir Jacob noted in his estate book that he had planned to join

two farms together, pulling down one of the farmhouses, "but Castle being an old Tenant, and advancing £2 p.a. I did not do it, but some time or other it may be right to do so."¹

Great care was taken in the selection of tenants, especially as the farms were let on leases for twenty-one years. Sir Jacob would not accept his steward's nominee without a recommendation from the prospective tenant's old landlord in regard to his character, ability in husbandry, and general reliability. For example, in 1716 he wrote to Barton: "You say an agreement is made between ye Widdow Ladd tenant of my Standen Farm and her eldest son for his taking that farm if I consent to it which I cannot resolve to do without further assurance of his ability and diligence and of his general understanding for Husbandry, for ye Farme is undoubtedly a great pennyworth and I would not have it turned into Slothfull or negligent hands."

An interesting correspondence about the selection of a new tenant for the South Hawkinge farm reveals the kind of negotiations which preceded the leasing of a farm. One candidate named Allen offered a rent of £50, but he was not known to Barton, who was instructed to write to his last landlord for "a character". Another candidate, Hatcher, an experienced farmer already known to Barton, offered only £45. This situation led to Sir Jacob's writing as follows: "You say you had been some hours with Hatcher again, but could not get him up to £50 per Annum for my South Hawkins Farm unless I should abate considerably of the first Years Rent, which I think would be no Advance at all, on t'other hand you heard none speak amiss of Thomas Allen, only that some question whether he had Sufficient Substance of his own. I am of your opinion to like Hatcher the season'd Man best, but £5 difference in the Rent they'll give is considerable, therefore why cant you get said Hatcher up to £48."

The outcome was that Hatcher eventually agreed to £48 and obtained the farm. The disappointed Allen on Barton's suggestion was given a present of a half-guinea for his part in driving up the rent and in order to mollify his old landlord who had recommended him to Sir Jacob.

It has already been mentioned that Sir Jacob was anxious to raise the level of his rents. Two or three times in the boom of 1720 he told Barton that land had recently almost doubled in value, forty-five or fifty years' purchase now becoming common, and that in new leases opportunity should be taken of raising rents. It appears from the evidence, however, that the farms were already fairly high-rented and it proved impossible just then to make any substantial rent increases. At the same time it was becoming more difficult to sell the produce of the landlord's woods. This development caused Sir Jacob to remark in November 1719 that "our Buyers [of wood] are now chiefly poor labourers and bad paymasters, and our Principal Farmers burning Coals."² The sale of wood for hop-poles was also subject to depression: in 1721 Barton was warned not to sell any wood for hop-poles unless he got a fair contract first, "for, as I am told, Hops sell at a very low price this Year, I doubt they [the hop-growers] are under discouragement." The solution was to increase the amount of woodland leased with the farms, making suitable increases in rent, "which is a very good way as wood is a mear drug." This change was duly noted in the estate book: "N.B. The Tenants when wood was first lay'd to the farms had no more than their exact quantity, but Wood being fallen now very much, I let them have enough to make it a reasonable pennyworth to them."³

The covenants included in Sir Jacob Bouverie's leases show that he was considerably advanced in this aspect of estate management. Apart from clauses dealing with pay-

¹ K.A.O., Radnor MSS., U 270, E 10.

² Defoe noted that coal was ousting wood as a fuel.—D. Defoe, *A Tour Through England and Wales*, Everyman edition, I, pp. 100-1.

³ K.A.O., Radnor MSS., U 270, E 10.

ment of rent, responsibility for repairs, and the crops to be grown, it was laid down that the farmhouse was to be occupied by the tenant "or some other person to be approved of by the landlord." that all dung was to be used on the farm, and that the breaking up of pasture without permission was subject to a fine of £50. In addition, the number of acres that might be sown with oats in the last year of the lease was restricted and a proportion of the land was to be left fit for sowing wheat, the outgoing occupier having the use of the barn and farmyard for four or five months after the expiration of the lease. Exceptionally, a farmer might be instructed to fold a hundred sheep on his arable and to use clover in his crop rotation. Manorial survivals are to be seen in the requirement in some leases that a tenant must perform two days' work with his team (sometimes in order to fetch materials for the repair of his farm), but he could not be obliged to go more than eight miles off. Some tenants were also liable to entertain and lodge the lord and his bailiff and servants on the day before the manorial court was held, and to provide a dinner and lodging on the day itself. The possibility of loss of crops through erosion on the coastal farms was met by providing that the landlord should pay tenants 17s. 6d. per half-acre by way of compensation "for all land that shall fall over the cliff."

The transmission of the rents to London gave rise to some difficulties. Sometimes cash was entrusted to the London carrier or to tenants who were visiting the capital, but more frequently an inland Bill of Exchange was sent by post. In 1722 Sir Jacob informed Barton: "I have received yours of the 22nd Do. with a Bill drawn by Christopher Wood on Francis Gillow for £40 payable to Daniel Wyburne [a tenant] endorsed by him to you, and by you to me, to which said Gillow hath promised paym^t next Monday."

It was a common practice, however, to send remittances via the captains of Folkestone fishing vessels when they were taking their cargoes up to London. A Mr Deane of Billingsgate received the cash or paid "the Fisherman's Bills" to Sir Jacob. This channel however, was subject to serious delays when the fishing fleet was out for the herring season. Moreover, it was necessary to give the mariners a gratuity, and this caused the careful Sir Jacob to look for an alternative route. "I see you had sent me £25 in Money by John Baker, Master of a Boat, that was coming up hither to Battle Bridge, which I shall attend to Receive, and what more you intend me by such like Opportunities, but I am sorry to see the Master Boat Men want such Courtship, and a sort of Premium as you mention for their bringing it, it would be better that I fix on somebody at Dover to receive it, and send it me by Shipping. . ."

