

WAR AND BRITISH AGRICULTURE

BY

D. A. E. HARKNESS, M.A.



P. S. KING & STAPLES LIMITED
FOURTEEN GREAT SMITH STREET
WESTMINSTER

MADE AND PRINTED IN GREAT BRITAIN BY
JOHN BALE AND STAPLES LIMITED
(A STAPLES PRESS COMPANY)
83-91 GREAT TITCHFIELD STREET LONDON W1

CONTENTS

	PAGE
CHAPTER I	
Introduction - - - - -	I
CHAPTER II	
Tendencies in British Agriculture before 1914 -	5
CHAPTER III	
War Expansion and Decline - - - -	18
CHAPTER IV	
The Years Between - - - - -	28
CHAPTER V	
War, 1939 - - - - -	54
CHAPTER VI	
The Future - - - - -	73

CHAPTER I

INTRODUCTION

ON September 3, 1939, the United Kingdom declared war on Germany. For the second time in a quarter of a century British Agriculture was called upon to make the inevitable adjustments consequent upon the occurrence of a state of war. There is too little realization of the full significance and extent of these adjustments. The effect of war upon industrial production is appreciated by all. The change-over by engineering firms from the manufacture of locomotives to tanks, the production of aeroplanes rather than motor cars, even the manufacture of Army greatcoats in place of civilian dress, all suggest a different organization, a different orientation of the peace-time activities of industry. In the case of agriculture it is too often assumed that all that is required is an intensification of normal peace-time production.

In actual fact, far from the problem of war-time agriculture being one mainly of the speeding up and expansion of production, it is equally one of changing the methods and organization of production in order to meet new requirements. The change-over from livestock production to tillage may mean for the farmer a change of methods

comparable to the change of layout and organization called for from a factory which turns over from the production of textile machinery to the production of munitions. The call for increased food production—the slogan “ Dig (or Plough) for Victory ”—demands from the agricultural industry not simply that it shall double its pre-war output along the whole line of agricultural products, but that it shall increase its output of some articles perhaps fivefold, or even a hundredfold, while reducing its output of others to a third of the previous level or to some even smaller proportion. Indeed more than this is required, for war means the interruption of the normal development of British agriculture and the reversal of the trends which have been in operation for three-quarters of a century : for the types of agricultural production which it is necessary in the national interest to encourage in time of war are in general those classes of production which have been declining under the economic conditions of peace. Equally, the branches of British agriculture which have been expanding in peace time are in very many instances those which it becomes necessary to curtail when war breaks out.

The extent to which in 1914-18 and in the present struggle the impact of war has interrupted the normal progress of agricultural development in the United Kingdom is dealt with in these pages, and also the acute problems which arose at the end of the last war when it became necessary to revert once more to a peace-time agriculture. For, just

as the changes in the industry occasioned by war conditions have been underestimated or misunderstood, so also have the problems of agricultural reconstruction been minimized or ignored. There has been too often present the assumption that war provides a fillip to home agriculture and that all that is necessary after hostilities cease is to assist the industry to hold the ground gained under the stimulus of war. It may be recognized that some State assistance by way of subsidies or tariffs will be necessary after the artificial stimulus of war has been removed, but no radical change in the organization or development of British farming is regarded as being required. Actually, however, the problem of post-war agriculture is not one of the relaxation of effort to a more normal rate of production, but a complete change of direction in the productive effort of the industry. Unless this is recognized all measures for dealing with agriculture after the conclusion of hostilities are doomed to failure. There must be an appreciation of the directions in which agriculture has been moving before the war, the extent of the interruption that has been occasioned during the period of hostilities, and then a decision as to the steps necessary to shunt the industry back on to the rails upon which it was previously travelling. If for any reason it is decided that the lines of pre-war development are undesirable in the circumstances of the post-war period, then some modification of the plan for reconstruction on a post-war basis may be required. But the interruption in the normal

4 WAR AND BRITISH AGRICULTURE

trends of development which have occurred must first be appreciated. Only when the extent to which farming has been diverted from its proper development is recognized can intelligent measures be adopted to enable the industry to regain its economic balance.

CHAPTER II

TENDENCIES IN BRITISH AGRICULTURE BEFORE 1914

WHEN war broke out on August 4, 1914, the arable area of the United Kingdom had been declining almost continuously for just over forty years. The largest extent of arable land ever recorded in Great Britain was 18,429,000 acres in 1872. This had declined to 14,256,000 acres in 1915, which was the smallest figure recorded up to that date. In Ireland a somewhat similar story could be told except that it could be carried back for an even longer period, partly because of the depopulation of the countryside which resulted from the Great Famine of 1846-47—but probably also for the simple reason that whereas the annual agricultural statistics of Great Britain do not extend beyond 1867, they are available for Ireland for a previous twenty years back to 1847.

The causes behind this progressive decline in arable cultivation may be found in two principal directions. The forty years prior to 1914 witnessed a great increase in the volume of agricultural imports from overseas, while the first half of this period also saw a prolonged fall in the level of prices.

Let us consider first the increased imports of agricultural products which took place during these years. The way for these imports had been paved long previously, before the turn of the first half of the nineteenth century, when the Repeal of the Corn Laws took place in 1846. There is probably no event in the agricultural history of the past hundred years which is better known to townsmen and countrymen alike than this action of Sir Robert Peel which established the doctrine of free trade as a basic principle of British economic policy for a period of eighty years. The event left its mark upon the political history of the nineteenth century, and the spectacle of "the gentlemen of England" filing into the Opposition Lobby to vote against their leader has been vividly described by Disraeli :

"It was not merely their numbers that attracted the anxious observation of the Treasury Bench as the Protectionists passed in defile before the Minister to the hostile lobby. It was impossible that he could have marked them without emotion: the flower of that great party which had been so proud to follow one who had been so proud to lead them. . . . The Mannors, the Somersets, the Bentincks, the Lowthers and the Lennoxes passed before him. And those country gentlemen, 'those gentlemen of England' of whom, but five years ago, the very same building was ringing with his pride of being the leader—if his heart were hardened to Sir Charles Burrell . . . he surely must have had a pang when his eye rested on Sir John Yarde Buller, his choice and pattern country gentleman. . . . They trooped on: all the men of metal and large-acred squires, whose spirit he had so often quickened and whose

counsel he had so often solicited in his fine conservative speeches."

The Repeal of the Corn Laws is remembered for bringing about the disruption of the Conservative party and for inaugurating a period of eighty years of free trade, but what was its effect upon the broad acres of England and the rest of the United Kingdom? There is no complete statistical data available with which to measure the effects upon British agriculture during the ensuing twenty years. In Ireland, where statistics are available, the area under corn crops declined by 570,000 acres between 1847 and 1854. Wheat fell from 743,871 acres to 411,284; barley and bere from 332,655 to 253,213; and oats from 2,200,870 to 2,045,298.

It is improbable, however, that the Repeal of the Corn Laws had nearly such serious effects at the time as "the gentlemen of England" anticipated. Within a few years after 1846 there set in a lengthy period of stable or slightly rising prices following the discovery of the Australian and Californian gold mines, and in the late fifties and in the sixties of the last century British agriculture was not unprosperous. For long afterwards those years were regarded in retrospect as ones when husbandry enjoyed its rightful place in the economic life of the nation. But the floodgates had been opened, and when the development of transport in the new countries of the world, together with the introduction of the self-binder, enabled the virgin soils of those countries to be exploited fully, the British market stood open ready to absorb a steadily increasing flow of imports.

The reduction in freight rates which occurred during the period between around 1870 and 1890 is illustrated by the following figures in respect of wheat from the United States. The cost of moving wheat by rail from Chicago to New York ranged from 10s. 2d. per quarter to 8s. 9½d. per quarter in the years 1868-1872. If advantage was taken of the water transport afforded by the Great Lakes the cost was from 8s. 3½d. to 6s. 3d. per quarter. The corresponding figures for 1888-1892 were between 5s. and 4s. 9d. per quarter by rail and between 3s. 8d. and 2s. 10d. per quarter by lake and rail. The steamer charge from New York to Liverpool fell from between 5s. 6d. and 3s. 11d. per quarter in the earlier period to between 2s. 7½d. and 1s. 7½d. per quarter in the later years. On the average, costs of transport between the middle west and this country were considerably more than halved during these years. The effects of improvements in transport and reduction in freight charges upon the quantitative volume of imports into the United Kingdom may be illustrated by the follow-

	<i>Wheat*</i> <i>cwts.</i>	<i>Barley</i> <i>cwts.</i>	<i>Oats</i> <i>cwts.</i>	<i>Beef</i> <i>cwts.</i>	<i>Mutton</i> <i>cwts.</i>
1861-63	39,525,664	6,336,583	5,345,659	—	—
1871-73	47,868,773	10,952,214	11,453,071	1,404,926†	429,669‡
1881-83	79,062,471	13,935,795	13,033,372	3,037,672†	671,389‡
1891-93	92,983,537	18,195,867	15,372,258	5,154,369	1,931,648
1901-03	108,578,845	24,550,084	18,303,867	7,443,449	3,999,864
1911-13	119,428,717	22,370,321	18,245,367	9,362,528	5,355,583

* Including wheat meal and flour expressed as the equivalent weight of grain.

† Exclusive of preserved meat.

‡ Exclusive of preserved meat, and also frozen and chilled meat prior to 1882.

ing table showing the average imports of wheat, barley, oats, beef and mutton in the first three years of each decade from 1861-63 to 1911-13.

The steadily mounting totals are a tribute to the way in which the British public in time of peace has been able to bring to its dining-table the produce of the whole world. Part of the increase in quantities reflects the steady growth in the population of these islands, but part also measures the extent to which land was driven out of arable cultivation in this country. The very great increase in the level of imports of wheat between 1871-73 and 1881-83 is specially noteworthy. During these years the area devoted to this crop in the United Kingdom fell from 3,766,177 to 2,941,000 acres.

A great increase in the volume of imports from abroad was not the only problem with which British agriculture had to contend in the seventies and eighties of last century. These years also saw a prolonged fall in the general level of prices. The *Statist's* annual index number of prices had on the whole been rising, or at least fluctuating within narrow limits, during the twenty years prior to 1873. In that year it reached a figure of 111¹. Thereafter an almost continuous decline set in until the figure of 61 was reached in 1896. After that date the effects of gold mining in South Africa resulted in a rapid increase in the production of gold² and the level of prices gradually rose until

¹ Base period 1867-77 = 100.

² The value of the estimated production of gold was £20.9 million per annum in 1881-85, £52.9 million in 1896-1900. The high figure of £97.5 million was reached in 1913.

the index number stood at 85 in 1913. Between 1873 and 1896, however, the general level of prices declined by very nearly half and contributed materially to the prolonged period of agricultural depression which prevailed during these years. The following table compares the average price of certain agricultural products in 1873, 1896 and 1913 :

Commodity	Quality, &c.	Unit	1873		1896		1913	
			s.	d.	s.	d.	s.	d.
Wheat ..	English "Gazette" average	Qtr.	58	8	26	2	31	9
Barley ..	do.	do.	40	5	22	11	27	3
Oats ..	do.	do.	25	5	14	9	19	1
Potatoes ..	Good English	Ton	160	0	55	0	78	0
Beef ..	Prime English	8 lb.	5	5	3	9	4	6
	Middling	do.	4	8	2	10	4	1
Mutton ..	Prime	do.	5	11	4	5	5	2
	Middling	do.	5	3	3	3	4	8
Pork ..	Large and small average	do.	4	6	2	11	4	7
Bacon ..	Waterford	cwt.	81	0	50	0	77	0
Butter ..	Friesland	do.	123	0	98	0	119	0
	Fine to Finest							
Wool ..	English, Lincoln Half Hogs	lb.	2	0½	0	11½	1	0¾

The disastrous fall in prices that occurred between 1873 and 1896 is immediately apparent, together with the moderate recovery which had taken place by the eve of the outbreak of war. In certain commodities the fall in prices was more marked than in others, and it is noteworthy that the fall in the prices of crop products was notably greater than in the case of animal products. In particular the recovery in the prices of livestock products (with the exception of wool) that took place between 1896 and 1913 was in general

appreciably greater than in the case of crops. In 1913 the price of beef, mutton, pork, bacon, and butter was not appreciably lower than forty years earlier—in no case was the fall in price greater than 17 per cent., while the decline in butter and bacon was less than 5 per cent., and pork was even fractionally higher in price. On the other hand, the price of potatoes had more than halved, that of wheat had almost halved, the price of barley had fallen by a third and that of oats by a quarter.

The agricultural producer is particularly susceptible to changes in the general price level because agricultural production is a lengthy process. Costs of production have to be incurred a long time ahead of receipts. Expenditure in some cases may not be fully recouped until two or three years later or even longer. This is especially the case with the arable farmer, some of whose costs are not fully recovered until his rotation of crops has been completed. If in the meantime the general level of prices has fallen, the farmer's profits are reduced. He has in effect bought when prices are high and when he comes to sell finds that prices have fallen. This long "time lag" in agricultural production is of special importance to the farmer when prices are falling. In addition, the two principal items of expenditure in British agriculture are rent of land and wages of labour. In comparison with industry purchases of raw materials for use in further agricultural production — feedingstuffs, fertilizers and seeds—are small, although the tendency recently has been for the volume of these

purchased materials to increase. But whereas prices of raw materials follow closely the movement of the general price level, adjustments in rent and wages are made slowly and lag behind movements in prices generally. Rent and labour charges are indeed precisely those which are least tractable to revision in accordance with changes in the general price level. This does not mean to imply that farmers struggling with depressed times cannot secure a revision of rents from their landlords. There is abundant evidence that in the eighties and nineties of last century agricultural rents were substantially reduced. But they tended to be reduced slowly and the first shock of depression had to be taken by the farmer.

