

The Statistical Assessment of British Agriculture

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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.