Folkestone at this time was "eminent chiefly for a multitude of fishing boats . . . employ'd in catching mackerel for the City of London," as Defoe put it.¹ The town was described as "miserable in its Appearance" but there were "above Three Hundred Sail of Fishing Boats belonging to it."²

Although there was a mayor and corporation, Sir Jacob, as lord of the manor, still retained numerous rights and responsibilities in "his towne of Folkestone."³ In his estate book, for example, it was specifically noted that the tenant of the King's Arms Farm had "always been the Bailif and Cryer of my Courts, and Keeper of the Jayl, which is in his house, as my Deputy . . . and the Tenant always finds security for as far as £300 to be answerable to me for any Escapes that shall be made out of the Jayl. . ." The perquisites of the bailiff were put down as follows: "Perquisites of Jayl-Keeping: He is to have for an Arrest 1s. 8d., for going into jayl 3s. 4d., for a discharge from it 6s. 8d.

¹ Defoe, *op. cit.*, I, pp. 122-3.

² J. Macky, *A Journey through England*, London, 1722, I, p. 54.

³ Folkestone was a subordinate 'limb' or 'member' of the Liberty of the Cinque Ports, and such 'limbs' usually had a lord of the manor. See S. & B. Webb, *English Local Government: the Manor and the Borough*, London, 1908, I, pp. 308, 338, 373n., 379n.

N.B. I pay 2s. 6d. towards burying every corpse thrown ashore by the sea in Folkestone manor. I likewise pay 2s. 6d. for every Porpus to my Bailiff, and all Royall Fish such as Whales, Grampus's, Sturgeons etc. belong to me.

"His fee for every Wreck is 6s. 8d. all charges to be pay'd by the Owner, if no Owner by the Lord. Waifs, Strays, etc: to be brought to him and He to be pay'd for his Trouble by the Owner, if no Owner by the Lord."

Other fees payable to Sir Jacob's bailiff included tolls at fairs held in Folkestone: "For every Tilt [tent or awning] 2s. 6d., for every other Trussell [trestle] or Stand without Tilt 1s. The Bailiff is to find the Materials but not the Tilts. Every Pedler without stand pays 3d. and all sorts of games 6d. each."

These manorial rights and perquisites were not by this time mere formalities as might be supposed. There were frequent disputes over shipwrecks, washed-up bodies, and smugglers. Indeed, the role of lord of this particular manor was by no means an uneventful one. Sir Jacob was infuriated to hear that neighbouring towns had taken the liberty of removing the anchors and cables (especially as the value of this gear was often considerable) which he claimed by manorial right from ships wrecked in his lordship. On one occasion Barton was only just able to catch one shipwrecked captain "as he was riding in a hurry from Hythe to Folkestone" to get him to agree to a money compensation in lieu of losing his anchor and cable.

The east Kent coast was notorious for smugglers who specialized in the illicit import of French spirits. From time to time this gave rise to troublesome incidents. In January 1720 Sir Jacob wrote indignantly to Barton: "You say two Corps, supposed to be french smugglers, were cast a Shore at Folkestone, nothing saved from them but a pair of Silver shoe buckles and brass money to the value of fifteen pence, they being buried in their Cloathes, which my Bailiff had directed should be done in any waste soil, and for that purpose gave half a Crown for each Corps for

my Account as Lord of the Mannor as has been usual, but our Folkestone Mariners you say buried them in their Cloathes in our Church Yard, the Priest and Clerk officiating and that the latter demanded Fees, to which I would have neither Verrier [the bailiff] nor you give any Answer or Satisfaction, nor to part with a farthing more than what he gave as above according to Custome of my Mannor, for I will have no Innovations, for I think the Marriners intruded in meddling with what did not concern them, unless they take my Right to be their own."

In November of the following year the correspondence between Sir Jacob and his steward recounts another interesting smuggling incident: "some half Anchors of Brandy being Anchored off at Sea, some soldiers as Assistants to a Customes House Officer went off with him to seize it, and that in the Evening of the same Day, three Smugglers by name Fildroe, Gittings and Smith came one after another into the Quarters of Quinton one of the Soldiers, and there arose a Quarrell with Quinton . . . and that Quinton did make a thrust with his Bayonet into the body of the said Smith a little below his Navel, of which wound you say he died the 7th Do. in the morning." The soldier responsible for the smuggler's death was tried and acquitted, it being held that Smith did not die of the bayonet wound. A month later Sir Jacob found cause to complain of the treatment of another body cast ashore, pointing out that "the Salvors sharped a Ring and whilst you and my Bailiff Verrier were at Hythe Fair, they stript him of his Cloathes, putting him into his Coffin only with a few Shavings, and so buried him, I think it was too rough and unreasonable dealing."

In 1720 further difficulties arose with the Folkestone fishermen over the destruction of a harbour breakwater by a February gale. Barton reported that the large rocks and stones from the breakwater had been washed on to the beach and were preventing the fishermen from launching and beaching their boats. Sir Jacob's response was to offer the fishermen "a Tub of Strong Drink" if they

would put the stones back themselves. This offer the fishermen evidently regarded as inadequate, and Barton replied that they were "clamorous" for more assistance and claimed that the stones could only be secured in position by large timbers. Sir Jacob received this opinion with indignation, saying: "the Expression of the Fishermen's continuing Clamorous was not well used towards me who had made a present of the foresaid offer, and if the Stones were returned where they were drove from, they might remain for very many, many Years, as they had lain before, towards the Security of the Stade, and I desire you to acquaint Mr. Mayor, that as I am Lord of the Mannor, I esteem it my Right to proceed in the liberties of it, as I shall think well of, & I will remove the Stones or not, and do what I please about the Stade, and if the Fisher Men don't like it, let him and them represent to me by a Petition what they would have done, for the Advantage of the Town & Corporation and then I shall resolve what may be best to do in it." Eventually the matter was settled by Sir Jacob's allowing the mayor and corporation to dispose of the stones on the payment of 2d. a load as an acknowledgement to the Lord.