The net effect of the changes in British agriculture in the forty years prior to the first German War—whether due to increasing imports from overseas or to monetary instability—may be summarized in the following table, which relates to the United Kingdom of Great Britain and Ireland.

				1874	1914
				Thousands of acres	
Ploughed Area	..	..	..	17,178	12,670
Rotation Grass	..	..	..	6,285	6,744
Permanent Grass	..	..	..	23,680	27,350
Wheat	..	..	..	3,831	1,906
Oats	..	..	..	4,089	3,899
Barley	..	..	..	2,507	1,873
Potatoes	..	..	..	1,421	1,209
				1870-74	1910-14
				Thousands	
Cattle	..	..	..	9,747	11,934
Sheep	..	..	..	33,052	29,241
Pigs	..	..	..	3,813	3,813

The substantial reduction of 26 per cent. in the ploughed area is at once apparent. The fall in the area actually under the plough was greater than in the case of the area devoted to arable cultivation, for there was an increase in the area of rotation grass. It was evident that farmers had attempted to maintain their arable land at as high a level as possible by lengthening the rotation. Among crops the fall in the wheat acreage to less than half its former area is especially marked. On the other hand, cattle showed a substantial increase in numbers which far more than counterbalanced the drop in the sheep population. Pigs showed no change. Expressed in stock units the livestock maintained in the country increased by some 10·8 per cent.

The progressive decline in arable production was accompanied by some modification of cropping in the direction of stock food rather than crops for human consumption. Whereas in 1874 wheat was grown on over 22 per cent. of the tilled area, only 15 per cent. of the land under the plough in 1914 was devoted to this crop. There was little change in the case of barley, but the percentage of the ploughed area under oats rose from 24 to 31 per cent. There was also an increase in the proportion of the ploughed area devoted to root crops and potatoes. The significant feature is the change-over from wheat to oats, for it reflects the great change from arable to livestock production which marked these years. Livestock production was growing steadily in importance, and more and more of the British farmer's activity in cultivating

the soil was directed towards the production of crops to feed his livestock rather than for direct sale off the farm. There was every economic reason for this development for, although considerable, the fall in the prices of livestock products was materially less than in the case of arable crops and was also substantially less than the fall in the general price level. Moreover, the movement from crops to stock—"Up Horn, Down Corn"—meant that less labour was employed. The numbers of males ten years old and upwards employed in agriculture in Great Britain declined from 1,543,900 in 1871 to 1,429,500 in 1911. Despite the general fall in prices, cash wages rose substantially during the period and averaged about 12s. per week in 1871 compared with figures such as 18s. per week in 1913.

The forty years prior to 1914 were on the whole years of steady progress in industry and trade and in the general prosperity of the country. The standard of living rose and was reflected in a greater demand for the more expensive items of dietry—milk and eggs, vegetables, meat—at the expense of the plainer, although wholesome, foods such as bread, potatoes, oatmeal. The British farmer found an increasingly profitable market in the supply of quality foods, leaving the production of bread corn to the large prairie farmers in the New World or to the landlord farmers of Southern Russia and South-Eastern Europe.

It is a matter of considerable difficulty to assess whether the changes in British agriculture which

occurred in the forty years prior to 1914 meant an increase or a decrease in the output of food in this country.

It is apparent that the nature of the agricultural production in these islands underwent a great change during the period. There was a very big transference from arable farming to stock farming, but the decline in the ploughed area appeared more striking to the observer than the increase in live-stock production. But even in the case of crop production there was some offset to dwindling acres, for in several instances some increase occurred in the yield of crops. The increase in yields was principally in the case of wheat, however, and here there was a very big reduction in the acreage. Every restriction in the area devoted to a given crop increases the probability of an increased yield being obtained, for the land which goes out of cultivation is normally that which is least suited for the production of the crop in question. Indeed, in view of the very great fall in arable cultivation which took place during the years prior to 1914, it is perhaps surprising that the yield of crops did not show a greater increase. The increase was certainly less than occurred in other European countries and has raised the question whether the official crop statistics fully reflect the improvement in yield which actually occurred.¹

¹ The question of the accuracy of British agricultural statistics of crop yields was discussed exhaustively by J. A. Venn and H. D. Vigor in the *Economic Journal* and the *Journal of the Royal Statistical Society* in 1926 and 1928.

Of even greater importance in regard to the production from arable land was the increase in the area of vegetable and market-garden crops. Statistics as to the actual increase are not available, but it was undoubtedly considerable. Moreover, the fall in the area under potatoes was less than in the case of cereal crops, and here also the yield increased. Measured in terms of food production, an acre of potatoes will, of course, yield substantially more than an acre devoted to wheat, and it was the crops with a comparatively low food production per acre which suffered the principal reduction in area.

In the case of livestock, not only was there an increase in the numbers maintained, but there was also a substantial increase in the yields of produce obtained from them. The progress made in the fattening of early maturing animals meant that even the same livestock population in 1914 as in the earlier period represented a larger number of animals bred. In addition, there was a substantial increase in the yield of meat per carcass. This is shown by the following estimates of the average weight of dressed carcass in 1872 and 1908.¹

	<i>Cattle</i>	<i>Calves</i>	<i>Sheep</i>	<i>Lambs</i>	<i>Pigs</i>
1872	600		72	24	134
1908	672	98	67	38	160

With the exception of sheep, the amount of meat obtained from each class of animal slaughtered

¹ The figures are quoted by the late Sir Henry Rew, K.C.B., in a paper: "Progress of British Agriculture," read before the Royal Statistical Society in 1922.

showed a very noteworthy increase. A similar increase occurred in the yield of milk. Various estimates of milk production per cow made in the 1870s placed the average annual yield at not more than 400 gallons. At the time of the Census of Production inquiry in 1908 the average yield was placed at 550 gallons per annum, and in 1919 an Official Committee on the Production and Distribution of Milk considered that a further increase had taken place up to 1914.

All these developments went far to increase the productivity of the livestock of the country, while it is also certain that some increase in crop yields took place—perhaps even a greater increase than the official statistics indicate. No dogmatic answer to the question is possible, but the late Sir Henry Rew, one of the most famous of British agricultural statisticians, in his Presidential Address to the Royal Statistical Society in 1922 summed up a detailed discussion of the progress of British agriculture prior to 1914 with the words :

“ I claim that an examination of the statistics so far as they are available points to the conclusion that a larger quantity of food was being produced at the outbreak of war than at any previous period. The food was not the same in kind as it was forty or fifty years ago, but it was greater in quantity.”

CHAPTER III

WAR EXPANSION AND DECLINE

At the outbreak of hostilities in 1914 the significance of modern warfare and its urgent claims upon home agriculture were not at first realized. There were those who believed that an effort should be made to increase the area under wheat, but there was no idea of putting agriculture upon a war footing. Mobilization was a matter for the Army and Navy, perhaps for the banks on account of our large overseas financial transactions, but not for industry or agriculture at home. Within a very short time the motto "Business as Usual" had come to be adopted as representing the way in which the farmer, shopkeeper or industrialist could best serve the interests of the country. This viewpoint appeared to have the support of the Government. Early in September, 1914, the question was raised as to the action to be taken by farmers in regard to the war, and the following answer on behalf of the Board of Agriculture and Fisheries was given to a Parliamentary question :

"With regard to next year's cereal crop, the Government have carefully considered all the available information; it is a highly technical question, and after consulting expert opinion they have arrived at the conclusion that they would not be

justified in holding out a financial inducement to farmers to increase their acreage of cereals. At the same time the Board adhere to the advice which they issued to farmers recently, with the concurrence of the Consultative Committee, that wheat appears likely to be a profitable crop next year."

The agricultural returns for 1915 showed that farmers either followed this somewhat cautious advice or else shared the same opinion as the Government, for the wheat area in the present United Kingdom of Great Britain and Northern Ireland increased by 386,000 acres in 1915. But this increase was very largely secured at the expense of other crops, including rotation grass, for there was only a trivial increase in the total ploughed area—a matter of sixteen thousand acres on top of an area of just over eleven million acres under the plough at the outbreak of war. The harvest of 1915 was good not only in this country but in Canada and the United States. The submarine campaign declined greatly in intensity during the summer of 1915, and all these factors combined to give a feeling of increased confidence with regard to the food supply situation. Food Production Committees were set up in England and Wales, Scotland and Ireland in the summer of 1915 "to consider and report what steps should be taken, by legislation or otherwise, for the sole purpose of maintaining and, if possible, increasing the present production of food . . . on the assumption that the war may be prolonged beyond the harvest of 1916." The Committee for England and Wales, under the Chairmanship of Lord Milner, unani-

mously recommended that farmers should be guaranteed a minimum price of 45s. per quarter for wheat for a period of four years, but, influenced by the apparently satisfactory supply position, the Government declined to accept this recommendation, which, incidentally, was opposed by the Scottish Committee.

In the absence of any anxiety on the part of the Government, farmers made no further effort to push the plough. Conditions on the farm in the first two years of war were not altogether devoid of difficulties. There was trouble over shortage of labour, while supplies of some fertilizers were short—notably potash, which before 1914 was mainly obtained from Germany. The increased wheat acreage of 1915 had been secured by including an additional corn crop in the rotation. This could not be continued, and in 1916 the area under wheat declined by 275,000 acres. Moreover, the total tillage area was reduced by 135,000 acres. Two years after our entry into war the area under the plough was over a hundred thousand acres less than at the outbreak of hostilities. Meanwhile livestock numbers showed little change compared with 1914. Although there had been a reduction in the dairy herd and in pigs, cattle and sheep were more numerous than at the outbreak of war. The first two years of hostilities had, in fact, left British agriculture still continuing on its peace-time course. Various proposals in regard to war plans for the industry had been canvassed, but they had resulted in no real modification of the conditions in opera-

tion at the outbreak of war. But a great change was soon to occur in the attitude of the Government towards the contribution of home agriculture to the nation's food supply. The harvest of 1916 was poor, not only in this country but in the principal overseas countries from which supplies were obtained. Increased shipping difficulties were beginning to be experienced. As a consequence it became apparent that renewed efforts must be made to increase the ploughed area, and a special Food Production Department was created at the beginning of 1917. Compulsory powers under the Defence Regulations were invoked to secure a great expansion in the tilled area. The unrestricted submarine campaign which was commenced by Germany at the 1st February, 1917, was a potent influence in speeding the activities of the Government and farmers alike to grow more food in these islands.

The result was a considerable expansion in the ploughed area in 1917 and 1918. An extra 467,000 acres were ploughed in 1917 over 1916, and a further 1,842,000 acres in 1918. The position in regard to the principal crops is shown below :

GREAT BRITAIN AND NORTHERN IRELAND.

	1916	1917	1918
	acres	acres	acres
Wheat	1,986,550	1,997,220	2,657,920
Oats	3,420,705	3,725,477	4,474,183
Barley	1,504,334	1,621,412	1,655,577
Potatoes	718,767	845,050	997,477
Total ploughed land	10,949,177	11,416,956	13,259,337

When the food-production campaign started at

the beginning of 1917 it was too late to do much in regard to increasing the wheat acreage. It was only possible to concentrate on spring ploughing. But the area under oats and potatoes was substantially increased. In 1918 there was proportionately a much greater increase in wheat.

The farmer was encouraged in his efforts by the introduction of guaranteed prices. On February 23, 1917, the Prime Minister, Mr. Lloyd George, announced the decision of the Government to accede to the demands which had for long been made by the farming community. In his speech he said :

“ . . . there is only one way of ensuring immediate action on the part of the farmer, and that is by guaranteeing prices for a definite period of time—minimum prices.”

The announced policy of the Government was implemented by the Corn Production Act, 1917, under which the following minimum prices were guaranteed :

Wheat	60s. per quarter of 480 lbs. for 1917
	55s. per quarter of 480 lbs. for 1918 and 1919
	45s. per quarter of 480 lbs. for 1920-22.
Oats	38s. 6d. per quarter of 312 lbs. for 1917
	32s. per quarter of 312 lbs. for 1918 and 1919
	24s. per quarter of 312 lbs. for 1920-22.

Actually prices for cereals in 1917 and 1918 were substantially higher than those guaranteed by the

Corn Production Act, but farmers felt that they had an assured market for a period of six years ahead. If the war continued they expected that prices would be better, but in any event, and even if prices slumped after the war, they felt that they could proceed with the ploughing up of grassland confident of a market at guaranteed minimum prices for the cereal crops they grew.

Meanwhile farmers were experiencing difficulties in maintaining their livestock population. It has been seen that up to 1916 little change had occurred in the numbers of animals kept on farms. During 1917 and 1918, however, difficulties began to be experienced with regard to feedingstuffs and some sacrifice of stock was necessary. The reduction was concentrated principally on pigs, and to a less extent sheep, and the numbers of cattle were substantially maintained, especially in the case of dairy cows, which increased. The main statistics are given below :

GREAT BRITAIN AND NORTHERN IRELAND

	1916	1917	1918
		'000 omitted	
Cows and heifers ..	3,170	3,196	3,314
Total Cattle ..	8,246	8,213	8,180
Sheep	25,416	24,461	23,762
Pigs	2,516	2,155	1,940

Particulars are not available in regard to poultry.

On the whole the war in 1914-18 did not involve farmers in any great sacrifice of livestock. There were feedingstuffs difficulties and the yield of milk certainly declined. Pigs had to be reduced by a

quarter, and there was a reduction of nearly 10 per cent. in sheep, although here other factors, such as shortage of shepherds and what were regarded as unsatisfactory prices for lamb, were at work as well as shortage of feed. But on the whole, British livestock were remarkably well maintained during the last war. It was, in fact, only at the very end of the war that the feedingstuffs situation was becoming really acute. It had been decided in August, 1918, that animal feedingstuffs would have to be sacrificed in the allocation of shipping space, but the Armistice altered the whole situation. Had the war continued another year the effect upon livestock production would have been much more serious.

The struggle of 1914-18 meant for the nation four and a quarter years of war, but for British agriculture more than two years had been engaged in farming as usual and for only about eighteen months could the industry be regarded as having been on a war footing. But the significance of placing agriculture upon a war basis had been very widely appreciated. Perhaps just because the whole trend of agricultural development in the forty years before 1914 had been away from the plough, the reversal of policy represented by the food production campaigns of 1917 and 1918 was thrown into greater emphasis. At any rate, the Government had recognized that permanent grassland could not be brought under the plough and kept under the plough simply as a war-time expedient. A temporary expansion in the area under wheat or other

crops could be secured as in 1915 by delaying putting arable land under temporary grass. In that year there was an increase of 16,290 acres under the plough, even although the arable area declined by 44,351 acres. But this was a *tour de force* which could not be repeated. If it was necessary to plough up old grassland, then a permanent policy was necessary, and this was provided by the guarantees in the Corn Production Act of 1917. There was, moreover, between 1914 and 1918 a considerable degree of discussion as to the place of agriculture after the war. The Milner Committee in 1915, which recommended strongly an increase in the ploughed area, did so not only from the point of view of the nation's interest in war, but also in peace time. They said :

“ We wish to emphasize the point that the conversion of a considerable amount of grassland into arable, bringing with it, as we believe it must, a great increase in our food supply, will be of permanent interest to the nation. The intensification of our agriculture will be even more necessary after the war than now, for then the nation's indebtedness will have reduced its purchasing power abroad, and the need will be felt for the extra employment of labour that arable land provides. Moreover, at all times a State purchasing the greater part of its food from foreign sources is *ipso facto* more open to attack and in a more unstable economic position when war comes¹. ”

There was an influential body of opinion in support of this view. Sir Daniel Hall, in his book

¹ This was the view of the majority. There was a minority report dissenting from this view.

"Agriculture After the War," published in 1916, said: "My text is the need for an increased production of food at home and the greater employment of men upon the land as essential to the security of the nation as a whole." But this view was not by any means universal among either agriculturalists, economists or politicians, while so far as farmers themselves were concerned, there was a great body of opinion which condemned the policy of ploughing up the pasture land of the country in order to grow what were often indifferent crops. This body of opinion steadily grew, especially in 1918, as shortage of pasture and the encroachment of the plough upon livestock became increasingly apparent.

Despite the discussions on agriculture after the War, which took place between 1914 and 1918, there was no agreed or official agricultural policy for the post-war period when the Armistice was signed on November 11, 1918. In the ensuing troubles connected with the Peace Treaties, and the economic problems of peace after war, agriculture was in large measure left to find its own salvation. Indeed, some of the props upon which farmers had relied for assistance in the post-war period were struck away, because the policy of guaranteed minimum prices for cereals was abandoned in 1921. The original Corn Production Act of 1917 had provided guaranteed minimum prices for wheat and oats until 1922. The prices for 1920-22 were 45s. per quarter for wheat and 24s. per quarter for oats. In 1920 the Agriculture Act of that year pro-

vided that the minimum prices should be 68s. per quarter of 504 lbs. for wheat and 46s. per quarter of 336 lbs. for oats. These figures related to the standard year 1919, and Commissioners were to be appointed to consider, in relation to 1921 and each subsequent year, "the percentage by which the cost of production of wheat and oats respectively of that year is greater or less than the cost of production of the wheat and oats respectively of the standard year," and the minimum prices were then to be adjusted accordingly. This measure became law on December 23, 1920, but in the early part of 1921 deflation set in and prices were almost halved inside two years. The result was that the Government found itself unable to implement the guarantees which had been given, and on August 19, 1921, eight months after the passage of the Agriculture Act, 1920, the provisions of that measure in regard to guaranteed prices were repealed, although without prejudice to payments in respect of wheat and oats grown in 1921. Agriculture was left naked to weather the blizzard of falling prices in the next few years, not to mention the wave of imports from overseas which began to arrive once more on our shores.

CHAPTER IV

THE YEARS BETWEEN

THE changes in agricultural production which took place during the latter years of the First German War were short-lived. Within a few years after 1918 the trends in agricultural production which were in operation prior to 1914 were again in evidence. Indeed, if the years from 1916 to 1923 are disregarded, then the course of events during the following decade appears as a projection of the tendencies which had prevailed for almost fifty years prior to 1914.

Following the repeal of the Corn Production Act in 1921, there occurred a decade during which the State's relation with agriculture was on the pre-war basis of *laissez faire*. Some assistance was undoubtedly given in the field of education and research, and financial help was also afforded in the relief of rates upon agricultural land which was completely derated in 1929, and in certain other minor directions. But these measures were simply an extension of developments that had already been in existence long before 1914. The Development Commission, which was responsible for grants for the development of agriculture and rural industries, had been established under the Development and

Road Improvement Funds Acts of 1909 and 1910, while the first enactment for relieving the industry from some part of the onerous burden of rates upon agricultural land was passed in 1896.

The attitude of the Government towards British agriculture during these years was admirably set forth in a White Paper on Agricultural Policy, which was published in the early part of 1926, when Mr. Stanley Baldwin was Prime Minister and Mr. Walter Edward Guinness was Minister of Agriculture and Fisheries. The paper contained the following paragraphs :

“ The Government have considered various proposals, which have been submitted to them, involving subsidies, either direct or indirect, to encourage corn growing or the increase of our arable area, but they have come to the definite conclusion that they cannot support or advocate any of them. A subsidy may sometimes be justified as a purely temporary expedient or if it is required to start a new industry like sugar beet, but any general scheme of subsidies for agriculture is open to the gravest objection. They would have to be unlimited in duration and very large in amount to have any material effect in increasing the arable area or the number of workers employed. Even a subsidy of £2 an acre on arable land, which would amount to over £20,000,000 a year, would not necessarily result in any considerable increase, and in the present financial situation of our country it is impossible to contemplate a large additional charge on public funds without any guarantee of a corresponding national benefit. Moreover, in view of the extreme variations all over the country in the quality or productive capacity of the land, it is impossible to devise any scheme or subsidies which will not result in the payment of a bonus to farmers

who do not need it and for which no return will be received by the nation. The Government have also examined the question from the point of view of national defence and have come to the conclusion that no case has been made out on defence grounds which would justify the expenditure necessary to induce farmers in time of peace to produce more than economic considerations dictate. The maximum possible increase to the national food supply would be relatively small from the defence point of view in comparison to the cost involved. All proposals that have been made on the grounds of national defence have aimed at extending the area under wheat. None of these schemes could make the country self-supporting as regards bread stuffs except at an impossible cost. On the other hand, from a purely economic point of view it will probably be better business for the British farmer to devote his energies as largely as possible to the livestock industry and to aim at meeting the demands of the population for meat and milk.

“ In these circumstances the right course in the best interests of the industry itself and of the nation as a whole is to proceed on the lines of education and encouragement rather than of coercion, to endeavour to create that confidence which is essential for progress, to stimulate the private enterprise of those engaged in the industry, to assist them to organize themselves on an economic basis, to protect them from the dislocation of reversals of policy and from rash proposals which would impair progress and breed insecurity.”

Then there follow paragraphs dealing with the provision of credit, the extension of small-holdings, the improvement of the amenities of the countryside, afforestation—“ large areas of land in many

parts of Great Britain are more suited to the production of timber than food"—the provision of Government funds for drainage, the assistance of "sound schemes" of co-operative marketing, and for research. Assistance for the provision of "more and better housing accommodation in rural areas" and the improvement of unclassified roads was also promised, while assurance was given in regard to the continuation of the existing policies for eradicating foot-and-mouth disease and for stimulating the sugar-beet industry.

Some of the phrases used sound almost ironic when read to-day: "any general scheme of subsidies for agriculture is open to the gravest objection," "in the present financial situation of our country it is impossible to contemplate a large additional charge on public funds," "no case has been made out on defence grounds which would justify the expenditure necessary to induce farmers in time of peace to produce more than economic conditions dictate," "rash proposals which would impair progress and breed insecurity." In almost every direction we have seen the reversal of the policy laid down fifteen years ago. The policy adumbrated at that time may be regarded shortly as designed to afford agriculture every assistance to make itself as efficient as possible in order to face the free competition of overseas imports. Within these limits the treatment proposed was not ungenerous, nor perhaps in the light of public opinion at that date with the hope of a return to something in the nature of the economic conditions

of pre-1914 (we had returned to the Gold Standard a few months previously), could agriculture expect more favourable treatment. In a free-trade world, with no shadow of impending war, could any Government do more for an industry than assist it to achieve its maximum efficiency under the free play of economic forces? And are there any to-day, with recent experience of economic autarchy and total war, who will deny the attractiveness of a world order based on free trade and universal peace which in 1926 we had not ceased to regard as practicable, and for which we were actively striving? In Germany the Weimer Republic was still in control—uneasy, but not yet known to be doomed to failure. Economic nationalism was believed to be on the wane. The economic conference of 1927 and the substantial increase in freedom of trade which temporarily resulted from its deliberations was still in the future. The prospect, and certainly not the hope, that it would be possible to rebuild a world order of freedom, security and prosperity despite the aftermath of the war and the peace treaties had not yet faded. As for home agriculture, in the words of the White Paper, it had “in common with many other industries . . . been severely hit by the fall in prices after the war, but it is weathering the storm and there is no reason to fear that it will not adapt itself to the economic situation.” It was clearly the view of the Government of the day that it could be saved by its own exertions if it was taught how these exertions should be intelligently applied.

It was not simply in the field of home agriculture that this policy was pursued. The rejection of the Baldwin proposals to introduce tariffs and imperial preference at the General Election of 1924 was followed in 1926 by the establishment of the Empire Marketing Board, with an income of a million pounds a year and with a mandate to teach the consuming public to buy home-produce first, then Empire, and only when the resources of the home and overseas dominions could not supply their needs to be willing to buy foreign goods. In addition, the Empire Marketing Board contributed largely to research projects. Publicity, together with the stimulation of research into the economic and scientific problems involved in the production and marketing of home and Empire produce, were the directions in which the Government sought to assist agricultural producers throughout the length and breadth of the British Commonwealth.

The culmination of this phase of the State's relations with the agricultural industry may perhaps be sought in the Imperial Agricultural Research Conference which met in the United Kingdom in the autumn of 1927, and which was attended by agricultural representatives from practically every Dominion and Colony. Every aspect of agricultural research was discussed and a number of Imperial Bureaux charged with the co-ordination of various branches of research work on an Empire basis were erected after the Conference. It was proposed to hold a second Conference in Australia in 1932, but before the interval of five years had

ment to 161. The three years 1923 to 1925 indeed provided a period when it appeared that prices had become stabilized and when it might be possible to establish the industry on a new basis of prices and production policy following the knife-like pruning which had been necessary in the years immediately after the war. It was felt that the Government was at least seeking an agricultural policy for the brand new post-war era which so far had yielded so many disappointments. The Lintlithgow Committee had reported on marketing reform; the Agricultural Tribunal of Investigation, composed of distinguished economists, presented a report in 1924 in fulfilment of its remit from the Prime Minister to advise as to the methods by which an increase in the prosperity of agriculture, and the fuller use of the land for the production of food and the employment of labour at a living wage, could be achieved in this country. But in 1925 we returned to the Gold Standard and a further fall in prices set in. The agricultural index number fell to 151 in 1926 and to 144 in 1927. The answer of the Government to a search for an agricultural policy was given in the White Paper issued in the Spring of 1926. A further setback to the industry was experienced. But the tide was beginning to turn. The Government's efforts to assist the efficiency of agriculture were not ungenerous within the framework of a free-trade economy based upon the Gold Standard. The fall in prices after 1925 had been relatively moderate compared with the experience of 1921-23, and from 1927 to 1929

elapsed there was a complete change in Government policy. The sequel to the events of 1927 was not a further meeting to discuss research, but an Imperial Economic Conference held at Ottawa in 1932 to discuss economic plans for sharing the British market between home and Empire producers.

Meanwhile, what was the position of the farmer during these years? There were, in fact, five fairly clearly marked periods between 1920 and 1931, although they were merely eddies upon the main current of agricultural development—a current which flowed strongly in the direction of reduced tillage and increased livestock. First of all there was the period of severe deflation which commenced in the spring of 1921 and continued for two to three years. The index number of agricultural prices (1911-13=100) stood at 292 in 1920, but fell to 219 in 1921 and to 169 in 1922. They were years during which widespread depression swept the countryside and the tillage area fell below even the pre-war level. For the reasons which have already been outlined, a period of falling prices must affect farming with special severity, and the great deflation of 1921-23 was no exception. The readjustment from a war- to a peace-time agriculture was effected in the worst possible conditions for the farmer, with prices falling in catastrophic manner and his confidence impaired by the repeal of the Corn Production Act in 1921. The bottom was reached in 1923 when the agricultural index figure was 157, for 1924 showed a slight improve-

prices were practically stable, although a further fall occurred in 1930 and 1931. It may be true that high farming is no remedy for low prices—a doctrine which is incontrovertible in face of the disastrous deflation of 1921 onwards—but a period of moderately falling prices is a great stimulus to efficiency. The key-note of the later nineteen-twenties was efficiency as a means to counteract economic depression, and there is little doubt that the efficiency of British agriculture increased during these years. If the value of the gross output of agriculture in England and Wales is divided by the index number of the prices of agricultural produce a rough index of the volume of agricultural production is obtained. The result is shown below, together with an index of the number of workers :

	<i>Volume of Output</i>	<i>Number of Workers</i> ¹	
		(a) <i>Male</i>	(b) <i>Female</i>
1924-25 ..	100	100	100
1925-26 ..	101.0	100.6	99.0
1926-27 ..	99.7	98.9	97.5
1927-28 ..	103.4	98.4	100.6
1928-29 ..	105.9	97.7	100.2
1929-30 ..	107.2	95.0	96.0
1930-31 ..	108.5	92.3	93.1

An increase of over 8 per cent. in the volume of the agricultural output took place during these years notwithstanding a decrease in the number of agricultural workers of between 7 and 8 per cent. In other words, the output per worker increased by approximately 15 per cent. There was a strong

¹ This index has been obtained by taking half the number of casual labourers and adding this figure to the number of workers returned as permanently employed.

incentive in this direction by virtue of the operation of the Agricultural Wages (Regulation) Act of 1924, under which wage rates increased until 1927, despite the fact that agricultural prices were falling. The total wages bill did not increase, however, because the number of workers employed was declining and a policy of high wages was accompanied by a high output per worker.