One final detail which serves to complete this account of an early eighteenth-century estate concerns the Folkestone post office. The removal of the postmastership from his tenant at the White Hart was a distinct injury to Sir Jacob's seignorial pride. He told Barton: "I think I must move in it, for it bears the face of intending a Slight or Neglect towards me & my Tenants, and I desire you to acquaint me who it is thought is the Person that promoted this alteration, without the least intimation of it to me." Having failed to get a postal official to call on him, Sir Jacob went himself to the General Post Office and, as he told Barton: "was surprized to hear

there, with what saucyness William Everenden [the former Folkestone postmaster at the White Hart] had wrote to them to remove our Post Office from him, and in the end, that he work'd himself up to write that if they did not do it, the next time the Bagg came to him, he would throw it into the Street (very ill surely) so they got Jenking Hague of Folkestone to take it upon him, & that it is now fixed there. Everenden never wrote to me one Word at all about this Matter, neither did you before the 19th of last Month, when you mentioned the Office was removed into Fisheman Street, that made it too late to apply much in it, and looks as if both had an Indifferency about it, and now upon the base Behaviour of Everenden as abovesaid that occasioned its removal, I will not hereafter do it, unless he first gets it under Hagues hand, that in general he is willing to resign the Office, and that he the said Everenden comes up to Town to make Personally his Submission to the Post Master General, or that he doth it by way of Petition. . . ." Subsequently, Sir Jacob suggested that the magistracy and principal inhabitants of Folkestone should send a petition to the Postmaster General requesting the return of the post office to the White Hart so that he would then "have a handle to apply again." However, no petition was forthcoming, and Sir Jacob unwillingly admitted defeat, commenting irascibly: "After all the concern you expressed for yourself and Others inhabiting the upper end of our Town upon the General Post being removed into Fisherman Street, I observe you now say, you all acquiesce therein, so shall think no more of it." None the less, he subsequently took the opportunity of pointing out that letters were arriving in London a day late as the new postmaster was not sending "the Bagg away at the time it used to be."

Work in Progress

Compiled by JOAN THIRSK

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Roman agriculture and settlement in the Hampshire area.
- ADAMS, R. H., *The Poplars*, Midford Road, Bath, Somerset.
Bibliography of land drainage, irrigation, reclamation of marsh, fen, and tidal lands, and warping in Great Britain and Ireland.
- AGATE, R. G., 12 Wilton Grove, Wimbledon, S.W.19.
The Surrey evidence bearing on the causes, nature, and consequences of the rioting and disturbances in certain agricultural areas in the winter of 1830-1.
- AGERSKOW, Miss MARGARET, 1019 Anlaby High Road, Hull, E. Yorks.
The reclamation of Knaresborough Forest (Leeds M.A. thesis).
- ALLISON, KEITH J., *Leeds University*.
Sheep farming and Norfolk agriculture, 1450-1700.
- ATTWOOD, E. A., *Department of Agricultural Economics, University College of Wales, Aberystwyth*.
The rate of change in the structure of British agriculture, 1870-1914.
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Rural housing.
- BARRETT, JOHN, *Clarence Lodge, Hampton Court, Surrey*.
Food and its adulteration in the nineteenth century (London Ph.D. thesis).
- BARNES, F. A., *Department of Geography, Nottingham University*.
A historical and regional geography of Anglesey (London Ph.D. thesis).
- BATLEY, Mrs L., *Department of Latin, Sheffield University*.
Eighteenth-century manorial history of Sheffield, Rotherham, and district.
- BEARINGTON, F., 39 Snow Hill, Maulden, Bedford.
A general study of market gardening in eastern and central Bedfordshire.
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Pre-Parliamentary enclosure, 1597-1750.
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Agriculture in the Blair Athol district.
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The 1801 crop returns in Northern Ireland.
- BUCHANAN, R. H. and PROUDFOOT, V. B., *Department of Geography, The Queen's University, Belfast*.
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- BURLEY, K. H., *London School of Economics and Political Science, London, W.C.2*.
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The history of the Dartington Hall Estate, Totnes, Devon, since 1925.
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Agricultural changes in England and Wales during the last two decades.
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A study of the contribution made by parks to the evolution of the landscape of Yorkshire (Leeds M.A. thesis).
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The evolution of the rural landscape of Middle Wharfedale.
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The history of the manor of Withington, Manchester. Enclosure of the open fields and common.
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The Yorkshire wolds: the pre-enclosure farming system and its transformation into the four-course system.
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The evolution of land use and settlement in Upper Ribblesdale since late medieval times (M.A. thesis).
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Agriculture of the West Midlands in the nineteenth century.
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Shropshire agriculture in the nineteenth century.
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Some aspects of the history of agriculture in the Isle of Portland, Dorset.
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Manor patterns.
- DURY, G., *Department of Geography, Birkbeck College, London*.
Agriculture and land use in the Channel Islands in the late eighteenth century.
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 West Glamorgan farming, c. 1580-1620.
 Agrarian change in Gower, 1500 onwards.
 'Georgical' work in this country, 1650-1750.
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 The import of improved agricultural implements and techniques from England to Ireland.
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 The Duchy of Cornwall estates in 1337.
 Anglo-Saxon charter boundaries.
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 Lancashire agriculture, 1750-1850.
 The Great Depression, 1873-96.
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 The progress of enclosure in Yorkshire, 1500-1850.
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 West of England friendly societies in the eighteenth and nineteenth centuries with particular reference to their insignia.
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 Sources for a biography of Arthur Young.
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 Land-use studies for certain Worcestershire parishes, based on enclosure-map and tithe-map evidence.
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 The influence of fluctuations of harvest yields on the level of economic activity, sixteenth to eighteenth centuries.
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 History of Wensleydale, Yorkshire.
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 Leicestershire villages in settlement, expansion, and decay.
- GREENFIELD, Miss M., *S.W. Essex Technical College, Walthamstow, London, E. 17*.
 Geographical development (including land utilization) of Essex coastal towns.

- GRIEVE, Miss H. E. P., *Essex Record Office, County Hall, Chelmsford*.
Essex (1953) Flood Report including full treatment of its agricultural aspects, with introductory historical background.
- HABAKKUK, Professor H. J., *All Souls College, Oxford*.
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The medieval fenland.
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The Midland peasant.
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The historical geography of County Londonderry in the nineteenth century.
See also under BUCHANAN, R. H., JOHNSON, J. H., and PROUDFOOT, V. B.
- JOHNSON, S. A., *Department of Geography, Liverpool University*.
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The agrarian history of North-West Yorkshire.
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Land use and settlement in Kesteven, c. 1700-c. 1850 (Nottingham M.A. thesis).
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The 1795 and 1800 crop returns for Wales.
The 1797 livestock returns for Dorset.
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Some aspects of the agricultural geography of Mid-Essex (London M.Sc. thesis).
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Settlement and field patterns in N.W. Essex, eleventh to twentieth centuries.
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The position of the English farmer in its economic, social, and political aspects. c. 1850-75.