A further factor which assisted agriculture during these years was the fact that agricultural prices were maintained at a higher level than wholesale prices generally. In other words, the purchasing power of agricultural produce in terms of other commodities showed a progressive improvement. This was particularly the case in regard to the purchase of agricultural requisites. The most important of these is feedingstuffs for animals. The Ministry of Agriculture and Fisheries index number of the cost of purchased feedingstuffs declined between 1927-28 and 1930-31 from 154 to 82, whereas the fall in the general index number of agricultural prices was only from 147 to 125. In view of the predominant position occupied in British agriculture by the feeding of livestock, the abundance of cheap feedingstuffs during this period was of the greatest importance in assisting the industry and in sheltering the home farmer from the full effects of the world economic depression which marked these years. As in the time of falling prices between 1873 and 1896, the most severe fall in prices was in the case of cereals and farm crops. The following table shows how prices moved during the years 1920-29.

PERCENTAGE INCREASES OVER PRE-WAR

	<i>The Statist Index</i>	<i>Agri- cultural Prices</i>	<i>Live Stock and Products</i>	<i>Cereals and Farm Crops</i>	<i>Feed- ing- stuffs</i>	<i>Fertil- izers</i>	<i>Wages</i>
1920	195	192	192	185	173	159	—
1921	82	119	128	90	81	120	—
1922	54	69	76	49	46	47	74
1923	52	57	66	28	36	23	56
1924	64	61	63	54	54	19	56
1925	60	59	64	44	52	14	72
1926	48	51	58	34	25	13	76
1927	44	44	44	39	39	10	76
1928	41	47	51	34	54	-2	76
1929	35	44	52	23	39	Nil	76

The table brings out clearly that the fall in live-stock prices was substantially less than in the case of crop products. The arable farmer had to bear the full effect of the competition of cheap cereal products from overseas. The livestock producer found a relatively sheltered market for his produce in the home market and benefited from the low level of feedingstuff prices which followed the slump in prices in the new world. It was true that the arable farmer obtained his fertilizer supplies even more cheaply than the livestock producer obtained his feedingstuffs, but the dominant factor in crop production was the cost of labour which increased over the period. Although the high cost of labour affected the livestock farmer also, it did not do so to anything like the same extent as the arable farmer owing to the smaller employment of labour in stock farming as compared with crop production.

The end of *laissez faire* in relation to agriculture came gradually. It had already been recognized by the Labour Government that was in power from

1929 to 1931 that greater Governmental assistance was necessary for the industry, and the summer of 1931 saw the introduction of two agricultural measures of the first importance. One was the Land Utilization Act, which provided facilities for the settlement of numbers of the unemployed on the land, and for the Minister of Agriculture and Fisheries to assume ownership of derelict and neglected land. This Act has been allowed to lie dormant and has been quite overshadowed by the other measure passed in the first part of 1931—the first Agricultural Marketing Act. This also was an enabling measure, but it soon became the basis of agricultural policy, and it was under it that the various Marketing Boards for agricultural products were subsequently established. In the autumn of 1931, however, the Labour Government fell and the National Government, first under Ramsay MacDonald, later under Baldwin, and later again under Neville Chamberlain came into being. Within the next few years steps for the assistance of agriculture were taken by every possible method—by tariffs, by subsidies and by quotas—methods which five years previously had been declared completely impracticable and undesirable. It is impossible to follow in detail the various measures which were adopted, and the following paragraphs are designed merely to illustrate the principal ways in which the State sought to assist the industry.

The first measure adopted, in December, 1931, was the Horticultural Duties Act, under which heavy duties were imposed on imports of luxury

fruits and vegetables during certain parts of the year. This measure, however, was probably as much designed to assist in rectifying the adverse balance in Britain's overseas trade as to be of direct assistance to the British farmer. It was a relatively minor measure, but it was the first attempt on the part of the State to intervene in regard to the free flow of imports of agricultural products. It was a prelude to the Import Duties Act of 1932 under which a 10 per cent. *ad valorem* duty was imposed on all imports with the exception of a number of products—principally raw materials and foodstuffs—which were placed on a free list. As a consequence wheat, maize, meat of all kinds, live animals, flax, wool, and hides and skins were exempted from the general *ad valorem* duty. Moreover, the duty did not apply to produce from any part of the British Commonwealth. Its benefits to home agriculture, therefore, were very limited, and the end of free trade and the introduction of protection did not contribute greatly to the improvement of agricultural conditions during the thirties. The preponderating extent to which the British public are fed on food imported from overseas makes the application of any policy of tariffs for the assistance of home agriculture one fraught with danger and difficulty. It is not simply that about three-quarters of our food supply in the days of peace were imported from overseas, but that less than a tenth of the male occupied population are employed in agriculture. The family budgets collected by the Ministry of Labour in respect of industrial workers

in the United Kingdom in 1937-38 revealed that out of an average expenditure of 86s. 3d. per week per household expenditure on food at 34s. 1d. per week was by far the largest item, representing practically 40 per cent. of the total. The economic and political importance of cheap food is at once apparent, and there is abundant evidence that in the United Kingdom before the war there was a substantial proportion of the population suffering from under-nutrition. It may be readily conceded that there is no reason why the home farmer should be asked to produce at below the cost of production in order to enable the industrial worker to obtain cheap food. But it may be equally well contended that the industrial worker should not be denied the benefits of cheap food from overseas in order to benefit the home farmer, especially if the latter object can be attained in any other way. This is especially the case when it is remembered that a substantial part of the output of industrial workers is designed for the export market, where goods have to be sold in competition with those made by other industrial workers who have access to cheap food supplies. For all these reasons effective protection of home agriculture by means of tariffs cannot be regarded as a satisfactory means of assisting the industry, and little progress was made in this direction in the decade before the war. The tariff weapon is one which immediately appeals to farmers and which they have often asked should be applied for the assistance of the industry. But it is probably the least suitable for helping agriculture in this

country because, if it is to be effective, it means raising the price not only of that part of the nation's food supply which is home produced, but of the much larger quantity which is imported from overseas. The position may be well illustrated by the example of the Wheat Act of 1932 which was passed almost simultaneously with the Import Duties Act. Under this measure producers of wheat were guaranteed an average price of 10s. per cwt., or 45s. per quarter, for all wheat of millable quality. Farmers continued to sell their grain to merchants in the usual way. The average price realized on the open market was then determined at a later date and a deficiency payment was paid to the farmer representing the difference between the standard price of 10s. per cwt. and the average price ruling on the open market. A limit of 27 million cwt. was imposed as the maximum amount in respect of which the average price of 10s. per cwt. would be paid. If that figure were exceeded the amount of the deficiency payment was reduced so as to secure that the total amount of subsidy paid should not exceed the amount represented by 27 million cwts. at the full rate. Although the figure of 27 million cwts. represented a substantial advance on the amount of wheat produced in the United Kingdom in 1931, the year before the passing of the Act, when the total yield of wheat was only a little over 20 million cwts., there was a rapid increase in production as a result of the operation of the Scheme, and by the Agriculture Act of 1937 the limit was raised to 36 million cwts.

The fund from which subsidy payments to wheat growers was paid was derived from a levy imposed on all wheat flour sold by millers or importers of flour. The amount of the levy depended upon the amount of the deficiency payments due to farmers in any year. As a consequence the greater the production of wheat and the lower the price the higher the quota payments on flour had to be fixed. Thus in 1933-34, when the average price of wheat was 4s. 8d. per cwt., the amount of deficiency payments totalled £7,180,000, while in 1936-37, when wheat averaged 8s. 10d. per cwt., they amounted to only £1,338,630. But whether the aggregate payments to farmers were large or small, the amount of the quota payment had relatively little effect upon the cost of living because whereas the maximum amount of wheat upon which deficiency payments could be paid was limited to 36 million cwt. (the figure for 1938-39 was 36,800,000 cwt., and this was the highest figure recorded), the flour supply from which quota payments were levied was of the order of from 82 to 84 million cwts. The highest level at which quota payments were charged never exceeded 2s. per cwt. until October, 1938, and had frequently been a matter of a few pence. The Wheat Act thus afforded a means of assisting home agriculture which was flexible in its operation, and which involved raising from the consumer the minimum amount necessary to make good the guarantee of a standard average price to the producer. Its superiority over a straight tariff was undisputed. It worked smoothly and efficiently

in its operation and afforded general satisfaction to growers. On the other hand, the justification for raising the funds necessary to pay an economic price to the farmer from the consumer of bread and flour rather than from the proceeds of general taxation was hard to find. This was especially the case in view of the fact that it is the poorest sections of the community who are the largest consumers of bread and flour. One answer which might be attempted is that the Wheat Act of 1932 was an alternative to including wheat within the scope of the Import Duties Act of the same year. But no measure corresponding to the Wheat Act was passed in respect of meat and bacon, although it would have been equally practicable to do so, for in both cases home production constituted only a fraction of the total consumption of the country. Moreover, the principle of ear-marking the proceeds of a particular import duty or excise duty—to which the quota payments on flour were broadly analogous—for a specific purpose is one which has normally been resisted in British finance. In any event in its later extension under the Agriculture Act of 1937 the purpose of the wheat subsidy can hardly be regarded as wholly unconnected with defence considerations, and when the production of any agricultural commodity is stimulated out of considerations of national safety, it is clearly equitable that the expense involved should be defrayed out of the proceeds of general taxation rather than be borne by the consumers of the product in question. While, therefore, the Wheat Act can be

praised as an advance on the straight tariff, and on the grounds of its smoothness of administration, the method of raising the revenue required by means of a levy on consumption must be condemned. All the advantages of flexibility and smoothness of operation could have been retained if the necessary funds had been found by the State, while actual administration would have been simplified by obviating the necessity for collecting quota payments in varying amounts from importers and millers of flour. As for the farmer, it will never be good policy for British agriculture to be in a position when it can be shown that it is being subsidized by a levy upon the poorest classes of the community, and this is the position which arises whenever the funds for any scheme of assistance to the industry are levied directly from the consumer of food: for it is invariably the case that the poorer the household the greater is the proportion of the income expended on food.

The Wheat Act of 1932 was the only measure passed before the war under which the funds for subsidizing producers were obtained direct from consumers. When assistance was given to producers of oats and barley under the Agriculture Act, 1937, the necessary funds were obtained by means of payments from the Exchequer. The form of assistance given to oat growers under this Act is of special interest in comparison with the arrangements under the Wheat Act of five years earlier. In both instances a standard price was established which was 8s. per cwt. in the case of oats. Arrange-

ments were made for deficiency payments to be made to oat growers whenever the average price in the United Kingdom fell below 7s. 7d. per cwt. The deficiency payment was made on an acreage basis—originally at the rate of 6 cwts. per acre, which was subsequently raised to 14 cwts. per acre in 1939. A maximum standard acreage was also fixed on the analogy of the maximum quantity of wheat in respect of which assistance could be given. This maximum acreage was fixed at eleven-tenths of the 1937 figures. Moreover, there was a further maximum limit of £1 per acre as the amount of subsidy payable in any year. A further limitation arose from the fact that farmers could not obtain oats and barley subsidy as well as deficiency payments under the Wheat Act. The measure was, therefore, a corollary to the Wheat Act, designed to afford assistance to farmers principally engaged in the growing of cereals other than bread grain. In its early application, however, the assistance given to growers of oats and barley was much less favourable than that given to wheat growers, since assistance was limited to 6 cwts. per acre, whereas wheat growers were assisted in respect of their entire production.

It has been seen that the methods of assisting agriculture by tariffs and by subsidies (although levied from the consumer and not the taxpayer) were introduced almost simultaneously in the spring of 1932. In addition, the Government had already announced its intention of using another method—that of import regulation. At the end of 1931 the

Government announced that, provided an adequate scheme of reorganization for the pig and bacon industries could be devised, it was prepared to introduce a measure for the quantitative control of imports of bacon from overseas. The means of carrying out this policy of import regulation was provided by the Agricultural Marketing Act of 1933, and in the autumn of that year the Pigs and Bacon Marketing Schemes were introduced. They were introduced on the basis of the recommendation of the Reorganization Commission on Pigs and Bacon under the Chairmanship of Colonel Lane-Fox (later Lord Bingley) that the total supply of bacon and ham on the United Kingdom market should be stabilized at approximately 10 $\frac{3}{4}$ million cwts. as contrasted with approximately 14 million cwts. in 1931 and 1932. This policy was steadily pursued for a period of over five years. Imports of bacon and hams from overseas were progressively reduced, as is shown below :

	<i>Quantity Cwts.</i>	<i>Value £</i>
1931	11,964,825	36,346,943
1932	12,192,188	32,913,045
1933	9,953,167	32,993,984
1934	8,326,535	33,172,222
1935	7,603,672	30,462,249
1936	7,241,374	30,247,252
1937	7,600,134	32,440,620
1938	7,532,941	33,937,026

The great reduction in imports from overseas is at once apparent and the figures for 1936 showed a reduction of over 40 per cent. from 1932. But the decline in the value of the imports was a matter

of a mere 8 per cent. We paid in 1934 more than in 1932 and received nearly 4 million cwts. less bacon. It was true that the policy of restriction of imports resulted at first in a substantial increase in pig production in the United Kingdom. The figures speak for themselves :

1933	...	...	...	3,506,741
1934	...	...	...	3,906,785
1935	...	...	...	4,531,464
1936	...	...	...	4,561,830
1937	...	...	...	4,452,649
1938	...	...	...	4,383,140

But the policy of restriction naturally had the effect of increasing prices. Total supplies were reduced by about a fifth, and the result was to raise prices of all bacon sold on the British market, but especially imported bacon. A comparison of the price changes between 1932 and 1938 reveals the extent of the change.

	<i>1932</i> <i>Per cwt.</i>	<i>1938</i> <i>Per cwt.</i>
British Wiltshire		
Green, 1st quality	86/6	105/6
Irish Wiltshire		
Green, 1st quality	80/6	106/6
Danish Sides		
Green, 1st quality	61/6	104/-
Dutch Sides		
Green, 1st quality	54/6	100/-
Swedish Sides		
Green, 1st quality	58/6	100/-

The policy of import regulation in order to assist pig and bacon producers in this country achieved certain results, although the success of the Pigs and Bacon Marketing Schemes was very far from being unqualified. But as a means of achieving

the desired end the policy adopted possessed almost every conceivable objection. It involved the artificial restriction of an important and traditional foodstuff: many British breakfast tables were denied bacon because the Government deliberately limited the quantity available in order to raise prices. It did not succeed in its object of securing a progressive expansion of bacon production in this country so as to reduce costs of processing to a level which would enable the industry to compete on level terms with supplies from abroad. There was a moderate improvement in prices of British bacon and a big increase in the prices of imported bacon, which were raised to practically the same level as the British product. On the other hand, the scheme was extremely successful so far as countries such as Denmark and other suppliers of bacon to the British market were concerned. They obtained a quota of imports, a precise share of the British market, and were able to pursue a price policy designed to obtain the best possible price for the quantity of bacon they were permitted to send to us. Their success in marketing their supplies to the best advantage to them is apparent. But the British consumer was compelled to pay through the nose for the limited quantity of bacon which his Government allowed him to buy.

Perhaps the one method of import policy which was *not* tried out in the decade preceding the war was that of Import Boards, or Government purchase of overseas requirements. But if imports are going to be regulated on a quantitative basis, then

it is an elementary precaution to ensure that the quantity of imports required is purchased by a single buying organization. If bacon from overseas had been purchased in this way in the years before the war there is little doubt that considerable economies could have been effected, for there would have been a single buying organization on the market for certain limited quantities. It would clearly have been in a favourable position to buy cheaply. Instead British importers were in the position of having to buy their requirements from selling organizations in foreign countries which knew that they could purchase only limited quantities which they were anxious to obtain. The British consumer was left at the mercy of a sellers' ring. It is by no means certain that the incidence of a duty on food imports will always fall upon the foreign producer: the effect of an import duty may be to raise prices, and if the duty is to be effective in assisting the home producer, it is to be hoped this will be the result. In which case the consumer obtains some indirect benefits for the additional payments made by him for the imported food he buys go into the pockets of the Exchequer and help to reduce other taxes. But there is no doubt that the effect of the regulation of imports of bacon was to increase the price of both home and imported bacon, but principally the latter, and to put the enhanced price paid by the consumer in this country into the pockets of the foreign producer.

The continued restriction of bacon supplies to a fixed limit at a time when industrial prosperity was improving and the population increasing, finally

led in 1938 to the abandonment of this policy. The Bacon Industry Act which was passed in that year provided for a complicated system of State subsidies to pig and bacon producers during a period of three years. But in return the Government claimed for itself the right to relax the quantitative restriction of imports if it was felt desirable on grounds of public policy to do so. There was no abandonment of the policy of quantitative regulation, but a degree of relaxation tempered by a direct subsidy from the Exchequer. This development was fully in accord with the general tendency of Government policy in the years just before the war. The method of direct subsidy was becoming the favoured means of assisting home agriculture. Although quotas were imposed on certain imports of chilled and frozen beef, frozen mutton and lamb, it was found necessary to supplement the effect of these regulations by direct subsidies to the producer. From September 1, 1934, onwards a direct subsidy at the rate of 5s. per cwt. for live animals was paid to producers of fat cattle in the United Kingdom at a cost of about £4,000,000 per annum. At the outbreak of war proposals were under consideration for the application of a subsidy to sheep, while subsidies in respect of milk production were also afforded through the medium of the Milk Marketing organizations. As already indicated, cereal crops were already in receipt of subsidy payments—from 1932 in the case of wheat and from 1937 as regards oats and barley.

There was one other subsidy to agriculture to which special reference must be made. The Agri-

culture Act of 1937 provided for the supply of lime and basic slag to farmers at cheap rates, while the Agricultural Development Act of 1939 also empowered the Government to pay a subsidy of £2 per acre in respect of land which was brought under the plough after having been under grass for seven or more years. This measure was unique in that it represented an attempt to assist the farmer in the cultivation of land which would normally have been sub-marginal land—land which it would not pay to bring into cultivation even in response to the higher prices for produce guaranteed by the State. In the management of land in an old country it is natural that the best and most fertile land is cultivated first. Prices which may afford a profit to the farmer who ploughs good land may be quite unremunerative in respect of poor land. But if prices of produce are advanced so as to make cultivation profitable on the poorer soils, it means that substantial profits will necessarily be earned from the more fertile lands. The device of paying a subsidy on the breaking up of old pasture land—land which had not been in cultivation for many years—enabled this land to be brought under the plough at the minimum cost to the State, for the farmer who ploughed up old grassland received a special payment to recoup him for his extra expenses without raising the price of crops to a level which would make the cultivation of this land remunerative and which would have afforded additional unearned profits in respect of land already under the plough. The scheme had the further advantage that it brought about an increase in fer-

tility even if the land were subsequently re-seeded to grass, while it was an important means of bringing about an extension of the ploughed area in the event of war.

The various measures for the assistance of British agriculture in the years following 1931 resulted in a considerable increase in the gross output of the industry. But it is significant that they had no effect in modifying the secular trend from tillage to livestock. Despite all the efforts to stimulate crop production, the arable area in the United Kingdom showed an almost uninterrupted decline. In 1927 it fell for the first time below 15 million acres; four years later it established a new low record by dropping to under 14 million acres. The loss of the next million acres took a few years longer, but in 1938 the agricultural returns revealed that the arable area had fallen below 13 million acres. The actual area ploughed declined also—it dropped below 10 million acres in 1928 and below 9 million acres in 1932. Thereafter there was some recovery for a few years, and it may be said that the ploughed area was fluctuating around the 9 million acre level for a few years before the war. But it was clear that the maximum effect of the State's intervention was to halt the decline in the ploughed area. The Wheat Act gave a great impetus to wheat cultivation and the area under this crop rose from 1,250 thousand acres in 1931 to 1,928 thousand acres in 1938. But the total area of corn crops was almost unchanged, for barley and oats both fell by substantial amounts.

CHAPTER V

WAR, 1939

THE extent of the encouragement which had been given to British agriculture in the years immediately preceding the outbreak of hostilities has been indicated in the preceding pages. Despite all that had been done to assist agriculture in the years before 1939, however, the war found us with a substantially smaller acreage under tillage than in 1914. Whereas the ploughed area of the present United Kingdom was 11,068,162 acres in 1914, it was only 8,813,135 acres in 1939. The principal reductions were in crops used for the feeding of livestock—barley, oats, turnips and mangolds. As a result of the stimulus afforded by the Wheat Act, 1932, the reduction in the area under wheat was less than in the case of other crops, although even here the reduction was 5·9 per cent. Other cereals had declined by 29·4 per cent., and the extent under root crops by 23·5 per cent. There had also been a reduction of 10·3 per cent. in the area under potatoes.

Despite the fall in the area devoted to crops for the feeding of animals, the numbers of all classes of livestock (other than horses) showed a substantial increase.

	1914	1939	<i>Percentage Increase</i>
Cattle	7,907,812	8,871,928	12·2
Cows and heifers	3,247,357	3,884,233	19·6
Sheep	24,651,717	26,887,422	9·1
Pigs	2,856,410	4,394,490	53·8
Poultry (1913*)	43,176,778	74,357,177	72·2

* 1914 figures not available.

The paradox of increased livestock numbers, but reduced livestock feed produced from our own soil, is easily explained. There was a large increase in imports of animal feedingstuffs and farmers had become more and more dependent upon feedingstuffs from abroad for the maintenance and fattening of the livestock of the country. Precise figures are not available owing to the exclusion of Southern Ireland from the United Kingdom in 1921, but some indication of the increased imports of feedingstuffs is afforded by the following figures :

<i>Imports</i>	1913	1924	1930	1938
	<i>Great Britain & Ireland</i>	<i>Great Britain and Northern Ireland</i>	<i>Ireland</i>	
	Tons	Tons	Tons	Tons
Maize.. ..	2,457,748	1,883,351	1,708,234	2,881,409
Cereal by-products	228,993	517,766	335,022	985,517
Oilseed cake & meal	406,700	372,600	454,807	663,428
Other feedingstuffs for animals	421,098	227,306	165,248	255,161
Total	3,514,539	3,001,023	2,663,311	4,785,515

Farmers had realized that it was cheaper to import feedingstuffs from overseas than to grow food for their livestock. Imports of feedingstuffs into Great Britain and Northern Ireland in 1938 were more than a third greater than imports into

the whole of the British Isles in 1913. This development had undoubtedly been good business in time of peace, but it meant that when war broke out not alone was there a somewhat smaller supply of wheat with which to feed a larger human population than in 1914 but also that there was a considerable reduction in the crops with which to feed a substantially larger livestock population. The agricultural problem at the outbreak of war in 1939 was therefore not simply one of how to increase the acreage of crops for human consumption but also how to maintain the livestock population of the country.

In 1914 there had not appeared to be any immediate war-time problem with regard to agriculture and as has already been seen conditions on the farm continued for almost two years virtually upon a peace-time basis. In 1939 the lessons of twenty-five years ago had not been forgotten and plans for the expansion of home agriculture as an integral part of the war effort had been formulated well in advance of the outbreak of hostilities. An increase of two million acres in the ploughed area of the United Kingdom was announced as the programme for 1940. This represented an increase of 22·7 per cent. and proportionately a greater increase than occurred during the whole of the last war when the increase in the ploughed area was 19·8 per cent. between 1914 and 1918. But despite the efforts of farmers in 1940 the ploughed area in that year was less than in 1914. It was decided that a further great effort was required and farmers were asked to bring another two million acres of land under crops

in 1941. If this programme is achieved it will involve the enormous task of increasing the ploughed area by 45 per cent. in two years, but even so we shall not attain the area under the plough in 1918.

The necessity for a reduction in livestock numbers was also faced at the outbreak of war. Here again the position was completely different from the last war when no real decline in livestock numbers occurred until 1917. But in 1939 not only had we 13·3 per cent. more livestock (expressed in stock units¹) than twenty-five years earlier but 2,472,932 acres less land devoted to crops for stock feeding. Shortage of feedingstuffs made itself felt right from the outbreak of war and within a few weeks farmers were being warned of the position. These warnings have continued with increasing emphasis as the war has progressed.

On November 22, 1939, an official announcement with regard to feedingstuffs and livestock policy contained the statement :

“ The necessary economies must be secured in the main by a reduction in the supplies of feedingstuffs available for the pig and poultry industries, which are particularly heavy users of imported grain and cereal products. Pig and poultry producers are accordingly advised to plan their production programme for the next twelve months on the basis that the proportion of their feedingstuffs derived from imports will be reduced by at least one-third as compared with the normal pre-war quantities.”

At about the same time it was indicated that in

¹ Cattle units : 7 sheep or 5 pigs = 1 cattle unit.

the view of the Government the animals which should receive first priority in regard to feeding-stuffs were dairy cows, since it was of first importance to maintain the milk supply. Thereafter preference should be given to fattening cattle and sheep, while pigs and poultry should come last in the order of priority. Six months later, on June 2, 1940, further emphasis was given to the precarious position in regard to pigs and poultry when Mr. R. S. Hudson, Minister of Agriculture and Fisheries, stated in a broadcast:—

“Supplies of feedingstuffs for them will be very limited indeed. . . . Pig and poultry farmers who are dependent on purchased feedingstuffs should begin to reduce their stocks. Do it gradually, but begin at once. You may have to cut them down to one-third of their present numbers by the middle of this autumn.”

On February 1, 1941, a rationing scheme for all farm animals was introduced in Great Britain and the normal amount of feedingstuffs grown on farms prior to the war was taken into account in assessing the ration. Ration coupons were issued for the three months February, March and April, and in the case of pigs and poultry coupons were issued for only one-third of the number of stock on farms at June 1, 1939. On March 6, a few weeks after rationing had commenced, it was announced in the House of Commons that the value of each coupon would be reduced by half from one cwt. to 56 lb. and that a further reduction of pigs and poultry, perhaps to one-sixth of the pre-war numbers, would

be necessary. In order to assist farmers in the disposal of their stocks the prices paid by the Ministry of Food for pigs were advanced early in March with an intimation of reductions at the end of April and the middle of June. The introduction of this regressive scale of prices was designed to encourage the rapid disposal of stocks.