- NEWLYN, Miss ANNE, *Department of Agricultural Economics, Reading University*.
The village and manor of Coleshill (Berkshire), 1500-1700.
- OLDFIELD, F., 85 *Anchorsholme Lane, Blackpool, Lancs.*
Reclamation of Mossland.
- OSCHINSKY, DOROTHEA, *Department of History, Liverpool University*.
Didactic literature on estate management and farming in the Middle Ages.
- PAWSON, Professor H. C., *University School of Agriculture, The Quadrangle, King's College, Newcastle-upon-Tyne*.
The life and work of Robert Bakewell of Dishley, 1726-95.
- PELHAM, R. A., *The Court House, West Meon, Hants*.
Agricultural geography of the fourteenth and eighteenth centuries.
- PERKIN, H. J., *Manchester University*.
The income and estates of the nobility in 1700-50.
- POSTAN, Professor M. M., *Peterhouse, Cambridge*.
The agrarian economy in the Middle Ages.
- PRINCE, H. C., *Department of Geography, University College, London*.
Parkland in England since 1550.
- PROUDFOOT, V. B., *see* BUCHANAN, R. H.
- RAEBURN, JOHN R., *London School of Economics and Political Science, London, W.C.2*.
Responses of British agriculture to price and cost changes since 1870.
- REID, F. M., *Agricultural Economics Research Institute, Oxford*.
Economic and social aspects of landownership in the nineteenth century (Oxford B.Litt. thesis).
- REVILL, S., 85 *Bedale Road, Nottingham*.
Fourteenth-century court roll of Mansfield, Notts.
- REYNOLDS, B., *Institute of Historical Research, Senate House, London, W.C.1*.
The late medieval geography of Dorset (London M.A. thesis).
- RHYS-RANKIN, Capt. Sir HUGH, F.S.A. (Scot.), M.R.I., *Green Lane, Bryngwyn, via Kington, Herefordshire*.
Welsh cattle droving during the turnpike area from west and central Wales to England.
- ROBSON, R., *Trinity College, Cambridge*.
The country attorney in the eighteenth century.
- ROWE, JOHN, *Department of Modern History, Liverpool University*.
Cornish agricultural history in the nineteenth century.
- SHAW, DAVID H., 28 *Brantwood Road, Luton, Beds*.
Surviving dialect in six villages in south Bedfordshire.
- SHEPPARD, JUNE, *Department of Geography, Queen Mary College, London*.
Historico-geographical study of the draining of the marshlands of East Yorkshire.
- SHORTER, A. H., *Department of Geography, University of Exeter*.
Field patterns in England.
- SIMPSON, E. S., *Department of Geography, Liverpool University*.
The nineteenth-century agrarian history of the Cheshire dairying region.
Agrarian development in the Wem district of north Shropshire.
- SMEE, Miss D. K., *Department of Geography, Bedford College, London*.
Soil and slope, and ridge and furrow in a Northamptonshire parish.

- STITT, F. B., *Staffordshire County Record Office, County Offices, Stafford*.
Some medieval accounts of Lenton Priory.
- STURMAN, Mother MARY WINIFRIDE, O.S.U., *St Angela's Ursuline Convent, Forest Gate, London, E.7*.
Administration of the Barking Abbey estates (London Ph.D. thesis).
- SYLVESTER, Miss DOROTHY, *Department of Geography, Manchester University*.
The rural landscape of the Welsh Borderland.
Open field in Cheshire.
- TAVENER, L. E., *Department of Geography, Southampton University*.
A survey of the commons in Hampshire in connection with the Royal Commission on Common Lands.
- THIRSK, Mrs JOAN, *Department of English Local History, University College of Leicester*.
Lincolnshire agrarian history, 1540-1914.
- THOMPSON, F. M. L., *Department of History, University College, London*.
Nineteenth-century English landed estates.
Wiltshire agriculture, 1870-1955.
- THORPE, H., *Department of Geography, Birmingham University*.
Studies of settlement and land-use in the Arden and Feldon regions of Warwickshire.
A detailed study of the changing landscape in the Warwickshire parish of Chesterton, depopulated in the fifteenth century.
- VOLLANS, Miss ELEANOR C., *Department of Geography, Bedford College, London*.
Agriculture in the Chilterns in the late Middle Ages.
- VOSE, E. K., *School of History, Birmingham University*.
The administration and economic development of the estates of Worcester Priory (Ph.D. thesis).
- WALKER, Miss F. R., *Agricultural Economics Department, Manchester University*.
Home produce and imported supplies of food since 1820.
- WATTS, D. G., 484 *Downham Way, Bromley, Kent*.
Agrarian life on the estates of Titchfield Abbey, Hants (Oxford B.Litt. thesis).
- WESTCOTT, Miss MARGARET R., 96 *East Street, South Molton, Devon*.
The estates of the Courtenay family in the late fifteenth and early sixteenth centuries (Exeter M.A. thesis).
- WILSON, C. P. H., *Peddar's Way, East Wretham, Thetford, Norfolk*.
A short history of the peach, and a treatise on its cultivation as a bush tree in the orchard and garden, together with an anthology.
- WOOD, P., *see* MILLER, Professor A. AUSTIN.

NOTES AND COMMENTS (*continued from page 107*)

down by the grandson of the founder, the present Honorary Director, Mr W. H. Curtis, in a recently published booklet.

The Museum started life as an appendage of the old Alton Mechanics Institute. It began mainly as a natural history collection, but gradually grew to be a very representative

local museum. We may look with gratitude to the foresight of those in charge in recent years who foresaw the need to collect agricultural exhibits. Thanks to them, Alton possesses a splendid collection of agricultural material, among the best in the country today.

Letters to the Editor

MR GOULD AND MR BERESFORD

SIR,—Mr Gould deserves your readers' gratitude for his stimulating critique of Mr Beresford's book on deserted villages. But I should like to mention some further points which may be worth considering.

Mr Gould's point that the prices of corn in the area serving London were relatively high in the late sixteenth century is a very good one. It certainly affects any index, such as Mr Bowden's, constructed from Thorold Rogers's figures. But Mr Kneisel has suggested that the "price leadership of London (the Lower Thames Area)" probably goes back to 1411 (*Journ. Econ. Hist.*, xiv, pp. 246 ff.). Unless Mr Gould can show that the differentials were greater in the late sixteenth century, it would seem better for the time being to rely on his arguments concerning the difficulty of transport. Buckinghamshire and Oxfordshire were the subject of complaints about conversion from arable to pasture after 1550, although they were in the London market area.

Mr Gould's arguments, based on the rate of conversion at different periods calculated from the returns of the commissions of depopulation, lose their force now that Dr Kerridge has demonstrated how fallible a guide to actual conversion the returns are (*English Historical Review*, lxx, 1955, pp. 212 ff.). None the less we can say in a general way that conversion was still a problem at the end of the sixteenth century, though it attracted public attention in the 1590's partly because of a run of bad harvests.

All arguments, but especially those of Mr Beresford, based on Mr Bowden's index of wool prices, should be treated with great caution, since there are unfortunately strong reasons for thinking that it is not reliable as a measure of long-term changes. The reasons for this view are set out in a note by my colleague Mr J. F. Wright (*Yorkshire Bulletin of Economic and Social Research*, vii, pp. 156-8). Mr Bowden's index has some value as a local

index of the price of Durham wool, but even here its usefulness is limited by the fact that there are no quotations for that wool for the crucial years 1540-82. Thus Mr Gould's scepticism about Mr Beresford's deductions is amply justified. Mr Beresford's attempt to discover the incentives to enclosure in the Midlands by comparing metropolitan grain prices with an incomplete index of Durham wool prices has little to recommend it.

We still urgently need a full index of sixteenth-century wool prices. Ideally there should be several: one for each of the main wool-producing areas. For it may be that the demand for different types of wool varied during the century. For instance, did the growth of the new draperies increase the demand for Midland wool? Unwin tells us that the new draperies in Suffolk used long coarse wool. This is the type of wool that one might expect to be produced on the converted pastures of the Midlands. An index of meat prices would also be of great assistance, as would be some study of the relative profits to be made out of meat and wool at different periods in the history of Midland sheep-farming.

Yours truly,

J. P. COOPER

Trinity College,
Oxford.

BALKS IN OPEN FIELDS

SIR,—I write concerning Miss Beecham's 'Review of Balks as Strip Boundaries in the Open Fields' (*ante*, pp. 22-44) which refers to my 'Reconsideration of Some Former Husbandry Practices' (*ante*, III, 1955).

Miss Beecham's accusation (pp. 29, 35, 39) that I said balks were made in order to divide and bound the "strips" in all common fields throughout the Midland Plain is false. What I said (pp. 37-9) was, that even in the Midland Plain, as elsewhere, there were, in many of the common fields, but by no means in all, balks that divided and bounded the various

properties and occupations, and that, although there were some other reasons for these balks, not all of which could yet be determined, the division of dispersed parcels of land was one of their main objects. Her accusation (pp. 27-9) that I confusedly endowed the fixed mould-board plough with the properties of a one-way plough is also false. Her accusation that I denied the existence of ridges is likewise false. Her accusation that I was guilty of "land-strip identification" (pp. 26, 29) is equally false. In all these instances Miss Beecham does not contradict me, but only words that she puts into my mouth, and therefore a simple traverse is answer enough.

Miss Beecham also quarrels with my use of evidence. She attempts to debar all circumstantial evidence, even when used only in support of direct evidence, and to debar reasonable inference from the evidence. Not content with this, she would like to rule out evidence where the subject is not literally mentioned, but where there is merely a verbal difference. Furthermore, she would like to debar the general statement that comprehends the particular, merely because the particular is not literally included, and to debar the general even when used only to support particular evidence. For example, if when reading Venn's *Foundations of Agricultural Economics* Miss Beecham perused p. 32, she must have seen that I based myself on reasonable inference. Again, if it was generally forbidden to plough up greensward in the common fields, then balks of all sorts were included in this prohibition unless specifically exempted. Nevertheless, although Miss Beecham objects to reasonable inference, she herself places an unreasonable construction upon the deposition of William Harrowden (p. 36).

Lastly, Miss Beecham objects to an item of transcription, while herself mistranscribing "kare" for "eare" (p. 38); and makes a great show of not being able to trace some references, while she herself reproduces my references incorrectly (for example, p. 33, notes 2 and 5).

I have no wish to contradict Miss Beecham's argument, and to do so would be a work of supererogation, for it is self-contradictory, since in seeking to deny the existence of boundary balks, it brings forward additional evidence of their existence.

Yours faithfully,

ERIC KERRIDGE

University of Liverpool.

RIDGE AND FURROW

SIR,—Agriculturists will have followed with interest the lively discussions on the historical significance of ridge and furrow. Much, if not most, of the heavy clayland that was ploughed from old pasture in the war years in Warwickshire had been 'landed up' in ridge and furrow when previously in cultivation. When it was ploughed, lack of proper drainage and attacks from wireworm were the two most common causes of crop failure, but serious phosphate deficiency was also a cause of poor yields. The very fact that many fields were in deep ridge and furrow, however, created problems which had to be overcome when they were cultivated with modern farm machinery.

The first necessity, or so it seemed, was to get the fields as level as possible. This was done by opening up new furrows on the tops of the ridges and ploughing 'downhill', so filling the old furrows. This never levelled the field at the first ploughing, but it reduced the depth of the old furrows and the height of the ridges.