There are certain paramount factors which must be always present in any consideration of food policy in war-time in relation to the respective contributions to be made by home agriculture and imports from overseas. First and foremost is the fact that crops capable of direct human consumption are the most economical form of feeding, whether considered in terms of value or of effort to produce. It is far more economic to feed grain direct to the human population than to feed grain to animals to produce meat or milk for human consumption. Animals are wasteful converters of feedingstuffs which are capable of direct human consumption. Even the bacon pig, which is probably the most economic of all forms of livestock as a converter of feedingstuffs into meat, requires, under favourable conditions, about seven or eight pounds of meal for every pound of edible meat produced. On the other hand, animals such as cattle and sheep derive a large quantity of their sustenance from grass—which has not been an article of human diet since the time of Nebuchadnezzar. Pigs and poultry also consume swill and scraps. In short, a certain number of livestock can be maintained on grass, hay, straw, roots and on waste

food. Two hundred years ago practically the whole of the livestock of the country were maintained in this way, and in the last resort some number of animals could always be kept in this fashion in the United Kingdom. But the number would represent a very great reduction on the present population not only on account of the relative shortage of feed if supplies from overseas were cut off altogether and the bulk of the home-grown grain at present fed to stock diverted for human use, but also because the age of maturity of animals kept under these conditions would substantially increase. Whereas pigs fed on a normal pre-war ration would reach bacon weights at six or seven months old, pigs fed on waste products may take nine or ten months to reach the same weight. The same applies in the case of cattle and dairy cows. In the eighteenth century the cattle kept in this country were perhaps six or seven years old at the time of slaughter. Before the war developments in early maturity resulted in large numbers of the best beef animals being killed at a little over two years old. The improvement in milk yields which took place in the forty years prior to 1914 has already been referred to. A great part of this improvement has occurred through the feeding of cows on concentrates so as to maintain milk production. Even prior to the present war the milk yield in Northern Ireland in those areas where the milk was sent to creameries for manufacture was only about 350 to 400 gallons per year—principally obtained during the summer grass period immediately after calv-

ing. Supplies in the worst winter months declined to a fourth or a fifth of the output at the height of the summer. On the other hand, in the liquid milk producing areas around Belfast where large quantities of concentrates were fed to dairy stock, the average annual yield was six or seven hundred gallons.

Farm fodders alone constitute an ill-balanced ration and the productivity of the livestock of the United Kingdom has been greatly increased by the use of concentrated feedingstuffs. If the use of concentrates had to be discontinued there would be a great reduction in the yields of meat and milk from our livestock, quite apart from the reduction in numbers which would become necessary. A reduction in the rate at which animals matured would further reduce the amount of meat obtained from the same total numbers of stock. It would also mean a change in the composition of the livestock population for there would be need for a smaller number of breeding animals as the longevity of fattening stock increased. On the other hand, in the case of cattle the reduction in the milk yield would necessitate the keeping of larger numbers of cows and in this case it would probably be impossible to adjust the number of fattening cattle to the required level by an adjustment in the breeding stock. Considerably larger numbers of calves would be born than could be maintained and would have to be slaughtered at or soon after birth.

A right decision with regard to livestock policy is probably the most difficult agricultural problem

for the country to face in time of war. It is, moreover, a decision which in the last resort can only be taken by the Government because the Government alone is in a position to assess the real seriousness of the import position in regard to food and feedingstuffs supplies. In any European war—probably in any major war—in which this country is involved under modern conditions, the problem of shipping space must loom large. It may be regarded as axiomatic therefore that a considerable increase in the ploughed area is the first essential in war-time so far as home agriculture is concerned. This is regardless of the question whether the additional area under tillage is devoted to crops such as wheat and potatoes for direct human consumption or to crops for feeding to livestock. It is simply because in general land under the plough yields a higher output of food per acre than pasture land, although the increased productivity of ploughed land compared with grazing land is much less than is often supposed. The net yield of starch equivalent per acre (including both grain and straw) is about $14\frac{1}{2}$ cwt. in the case of wheat, and about 13 cwt. in the case of oats. The figure for turnips is about 15 cwt. and for potatoes about 22 cwt. The yield from meadow grazing in England and Wales has been estimated at a little over 11 cwt. and the yield from permanent grass cut for hay is probably about the same. Better yields—perhaps up to what is obtained from oats or wheat—may be secured from rotation grass. It is apparent therefore that the increased yield of

starch equivalent obtained by ploughing up pasture land and sowing to cereal crops may be only of the order of one-sixth or one-seventh. If potatoes are grown the increase is much more substantial. But it is not merely the increase in the yield of starch equivalent which justifies a ploughing up policy in war-time. There is also the increased utility of ploughed land compared with pasture land. Grass provides food for animals alone and it is not always certain whether, as the war progresses, the animals will be available to eat the grass. Land under the plough may provide food for either man or beast. In some cases as with oats, barley and potatoes the crops produced are dual purpose crops which may be used for either men or animals. It follows, therefore, that a decision to increase the land under the plough and to grow more cereals, especially oats and barley, and more potatoes is one which cannot be wrong. It can be taken immediately upon the outbreak of war with the knowledge that in this way the production of food will, on the whole, be increased and also that the food produced from an increased area of ploughed land will be of greater general use.

The decision to plough up grass land does not therefore prejudice the livestock population. It may prove the means of maintaining the livestock of the country for if more home-grown feeding-stuffs are grown they will obviously replace imported supplies. But if war breaks out in the late summer as was the case in 1914 and 1939 there is the problem of maintaining the livestock for the

initial twelve months of the war until the results of the ploughing up programme of the first year of war can be harvested. The initial shortages of feeding-stuffs in the autumn of 1939 and the warnings to pig and poultry producers given at that time reveal the extent to which this problem arose. It may be assumed, therefore, that some part of the livestock population will always have to be sacrificed in the early months of war.

When the increased crop production of home agriculture becomes available a further problem arises. Are the crops grown required for direct human consumption or can they be utilized for feeding to stock? From the farmer's point of view there will always be attractions in feeding as much as possible of his home-grown crops to his stock, because the sacrifice of his livestock represents in large measure the sacrifice of his capital stock. Even if he is able to sell out at an attractive price the farmer will never view with equanimity the disappearance of his livestock from the land for the fertility of the soil is bound up in large degree with the maintenance of a substantial livestock population. In the last war the problem of persuading the farmer to sell off the farm the crops he produced arose in a relatively acute form in 1917 and 1918. There was a distinct tendency to use even wheat for stock feeding, despite the prohibition of its use in this way. It is evident that the same difficulties are arising in the present war for the use of wheat for feeding to livestock has already been prohibited. These difficulties will continue unless a definite

policy is adopted as to the products which it is desired to obtain off farms. Hitherto the policy which has been adopted by the Government has tended to encourage farmers to feed their crops to livestock. It is not so much a case of the relative level of prices of crops and livestock as the existence of an assured market for livestock and the absence of any such guarantee in the case of crops other than wheat and, to a lesser degree, potatoes. All cattle, sheep and pigs are purchased by the Ministry of Food at fixed prices, published well in advance, and graded according to quality. In the case of eggs, even prior to Government purchase, the maximum prices introduced were in fact standard prices, for the demand greatly exceeded the supply and no difficulty existed in regard to marketing. The case is very different with regard to crops. A fixed price exists for wheat and there is a market for all that is produced. In the case of potatoes minimum and maximum prices have been fixed and the Government has given assurances that they will take steps to deal with any surplus crop that exists at the end of the season. But farmers in many areas of the country have experienced difficulty in selling their potatoes and have seen them lying on the farm with no immediate market available. Even if they are bought up eventually the Government guarantee relates to the minimum price for the season and the whole cost of financing the crop throughout the winter rests on the shoulders of the farmer. In the case of oats and barley maximum prices have been

fixed without any assurance with regard to a market. In the autumn of 1940 these maximum prices were not always reached. As the season progressed supplies of oats and barley became practically unobtainable simply because they were reserved by farmers for feeding to their stock. The great bulk of the oats and barley (other than malting barley) produced in the United Kingdom is normally marketed through livestock, and only a small portion finds its way on to the market. These crops are grown for feeding to stock. If the livestock to which they are fed were to disappear and the crops were sold off farms in quantity, prices would slump at once. It is natural, therefore, that farmers should be anxious to maintain their flocks and herds upon which not alone does the fertility of their land in large measure depend, but through which a great part of their crop production is marketed.

The absence of official statistics of crops and livestock at the present time makes it impossible to follow the changes occasioned by the war in the structure of British agriculture. But there is no reason to doubt that a great part of the increased area which has been broken up by the plough since the war started has been devoted to crops which will be used for stock feeding and not for direct human consumption. Before the war some 80 per cent. of the agricultural output of the United Kingdom consisted of livestock and livestock products. The main activity of farmers was the breeding, fattening and maintenance of animals for the production of meat in all its forms, milk and eggs.

The raw material for this production—the feeding-stuffs with which the animals were fed—was partly grown at home, but to an increasing extent was imported from overseas. The war has resulted in a drastic reduction in the quantity of feedingstuffs that can be imported and has consequently provided a potent impetus to farmers to grow more food for their stock from their own land. In this respect agriculture is no different from any other industry—its interest is to maintain its supply of raw material. The linen trade which is dependent for its existence upon supplies of flax, formerly obtained from the Low Countries and the Baltic, is to-day striving with might and main to persuade farmers to grow flax. If cotton could be grown in this country there is little doubt that the industrialists of Lancashire would be as interested in the propagation of cotton cultivation as are the linen manufacturers of Ulster in the growing of flax. Similarly, it is natural that the farmers of this country—eighty per cent. of whose income derives from the production and sale of livestock and livestock products—should be concerned to safeguard the raw material for the maintenance of this great industry. The layman looking around the countryside and seeing crops being harvested thinks that he is viewing the production of the finished article for sale off the farm. The chances are four to one that the crops he sees will never leave the farm but will be fed to the cattle grazing in the next field. And it is probable that the home-grown cereal crops used on the farm will constitute only a third of the

concentrated food supplies which will be fed to the farmer's animals so as to enable him to sell fat cattle and sheep, fat pigs, poultry, milk and eggs at some later date. In short, prior to 1939 the term British agriculture was an essentially misleading one. A truer description would have been British livestock production for that, in fact, was what British agriculture meant.

It follows from what has been said that the real agricultural problem in war-time is not a decision to plough up land—that is merely an elementary safeguard—but what is to be done with the produce of the increased tillage area. This in turn will decide what crops shall be grown on the newly ploughed land. Is increased food to be grown for direct human consumption or for feeding to stock? If it is decided that the position is so serious that more food must be obtained off farms suitable for direct human consumption then it will follow as a natural corollary that a substantial part of the livestock population will have to be sacrificed. It is easy to see this problem in the case of pigs and poultry which are large users of imported cereals. The position is less easy to appreciate in the case of other livestock. The crux of the whole problem lies in the question: What do we want the farmer to sell off his farm? Milk, fat cattle and pigs, eggs and poultry as he sells in peace-time—or wheat, oats, potatoes, vegetables?

The answer partly depends on strategic considerations, partly on nutritional ones. If an ample supply of bread, oatmeal, potatoes and vegetables,

and milk is available then the population will not starve. This dietary can be supplied from our own soils with the exception of bread. We are self-supporting for oatmeal and with adequate milling facilities the supply could be greatly increased. Potatoes have been imported in quite small quantities for many years, chiefly early varieties from Spain and the Channel Islands. A big expansion in production can readily be obtained. Although in the past there have been large imports of vegetables these are no longer obtainable and a considerable increase in home production is well within the bounds of practicability even if supplies of seed have to be obtained abroad. Paradoxically it is more difficult to increase the supply of liquid milk in war-time, despite the fact that in peace we were completely self-supporting. But dairy cakes and meals cannot be readily replaced by home-grown cereals, and individual yields of milk per cow will certainly fall owing to feeding difficulties. Moreover, an increase in the production of milk through an increase in the dairy herd means an increase in the production of calves at a time when the maintenance of the cattle population may be a matter of the greatest difficulty. As for bread, there can be no possibility of obtaining the necessary quantities of wheat from our own soil but wheat is probably the easiest of all food imports to obtain. It is economical in shipping space and can also be obtained from relatively nearby sources such as North America, while the problem of dollar exchange has been solved by the Lease and Lend

Bill recently passed into law in the United States.

But a decision to go all out for the maximum production of oatmeal and potatoes, milk and vegetables cannot be taken regardless of its effects upon home agriculture. And it is a decision that can be taken once only. It has been said that oats and potatoes are dual purpose crops suitable for man and beast. But once a decision has been taken that they are required for human use it cannot be reversed because it means the slaughter of the livestock to which they would otherwise have been fed. It is neither equitable nor practical politics to say to farmers: Grow all the oats and barley you can; if our position is desperate in the middle of next winter we will ask you to sell them off the farm in order to make oatmeal or to provide an admixture of barley meal in flour, but if we don't want them you will be allowed to feed these crops to your livestock. If it is decided as a matter of war-time policy that the national interest demands the maximum production of certain crops on farms *and the maximum sale of these crops off farms* then a food production policy for home agriculture can readily be evolved. It will rest upon two main foundations: (1) a guaranteed market at a remunerative price for all wheat, oats, barley, potatoes and vegetables produced, and (2) appropriate arrangements for the disposal of livestock off farms.