Levelling out in this manner created its own difficulties. The fertile top soil was ploughed off the crown of the ridge to fill the furrow and a band of lighter coloured subsoil denoted where the tops of the ridges had formerly been. Crops along these bands were poor, but cereals often 'lodged' or went flat in strips each side where the crop was growing in a good depth of fertile soil, some of which had been ploughed off the crowns of the ridges. There was also a physical as well as a chemical effect, as the bands of lighter coloured soil were sometimes found to be less amenable to cultivation than the remainder of

the field. With some years of rotational cropping these features of old ridge and furrow became less apparent, although the bands of light soil where the ridges had been can still be seen on many fields. Fertility tends to level up over the field as a whole, but the unkind physical nature of the raw subsoil persists.

Drainage was another problem that arose when the fields were levelled in the manner described above. Whatever the condition or extent of the underdrainage system, surface drainage on heavy clay fields is desirable if not essential. Water percolates but slowly through clay, and often heavy rain lies on the surface for some time. If a crop is on the ground the results of surface waterlogging can be serious. When a field is in ridge and furrow the surface water is led off along the bottom of the furrow and a channel should be made from it across the headland to the ditch.

In many cases to make cultivation easier with modern implements, but at the same time to give some degree of surface drainage, it has been found necessary in practice to land a field up again in wider ridges with furrows further apart. On the other hand, some farmers never threw down the old ridge completely for the above reasons. It is not uncommon still to find fields that are ploughed in two or even more different directions following the slope of the ground and the old ridge and furrow. This perhaps emphasizes the important part that the ancient practice played in providing surface drainage.

Yours, etc.

A. M. A. WOODS

WEALD CLAY HUSBANDRY

SIR,—As a farmer with an interest in farming history, may I welcome most heartily the bold and fascinating project of an Agrarian History of England following quickly on the birth of the Agricultural History Society and its excellent REVIEW? It is opportune, and there is some tidying up to be done after a generation of writers who, too often, were content to haver over the niceties of legal tenure, to copy the old myths, and to ignore the interesting

problems of how the wheels went round. They and some of their successors seem to forget that our forefathers, given a chance, were sensible men provident in their husbandry; they had to be, or starve.

Today, judging by our REVIEW, things have changed very much for the better; but has not the glorification of the trivial been transferred from legal tenure to ploughmanship, and are we not in danger of creating more myths and mountainous barks by academic hair-splitting on this subject, for our unfortunate successors to clear away before they can start on any useful work? Further, have not too many earlier hack writers, cranks, and failed farmers been swallowed whole and endlessly copied, while a great deal of original material awaits critical analysis?

Having fired that broadside, I propose to increase the mountain by a few inches. This Weald Clay district was, apart from a small percentage of common waste and an occasional hunting park, enclosed by its earliest settlers nibbling their way into the forest field by tiny field. Field shape here was determined by the lie of the land, the numerous small streams, and the need to facilitate drainage and prevent erosion. Strange ploughing practices or covered-wagon-sized plough-teams probably played no part. If an aerial photograph could have been made of the district only forty-two years ago it would have shown very clearly some thousands of acres of ridge and furrow. The fields simply tumbled down to bad pasture, untouched and unlevelled, in ridges usually a rod wide, some a foot or so high and rounded, some flat, depending, like much else in husbandry, on the individual farmer's whim, the season, and the needs of individual fields. There is no mystery, no obscure interest, only the wise universal practice of local heavy-land husbandry, just that and nothing more. Probably practised during the preceding thousand years as the Weald Clay was gradually cleared, it was simply the best way to get results on this difficult but not unproductive land with very limited equipment and thus precariously few

days for the yearly round of cultivations. The practice of ridge and furrow, here 'land' and 'vor', most certainly did not go out with the advent of tile draining. Here tiles were something of a luxury to tidy up springy spots, and to supplement, not replace, the landing up.

All of which, to an amateur, seems to emphasize the difficulty of writing about the husbandry side of agrarian history except on a regional basis.

Yours truly,
G. H. KENYON

Kirdford,
W. Sussex.

THE RABBIT IN ENGLAND

SIR,—Your correspondent Mr Ridler may be interested in the article by Colin Matheson on 'The Rabbit and the Hare in Wales' in *Antiquity*, xv, 1941, p. 371. The author says however that there is "no satisfactory evidence" of the rabbit's existence in England before the thirteenth century, the oldest written reference known to him being a deed among the Exeter city muniments, undated but before 1234. The charter of 1176 is presumably a recent discovery?

Yours faithfully,
A. E. B. OWEN

2 Fellows Road,
Hampstead, London, N.W.3

[The charter of 1176 was printed in the *English Historical Review*, LXII, 1947, p. 365.—ED.]

NATIONAL NATURE RESERVES

SIR,—At the suggestion of Mr E. M. Nicholson, the Director-General of the Nature Conservancy, I am writing to ask if any members of your Society would like to collaborate in the study of prehistoric farm sites on National Nature Reserves.

The Nature Conservancy is not officially concerned with archaeology, and the National Nature Reserves are selected as being of great biological interest. Yet it so happens that some Nature Reserves, especially those on the chalk in the south of England, have great archaeological interest in showing the pattern of former settlement and cultivation. For example, the Nature Reserve at Lullington near Eastbourne is covered with a pattern of Celtic fields and is illustrated under the name Fore Down, Lullington, on page 212 of *The Archaeology of Sussex* by E. C. Curwen. The Kingley Vale Nature Reserve near Chichester, preserved on account of the fine old yew trees, comprises a farm site, probably of the Late Bronze Age, where a perforated vessel which may have been used in cheese-making was found. The Reserve on Fyfield Down in Wiltshire shows terracing for cultivation with Sarsen stones in places arranged to hold up the soil. On nearby Overton Down air photographs have shown the 'lands' of ancient ploughing (Crawford and Keiller, *Wessex from the Air*, p. 124).

It seems probable that the present vegetation on many of the Downs may be explained by their cultivation in the past, and that the study of the differences, both in plants and in soils, must not neglect the past agricultural history of the areas. There should be a fruitful field for collaboration between the archaeologist, the agricultural historian, the botanist, and the soil chemist.

Yours faithfully,
A. S. THOMAS

The Nature Conservancy,
19 Belgrave Square,
London, S.W.1.

[It is suggested that anybody interested in Dr Thomas's project should write in the first instance to the Secretary of the British Agricultural History Society.—ED.]

Book Reviews

DAVID WILLIAMS, *The Rebecca Riots*. Cardiff, University of Wales Press, 1955. viii+378 pp. 25s.

This is a book which should be read by all those interested in the history of agriculture. It is a pity, therefore, that Professor Williams has chosen to call it *The Rebecca Riots*; his sub-title, 'A study in agrarian discontent', gives a far clearer impression of what the book is about and would perhaps find for it a wider public. It is true that it might be argued that the very purpose of the book is to tell something of the mysterious outburst of rioting which stole across areas of south-west Wales in 1839 and 1842, but in fact only three of the ten chapters are devoted to a direct discussion of the riots. The remaining seven give a lucid and penetrating picture of the social, economic, and agricultural background of the times.

The great virtue of *The Rebecca Riots* is that it provides an important and carefully prepared study of a community during the critical years when industrial Britain was arising and submerging rural Britain. Professor Williams has achieved this in a very readable manner and with an unerring eye for detail. He shows us clearly the suffering and sadness that characterized the life of the Welsh peasant, for Wales unlike England still had her peasantry in these fateful years.

In his description of the farming of the area he mentions many points of interest, and among them are several unusual survivals of custom and tenure: for example, the survival of food rents on a Cardiganshire farm in 1833, and the carting of turf and lime for the owner. Many other sidelights are shed on agricultural affairs. It is, for instance, of interest to learn that the first county agricultural society in Britain was founded in Brecknock in 1755.

At a time when agricultural historians are very conscious of the dangers of generalizing about agricultural conditions at any given period, the book comes as a timely reminder that farming in many parts of these islands

has never conformed to what has become the accepted norm. For example, Professor Williams is wise to remind us that the Tithe Commutation Act of 1836, which did so much to allay ill feeling about tithes in many parts of the country, actually increased the tithes of south Wales by 7 per cent.

One criticism which should be made is that no map of the area is provided. It is true that there are a number of maps showing the various road trusts, but although these may be sufficient for the Welsh reader they are totally inadequate for others. In order to follow many of the references a large map of the area is indispensable. It is also unfortunate that Professor Williams insists on referring to west Wales as the general area of the Rebecca risings; in fact the risings were geographically rather restricted, and many of his generalizations lead the reader to believe that they were wider in scope.

The description of the activities of the Rebecca rioters is stimulating. As each toll-gate is attacked Professor Williams is at pains to find reason and cause, and as he does so he leads us along exciting paths—even to secret midnight meetings attended by, of all people, the special correspondent of *The Times*. He takes us with vivid colour to the actual scenes of rioting and draws thumbnail sketches of the characters present with a freshness which makes it difficult to believe that he was not there. All the time we expect, over the page, or as the case may be at the next toll-gate, to be told directly who Rebecca was and why she acted as she did, but as the book draws to a close we are disappointed. Always on the brink of revelation, the author withdraws and in effect says: this is what happened, draw your own conclusions if you can! With his detailed knowledge of the Riots it seems surprising that Professor Williams does not know more of the answers. Time and again one senses a degree of reticence which suggests that he knows more than he will tell. It may indeed be that over

a hundred years afterwards the secrets of Rebecca have died with those who created her, either on the small farms in Australia to which they made their way after deportation, or in the remote hills of the west. But we must not discount the possibility, and it is pleasing to believe, that the secret is carried by all true Welshmen still. It would at least explain why the book concludes somewhat unsatisfactorily and why we are left with many questions and few answers. Perhaps Wales is still for the Welsh and Professor Williams will no more turn traitor now than his ancestors to whom the book is dedicated, the sons and daughters of Rebecca.

J. W. Y. HIGGS

The Making of the English Landscape: Cornwall, by W. G. V. BALCHIN (1954); *Gloucestershire*, by H. P. R. FINBERG (1955); *Lancashire*, by ROY MILLWARD (1955). Hodder & Stoughton. 16s. each.

These are the first three volumes of a series surveying the whole of England by counties, under the general editorship of Dr W. G. Hoskins. The object of the survey is to study the mutual influence and interaction of Man and Nature in producing the landscape, using that word in its widest sense, of England. Proverbially "God made the country, and man made the towns;" but the country as we see it is nearly as much man-made as the towns. Of Lancashire we are here told: "Above Conistone the Borrowdale Volcanics form the mountain group of Wetherham and the Old Man. . . On these few acres of true mountain summit one reaches the only natural landscape in the county apart from the coastal strips of empty saltmarsh and mudflats." Similarly in Gloucestershire: "Forty centuries of human handiwork have left their imprint on the face of the land, and marked it so deeply that it would be difficult now to find twenty acres together which remain in their natural state." In both counties the forests, far from being primeval, have been formed by comparatively recent planting; new hills have been built up with the waste from mines; the 'pool' of Liverpool has

been filled and built upon, Martin Mere has been drained, but by way of compensation the subsidence of mined land has produced new lakes, or 'flashes'. The stubborn soil of Cornwall has been slightly more successful in repelling human attacks; but here too mines and quarries of slate, granite, and china-clay have made new valleys and hills.

Of the three counties Cornwall alone is a natural unit; Gloucestershire is a Saxon creation with arbitrary boundaries; Lancashire is a territorial amalgamation of Norman times. In Cornwall emphasis is on the prehistoric periods, and groups of small fields have in places remained unchanged from Celtic times, and for the most part the settlements were isolated farms and hamlets. Here Rome left little mark; but in Gloucestershire the Romans built roads and forts, towns and country houses, particularly in the Cotswolds. This civilization fell before the Saxon invaders, who occupied the whole district, but the towns survived, or revived. In Lancashire neither Celt nor Roman left much mark on the landscape; Saxons and Angles, and Scandinavian invaders from Ireland, settled the district but sparsely, gradually clearing the forest, but it was not until the sixteenth century that industry began to set its stamp seriously upon the scenery of the county. It was the Industrial Revolution that completed the stamping. "As sure as God's in Gloucestershire," Mammon was in Lancashire, and if wool had produced Chipping Campden cotton produced Oldham.