It will be essential to replace the present system of maximum prices for crop products (other than wheat) by an arrangement under which the farmer is assured of a firm market for all the crop produce

he is able to grow, just as he has for his cattle, sheep and pigs. This market must be guaranteed for the duration of the war and for a period thereafter sufficiently long to enable the reconstruction of British agriculture on its normal basis of livestock production to take place. There must be no doubt with regard to this matter. Once the industry is asked to turn over to a type of production based on the sale of crops off farms there can be no going back until the war has ended for there must set in a steady reduction of all classes of livestock. Consequently an active policy will be necessary to reduce livestock numbers with the exception of milch cows which it will be necessary to increase. This can probably best be brought about by the announcement of a regressive scale of prices so that farmers will be induced to dispose of their stock at as early a date as possible.

From the standpoint of national security there are obvious advantages from such a policy. In time of peace it was the case that home agriculture had in large measure concentrated upon the production of the more expensive items of diet—quality beef and mutton, milk, eggs. The staple items of cereal food were imported from overseas, where they could be produced more cheaply. In time of war an exact reversal of this position is required. The object should be to produce at home as much as possible of the basic items of dietary—the food which will ensure that at all events we shall not starve. Then if shipping is available we can import the luxury foods from overseas—the meat and

bacon and eggs which we have grown accustomed to consume with our high standard of living, but which are not essential for health and work. It is not suggested that we shall become self-supporting even for the bare necessities of our food supply, but there is no question but that our soil could maintain a far greater proportion of the population if we concentrated on a simpler dietary. Sir Thomas Middleton estimates that in the decade 1831-40, when the average population of the United Kingdom was 25,714,000, only about 1,400,000 people were maintained by imports from overseas and that over 24,000,000 were fed upon the produce of our own soil. The average annual imports of foodstuffs during this period were 566,720 metric tons, but this figure included 196,909 tons of raw sugar. The standard of food consumption in the thirties of last century was very different from what it was in the past decade, but the people were fed. Statistical data regarding the position of British agriculture in that period is not available, but there is little doubt that a far larger quantity of the produce of the soil was used for direct human food than was the case before the present war. It is by developments along the same lines that the maximum safety to the food supply of the country in the present struggle can be secured.

CHAPTER VI

THE FUTURE

BRITISH agriculture has already experienced great and radical changes as a result of the war. The ploughed area has been increased by something of the order of 4,000,000 acres to about 45 per cent. above the pre-war level. Pigs and poultry are being reduced to a third of their pre-war numbers. Cattle, too, may have to be sacrificed. It is becoming daily apparent that before victory is won even greater changes may be imposed upon the industry. The changes that have already occurred and those that can be foreseen, however, cannot be regarded as other than artificial departures from the normal course of agricultural development in the United Kingdom, for there is no reason to believe that the outcome of the present war will modify the broad secular trend of progress in British agriculture during the three-quarters of a century prior to September 3, 1939. The reverse is the case. In the absence of a deliberate Government policy to shelter agriculture from the operation of normal economic forces we may anticipate a rapid return to the conditions which prevailed in the third and fourth decades of this century.

Any attempt at a detailed forecast of world con-

ditions after the war is impossible, but there are certain broad conclusions which it is legitimate to draw not only on the analogy of the years that followed 1918, but also in the light of what knowledge is available of conditions inside Europe and in the rest of the world. Few will dispute the impoverishment of large areas of Europe which is daily occurring and which will continue so long as the war lasts. In so far as knowledge is available regarding conditions in enemy occupied or controlled countries some shortage of food supplies has already developed—a shortage which is at present partial and local and accentuated by transport difficulties, but which will certainly become aggravated before the war ends.

During the first German war the area under the principal European crops declined. On that occasion a large area of Europe was a battlefield and the normal progress of husbandry was impossible. Although in 1939-41 actual war devastation has played a smaller part in the reduction of agricultural production than was the case in 1914-18, there have been other factors at work little less potent. The winter of 1939-40 was unusually severe on the continent and there was a late spring. The mobilization of millions of men, largely drawn from the peasant class, shortage of horses owing to military requirements, shortage of petrol for tractors due to the same cause, and difficulties in obtaining fertilizer supplies due to outside blockade and internal transport disorganization, have all combined to affect adversely the level of crop production. But

the main effect of war upon European agricultural production is in connection with livestock. Continental Europe is very nearly self-supporting so far as the production of cereal grains and potatoes is concerned. Net imports of wheat into continental Europe before the present war were about 8 per cent. of total consumption, while in the case of rye—and it must be remembered that the consumption of rye in pre-war Europe was half that of wheat—the amount of imported supplies was negligible. Continental Europe was completely self-supporting in potatoes. In so far as agricultural output can be expanded, it will clearly be the policy of all countries in Europe to see an increase in the production of cereal grains, and there is little doubt that a relatively small increase in the area devoted to wheat would be sufficient to make Europe self-supporting. While this is the case with food grains and potatoes for human consumption, the position is very different in regard to feedingstuffs for animals. 17 per cent. of the normal pre-war European consumption of maize was imported and 90 per cent. of the consumption of animal concentrates. The prospect of increasing supplies of animal feed under present-day conditions in Europe is extremely remote, and a heavy reduction in livestock numbers must be expected to take place. This is especially the case in countries such as Denmark, Holland and Belgium, which were very largely dependent upon imported supplies of feedingstuffs for their livestock populations. Already there is reason to believe that large numbers of livestock

have been slaughtered in these countries and in other parts of Europe dependent on imported feedingstuffs. *The Economist* of February 22, 1941, remarked: "Germany has been steadily stripping these countries of their current food supplies and of their reserves. In most of them at least a year's stocks had been laid by which, with the harvests of 1940, would, in spite of the damage of war, have kept them going until next summer. But they have been plundered to feed the invaders. Norway has lost her fish supplies, Danish livestock has been slaughtered, 17 million lb. of butter left Holland in one week."

The forced slaughter of cattle and pigs in occupied areas has provided Germany with a valuable supply of meat for a period, for animals "on the hoof" constitute one of the most important food reserves in every belligerent country. But, like all reserves, it can only be used once, and we have already seen that the sacrifice of livestock numbers in order to augment the normal meat supply entails the most serious repercussions upon the whole structure of agriculture. The position differs entirely from the disposal of accumulated stocks of wheat and other cereals. There is no doubt that Germany had accumulated such stocks before the war, but they were analogous to the stock of honey with which the bee community enters the winter. The reserve of animals on the hoof, however, is like the camel's hump. When a country is forced to consume this reserve it is feeding on itself and is undermining the future pro-

ductive capacity of its agriculture, for the sacrifice of the livestock population affects not simply the future production of meat, milk and eggs, but ultimately the level of crop production also through the disappearance of the most important of all sources of fertilizer. There need be little surprise that it is the livestock of the occupied areas which has been selected by the Nazis for forced slaughter. But even in Germany itself it is known that milk production has been reduced as a consequence of the loss of supplies of imported seeds and cake.

Even during 1914-18, when neither Holland nor Denmark were subject to the British blockade, both countries suffered a substantial reduction in the number of pigs they were able to maintain :

			<i>Denmark.</i>	<i>Holland.</i>
1913	...	...		1,350,204
1914	...	...	2,496,706	
1918	...	...	620,880	600,133

The history of the livestock population in Germany itself during the first German war is summarized below :

	<i>Cattle.</i>	<i>Sheep.</i>	<i>Pigs.</i>
1914	21,828,723	5,471,468	25,341,272
1918	18,579,244	5,996,721	10,911,477

The very great reduction of practically 60 per cent. in the pig population is at once apparent. In the case of cattle the fall in numbers was less great—a little under 15 per cent.—but the decline in the production of meat was far greater than the figures suggest. By the end of the last war the

cattle population of Germany consisted largely of a collection of skin and bone. Animals were being maintained for which there was insufficient food and which it was impossible to fatten. The example of Germany in the last war has indeed become a classic example of the folly of maintaining in war-time a larger population of livestock than can be properly fed. It is unlikely that the same error will be made again in the third Reich.

The conclusion is clear. It may be safely hypothecated that during the present period of hostilities a general reduction in livestock numbers will take place in Europe. On the other hand, efforts will be made to maintain the area under crops, especially in the case of crops for human consumption.

It is, however, not merely the position in Europe which must be considered. The shadow of the overseas countries must be ever present in any appraisal of the probable post-war trends in British agriculture. In 1914-18 there was an enormous increase in the area and production of cereals in North America which had profound repercussions on British agriculture after the war. The following figures show the percentage increase in area and production of certain crops in North America between 1909-13 and 1919-21.

				<i>Area.</i>	<i>Production.</i>
Wheat	...	...	...	+ 49·8	+ 26·5
Rye	...	...	...	+150	+113·8
Barley	...	...	...	+ 37·2	+ ·2
Oats	...	...	...	+ 24·7	+ 14·7
Maize	...	...	...	- 4·7	+ 11·6

The new wheat lands of Canada were called in to offset the loss of production in the war-devastated areas of the old world and to replace the substantial portion of the wheat supplies of the United Kingdom which, prior to 1914, were obtained from Southern Russia. The area devoted to wheat production in Canada increased from 4,457,550 hectares in 1913 to 7,739,897 hectares in 1919, while the acreage devoted to this crop in the United States increased from 20,308,963 hectares to 30,632,605 hectares in the same period. The expansion of production in the United States was rapidly reduced after the last war and had fallen to 21,937,840 hectares in 1924, but the case was different with Canada, where the area under wheat continued, on the whole, to increase after 1919.

It is too soon to assert with confidence the course of crop production in North America during the present struggle. The area under wheat in Canada, however, rose from 26,736,000 acres in 1939 to 28,726,000 acres in 1940, and in the latter year production amounted to 561,104,000 bushels compared with an average of 247,821,000 in 1933-37. The position to-day is that large accumulated stocks of wheat exist in Canada, stocks which may amount to about 575,000,000 bushels at the end of the present crop year on July 31, 1941. The position is such indeed that the question of the restriction of Canadian wheat production in 1941 has been engaging the attention of the Government.

In the United States there was a small increase in the acreage under wheat in 1940 compared with

1939, and there was an extremely good yield. Stocks of wheat at October 1, 1940, were placed at 548 million bushels and showed an increase of 50 million bushels over the previous year. It is estimated that the carry-over at July 1, 1941, may exceed 390 million bushels—an increase of 106 million bushels over 1940. If this estimate is realized it will be the largest carry-over on Government record. Prospects for the next crop are stated to be extremely good, and the supply for 1941-42, including surpluses, may be 1,300 million bushels—an increase of 200 million bushels over the supply for 1940-41.

Enough has been said to indicate that even though masked by the influence of war there are factors at work which will result in a position arising at the end of hostilities when once again it will be a matter of difficulty for British agriculture to maintain itself on a crop basis in the absence of heavy and substantial assistance from the State. At the moment the production of wheat in this country is and must be of paramount importance, not because of any shortage of overseas wheat supplies to which Britain has access, but on account of a shortage of shipping space. The position is broadly identical with 1914-18, when shipping shortage and high freight charges made wheat production economical. The ocean freight rate on wheat and maize from Northern Atlantic ports to the United Kingdom rose from an average of 1s. 10d. per 480 lbs. in the six months January to June, 1914, to an average of 46s. per 480 lbs. in

1918, having stood at 50s. for a prolonged period in that year. By the last week of 1918 the rate had fallen to 11s. 9d. and was 8s. 6d. a year later, 7s. 3d. at the end of 1920 and 3s. 9d. in the last week of December, 1921.

In comparison with the rise in the costs of transporting wheat from North America to Great Britain the percentage increase in the price of the crop in the country of production was relatively slight.

The maximum increase in wheat prices in North America was to about two and a half times the 1913 level, as compared with a twenty-seven or twenty-eight fold increase in freight charges. In 1914 the Atlantic freight charge was about $7\frac{1}{2}$ per cent. of the cost of the wheat in North America; in 1918 it had risen to practically 65 per cent. of the cost of the product.

A great part of the increase in the North American wheat price in the period 1913-20 was due to monetary causes. The index number of wholesale prices of all commodities in the United States rose in 1920 to 126 per cent. above the 1910-14 average. During the present war, however, wheat prices have shown a tendency to fall, although there has been a slight rise in the wholesale prices index in the United States from 110 in August, 1939, to 117 in December, 1940. The average price of wheat in the United States in December, 1940, was 71·5 cents per bushel as against 82·4 cents a year earlier and an average price of 88·4 cents per bushel in the years 1910-14. The surplus wheat production in North America and the limitation on exports to

Europe has succeeded in preventing any upward movement in prices. In the United Kingdom, on the other hand, the *Gazette* average price for wheat was 14s. 8d. per cwt. in the week ending February 15, 1941, compared with an average of 7s. 9d. per cwt. in the years 1909-13. Whereas prices in the United Kingdom are nearly 90 per cent. above the 1909-13 average, in the United States they are nearly 20 per cent. below the prices ruling before the last war. In fact, the present price of wheat in the United Kingdom may be said to be double the economic price which would prevail under peace conditions if overseas wheat supplies were admitted freely into this country. Before the war this country benefited from the free importation of wheat, while the farmers who produced wheat were protected by a guaranteed price under the Wheat Act of 1932. The guaranteed price was 10s. per cwt., which has now been raised to 14s. 6d. per cwt. Before the war the amount of wheat qualifying for subsidy payments at the full rate was limited to 36,000,000 cwt. To-day there is, of course, no limit to the quantity purchased by the Ministry of Food at the guaranteed price.