These monographs make fascinating reading; to learn of the development of the country scenes—the clearance of the woods to form open fields (*Gloucestershire*, p. 65), and the enclosure of these fields and their conversion to pasture for the all-important sheep. One sees the great country houses, such as Badminton, starting with formal gardens, which in turn were ravaged by a change of fashion for the naturalistic grounds of 'Capability' Brown, while the native Cotswold architecture gave way in the new spa of Cheltenham to classic, in less fortunate

towns to 'Gothic Revival', and in Gloucester to hugger-mugger. One can trace the development of the roads, the rise and fall of the canals, and later see how "Romance brought up the 9.15" over Chat Moss, or across the viaducts of Cornwall or the Severn Bridge. The books are lavishly illustrated with maps and relevant views; and it is some satisfaction that in the two later volumes these views are distinctly better reproduced than in *Cornwall*, where they tend to be muddy almost to invisibility.

L. F. SALZMAN

KEITH A. H. MURRAY, *History of the Second World War: Agriculture*. London: Her Majesty's Stationery Office, and Longmans, Green, & Co., 1955. xii+422 pp. 30s. This further volume in the Civil Series of histories of the Second World War fully maintains the high standard set by its predecessors. It possesses all the qualities one would expect to find in such a work, coming from the pen of so distinguished an economist and administrator, particularly when based—as its author generously acknowledges—on the preliminary research carried out by Miss Edith Whetham, Gilbey Lecturer at Cambridge University.

The achievements of British agriculture during the war are well enough known in broad outline. Here for the first time the detailed narrative of that achievement is presented against the background of war strategy and national planning. We are shown the failures as well as the accomplishment. Thus, milk supplies were not always fully maintained. The price policy adopted was unnecessarily extravagant and gave some producers too high profits. The machinery for formulating policy creaked a little in the early war years. But the author can rightly claim that the performance was "successful far beyond the calculations and estimates of the pre-war planners" in spite of the fact that the war took a much more difficult course than was ever anticipated. Who, in 1939, could have forecast, for example, that within less than a year this country would be cut off

from nearly all European sources of food, and within little more than two years also from its Far Eastern supplies of such staple foods as sugar and oilseeds?

The book falls into four parts, the first three of which are mainly narrative while the last critically reviews what was done and achieved. Many readers will find this last section of greatest interest. The narrative sections, so far as the war-time period is concerned, are divided into chapters on a yearly basis, each chapter following a uniform plan. After describing the state of the food supply in each year, the author shows how the home production programme was worked out in the light of imports, and then proceeds to recount the measures taken to implement that programme through such means as price control, regulation of raw materials, labour supplies, and so on. Though the arrangement is logical, this method of treatment does perhaps tend to become a little monotonous by the time the last year of war is reached.

The student of Government administration will find much of interest in the account, given in Chapter XII, of the evolution of machinery for co-ordinating the formulation and execution of policy. It will be no surprise to most people that there were sometimes differences of view on important issues between the various Departments concerned, especially in the earlier years. On price policy, for example, the Ministry of Food took the view that prices should be increased for those commodities whose production it was desired to encourage, while others might be positively discouraged through price reductions. The Ministry of Agriculture, on the other hand, favoured all-round price increases and reliance on methods such as persuasion or direction to secure the type of production required. Again, the Ministry of Food would undoubtedly have taken a rather tougher line with farmers both in limiting livestock numbers in the light of the much reduced supplies of feeding-stuffs and in taking control, for human consumption, of coarse grain supplies grown for livestock feeding. The view of the Ministry of Agriculture prevailed

in all these matters, and whatever the logical merits of the case it can at least be argued that the decisions made helped to retain the full co-operation of the farming industry, without which the food production campaign could not have succeeded.

Of the war-time developments which have become more or less permanent features of the agricultural scene, the economist tends to focus his attention upon the policy of guaranteed prices and its attendant problem of maintaining an adequate level of economic efficiency. The agricultural historian, however, may well think that the most important permanent results of the war for British farming are the changes in technique which it stimulated, e.g. the greatly increased use of fertilizers, the improvement of grassland husbandry, and the mechanical revolution, none of which, it is probably true to say, would have proceeded so far or so fast under normal peace-time conditions.

C. H. BLAGBURN

Ulster Folklife. Issued by the Committee on Ulster Folklife and Traditions. Belfast, 1955. 56 pp. and 6 plates. Subscription 5s. 6d.

This well-produced first issue of *Ulster Folklife* is an introduction to the work and activities of a committee established in 1952 to survey the folk way of life in Northern Ireland.

Folklore is dealt with in three papers. The first, on the vexed question of definitions and methods, is a restatement of what is already known amongst experts, but the subject is

given a new emphasis in this clear and well balanced account. The second points out the pitfalls to be avoided in the regional collection of folklore, and the third discusses Harvest-knots and Brigid's Crosses. The suggestion here that the cult of the saint is in some way connected with the harvest, is new.

Perhaps the most original and individual contribution is that on the people of the Irish 'forths' or primitive farmsteads. The skilful handling of the evidence presents a convincing picture of the successive stages in Irish rural economy. A concise and valuable survey of the typical small Ulster farmhouse follows. The next paper discusses the influence of topography, roads, and a local economy based on subsistence agriculture, in relation to farm vehicles. The Irish slide-car, essentially a cart without wheels, dates from the Bronze Age and is still found in some remote hilly areas. Various reasons are given for its continued use, but surely the cost ("in 1802 slide-cars cost 3s. 9½d. . . . wheel cars, £4 4s.") and simplicity were the main contributing factors.

Agrarian historians are well served by the study of place names. In *The Legends of Place Names* the folklorist and social historian are offered a careful and thorough study of the mythological and pseudo-historical elements in the legends.

The paper *Ordnance Survey Memoirs* is little more than a catalogue of short and unrelated snippets. Finally, in *Notes on the Parish of Carrumoney*, a third of the material, on churches, schools, and transport, is interesting. The remainder is made up of stereotyped tales of witches and fairies.

T. D. DAVIDSON

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