Under war-time conditions every acre of wheat grown at home is a source of strength, since it sets shipping free for the importation of other goods. There is and can be no real question of counting the cost. But what will be the position when peace is restored? In 1918 some 2,449,000 tons of wheat were produced in the present United Kingdom. It is unknown to what extent wheat production will

be expanded this year, but if it is assumed, as it is fair to do, that present prices, and other steps taken by the Government, will secure a production of wheat equal to the 1918 level, then it may be calculated that a subsidy of £17 $\frac{3}{4}$ million would be involved under peace-time conditions in order to maintain this acreage. It may be argued that wheat prices in North America will rise when hostilities cease—that they are at present depressed because exports to the belligerent countries are impossible. But there was no rush to buy wheat on the part of European countries after 1918. It must be remembered that before the war continental Europe was almost self-supporting so far as wheat is concerned, and has probably become completely self-supporting by now. Meanwhile, growing surpluses are accumulating in the granaries of North America. Cereal production in the United Kingdom after the war will have to face the full flood of large imports from overseas, unless protective measures are adopted. To maintain production on a war footing will mean for wheat alone a subsidy of the order of £15 to £20 million per annum, or alternatively a high tariff on all imports of wheat and flour.

It must be concluded, therefore, that after making every allowance for the difficulty of forecasting the position that will exist when hostilities cease, there is no present reason for planning for post-war agricultural reconstruction otherwise than on the basis of the following assumptions :

1. There will be a surplus of bread grain crops

available throughout the world due (a) to the extension of wheat and rye production in Europe under the stimulus of war conditions, and (b) to the supplies from the great corn-producing countries overseas becoming once more freely available.

2. The supply of livestock and livestock products will be drastically reduced and will not be readily capable of expansion from either European or overseas sources.

In such circumstances can there be any doubt that the safest policy for British agriculture is to aim at reverting to the pre-war policy of livestock and livestock products at the earliest opportunity?

It may be argued against these conclusions: (1) That in the interests of national safety it is essential to maintain a large area under bread grain crops in this country, and (2) that the development of a livestock industry dependent upon imported feedingstuffs was unhealthy and prejudicial to the best interest of home agriculture. Let us examine each of these contentions.

More than a century and a half ago Adam Smith declared "Defence cometh before opulence." There will be none to-day to cavil at his dictum. If defence demands the growing of an extra 4 or 10 million acres of crops in the United Kingdom, then let there be no argument about the matter. But it is essential to avoid thinking in terms of war economy or war mentality. To-day it is a fact that every extra acre under the plough is a material

addition to our defence, just as is every additional man under arms. But the aim of an additional 4 million acres under the plough is as much a war aim as that of an additional 4 million men under arms. If at the end of hostilities defence demands that we should maintain a standing army of millions of men, then equally will defence demand additional millions of acres under the plough and additional millions of tanks, rifles and guns from our factories. In that case the end of hostilities will have won not peace but an uneasy respite before a third European war to mar the history of the twentieth century. It is not proposed to discuss the possibilities of a recurrence of war in the future or the extent to which it will be desirable to rebuild British agriculture on the assumption that it will again be called upon to feed the people of these Islands under war conditions, but it is well to remember that there is no special problem of war preparedness for agriculture other than that of war preparedness for the nation as a whole. Agriculture is a long-term industry—but so is the construction of battleships and the equipment and training of a large army. If this country needs to dissipate economic effort in the latter directions after the present war, then it will be necessary to consider agriculture from the same standpoint of war preparedness. But even in the event of such a possibility, it would still be the right policy for British agriculture after this war to revert as rapidly as possible to increased livestock production.

In the first place it is well to remember that even

from the point of view of war preparedness a livestock policy is far from being the least effective. A large number of livestock on the hoof represents one of the most important reservoirs of food supply, not only in respect of meat but also of fats—and in war shortage of fats is always apt to become acute. It is possible to build up and maintain a large reservoir of grain both for human consumption and for animal feeding, whereas a similar policy of storage in regard to meat is far less easy, if not impossible. Moreover, expansion of crop production can take place after hostilities, whereas it will always be impossible to expand livestock production after hostilities have broken out. It is well to remember that imports of meat require more shipping space per unit of calories than imports of wheat and, moreover, demand special refrigerated shipping. We cannot expect to survive any European war without imports, and as between imports of meat and imports of wheat, the latter are easier to obtain. They make lesser demands on shipping in volume and, what is equally important, in distance, for our main supplies of wheat are from North America, whereas our imports of meat come from more remote countries—the Argentine, South Africa, Australia and New Zealand.

It may be urged that agriculture cannot be expected to expand arable production rapidly in time of war if the use of the plough is allowed to decline in peace time. The answer is that it has been done twice and under conditions when compulsory service has made heavy calls on man power. The

problem of labour arises acutely wherever an increase in the ploughed area is necessary, but in war time it is not simply a problem of recruiting labour, but of preventing skilled farm workers being absorbed into military service. It is little use subsidizing the plough in peace time if the ploughman is called to shoulder arms when hostilities break out.

Moreover, although war always emphasizes the importance of the plough, it must be remembered that a well-stocked pasture land in time of peace will have maintained the fertility of our soil if the time again comes for it to be ploughed for victory.

In the second place, financial consideration cannot be ignored. In time of war finance is no longer considered as a limiting factor, but on the restoration of peace a nation burdened by the heavy financial commitments that have had to be incurred during its fight for life is apt to start counting the pennies. It is well, therefore, to remember the financial considerations which would be involved by a policy of maintaining the production of crops in the United Kingdom upon anything like the level attained in time of war. In the case of wheat it has already been shown that a cost of £15 to £20 million would be involved. If other crops were also subsidized, this figure would, of course, be greatly increased. It was the prospective financial burden of the guarantees given under the Corn Production Act which led to the reversal of that measure in 1921 and the introduction of the *laissez faire* policy that was pursued in regard to agricul-

ture during the ensuing decade. There will be important financial questions to be faced in regard to post-war British agriculture, but it is well to dissociate these from the question of defence as soon as possible, for the interests of defence and those of the economic welfare of the agricultural industry will not always run along the same lines.

When agriculture is considered from the standpoint of defence the first thought which arises is generally in regard to the maintenance of the wheat area. The dependence of the United Kingdom upon overseas supplies of grain, and the difficulty of maintaining imports in time of war, suggests at a superficial glance that agriculture can best serve the interests of defence by growing the maximum possible acreage under wheat. This, however, is to ignore the fact that there is probably no agricultural commodity which is better adapted for storage than wheat. If steps are again necessary to safeguard the wheat supply of the country in view of the possibility of war, then this can be best achieved by a storage programme. If adequate supplies of wheat are available in store at the outbreak of war they can be used as a reserve pending the expansion of production at home after hostilities have started. This is not to deny that on purely agricultural grounds it may be desirable to offer a guaranteed price for a certain immediate production of wheat, as was done under the Wheat Act of 1932, but this is a matter distinct from considerations of defence. If considerations of national safety demand a reserve of wheat, the solution is to

be found in a policy of national granaries and wheat storage rather than in a large area devoted to the cultivation of this crop.

There remains the argument that a heavy concentration upon the production of livestock and livestock products results in an ill-balanced industry, especially if that livestock production is dependent upon large supplies of imported feeding-stuffs.

It is perhaps natural when a large part of the livestock of the country has to be sacrificed on account of shortage of food, to assume that the pre-war system under which we had to import the feed supplies of a large part of the animal population of the country was unsound. But is there any reason why it is more unsound to import feeding-stuffs for the animal population than food for the human population? A great part of the imports of animal feedingstuffs could not be grown at home. Oilseeds and cake for dairy cows and fattening bullocks had to be obtained from overseas. It was purely an industrial question whether the oilseed was crushed in London and Liverpool or in Rangoon or Alexandria—the raw material derived from overseas. As for the imported maize and oats—just as wheat for the population of our cities could be grown more cheaply on the prairie lands of Canada and the Middle West, so could feed for our pigs and poultry be obtained more cheaply from the virgin soils of the New World. The livestock feeders of Britain and Ireland could buy imported grains for their stock more cheaply than they could

grow them at home. Before the war there was a sharp division of interest between different classes of farmers in regard to a crop such as oats. Farmers engaged in the growing of oats for sale were anxious to see a tariff imposed on imported oats—livestock feeders were anxious to maintain every cheap supply of animal feed that was open to them.

The idea of the farm as a completely self-supporting unit dies hard. There is an historic conception of the manor as an economic unit on which was grown the food for man and beast; likewise there is a tendency to regard the rotation of crops and the division of land as between grass and arable not as a question of management made necessary by the physical properties of the soil, but as a reflection of the economic division of agriculture between husbandry and stock management. Grass provides food for beasts, arable land food for man plus some feed for animals. Such was broadly the case a century and more ago. Transport was slow and inconvenient. The farm had to support its population and provide surplus wheat for the towns, but also it had to support its livestock. Where the latter was not possible, then the livestock were moved to where feed was available. The "transhumation" is the basic conception of livestock management. The herds were brought to where feed was obtainable—not feed to the animals. The same system still prevails in the movement of store cattle from rearing farms to holdings upon which fattening is possible, the wintering of hill sheep on lowland holdings where turnips have been

grown in quantity, even the sale of store pigs from the small farmer to the capitalist feeder.

For many years there has been clearly recognized a division of function in livestock production. Rearing livestock has been in greater or lesser degree the speciality of the small man—fattening has been to a great extent concentrated on the large farms. Each class of farmer was recognized to have special advantages for the job he undertook. The personal care and attention given by the smallholder and his family to cows calving and sows farrowing placed them at an advantage over the large farmer who had to leave these matters to hired employees. The larger farmer, however, could grow feedingstuffs more economically than his smaller neighbour. There is nothing revolutionary, therefore, in the fattening of animals on farms on which they have not been reared. The feeding of pigs and poultry on feedingstuffs obtained from overseas is but an extension of the same principle of division of function. It has benefited the smallholder at the expense of the large arable farmer.

In Northern Ireland in 1938-39 some 833,000 pigs were sold off farms compared with 293,000 in 1932-33. Some 103,000 fat cattle were certified for subsidy in 1938-39 compared with 76,000 four years earlier. The stability in pig prices afforded by the marketing scheme and the regulation of imports resulted in a great expansion of pig production, while the cattle subsidy encouraged the fattening of stock. Meanwhile the tilled area declined from 495,000 acres in 1934 to 471,000 in 1939, but net

imports of maize increased from 394,000 tons in 1934 to 458,000 tons in 1937. Retained imports of other feedingstuffs rose from 74,000 tons to 195,000 tons in the same period. The profitability of farming undoubtedly increased. The average gross profit per acre on a sample number of farms for which accounts were kept by the Ministry of Agriculture increased from £1 9s. 1d. per acre in 1934-35 to £5 2s. 6d. per acre in 1938-39. The whole of this development, however, was only possible because supplies of feedingstuffs from overseas were freely available.

The first essential in approaching the problem of agricultural reconstruction after the war is, therefore, a recognition of the fundamental importance of reverting to the pre-war policy of live-stock production at the very earliest opportunity. It is only too apparent that when the war ends a very great change will have occurred in the character of our agricultural production compared with 1939. An additional four or more million acres will be under the plough and the desire will undoubtedly be present in many quarters to retain under crops at least some part of this increased acreage which has been secured during the war. Let us be warned by the experience of the last war, however, and avoid at all costs any attempt to maintain British agriculture on an unnatural basis of development for a day longer than is necessary. We shall probably emerge from the war with three-quarters of our pigs and poultry sacrificed and some at least of our cattle and sheep. Let our aim be to

concentrate upon the rebuilding of our livestock population and do not let us worry over the inevitable decline in the ploughed area which will take place. If for any reason we allow ourselves to be mesmerized by the mirage of a large arable area we shall miss the golden road to livestock recovery. Any measure which results in prolonging the modifications in our farming system which have been occasioned by the war will prove a stumbling block in the task which will confront us the day the Armistice is signed.

It is for this reason that some parts of the Government statement on agricultural policy made by Mr. R. S. Hudson on November 26, 1940, must be viewed with misgiving. The declaration that the Government, "representative as it is of all major political parties, recognizes the importance of maintaining after the war a healthy and well-balanced agriculture as an essential and permanent feature of national policy," will command universal approval. But the decision "to guarantee that the present system of fixed prices and an assured market will be maintained for the duration and for at least one year thereafter" can hardly be welcomed without qualification. The present structure of prices is deliberately designed to encourage certain forms of agricultural production and to discourage others. In particular, prices have been designed to stimulate the growing of wheat and potatoes and the production of milk and to reduce pig and poultry production. A continuation of this price policy for twelve months after the

war can only delay the inevitable adjustment to a peace-time economy. There are, moreover, a large number of questions which arise in regard to the interpretation of the statement. If peace came in May or June the crops already sown would be guaranteed a market and a price, but not the crops sown that autumn or the following spring. If peace came in the autumn the crops sown the following spring would be covered by the guarantee if they were harvested and sold within a year of the cessation of hostilities, but not otherwise. It can hardly be contemplated that this would be allowed to happen and that crops harvested in the summer and not sold until after, perhaps, November would be left to be disposed of on the open market simply because 365 days had elapsed since the Armistice had been signed. So far as crops are concerned, it would appear inevitable that regard should be had to the crop year. The difficulties and dissatisfaction which were experienced in the winter of 1918-19 over the acquisition of the 1918 potato crop by the Food Controller at a time when there was little demand for the crop is a reminder, however, that the implementing of Government guarantees after war conditions have ceased may be a matter of difficulty. Farmers will be well advised to remember that guarantees given in time of war may be interpreted literally, rather than in a spirit of generosity, when the economic consequences of war have to be faced when victory is won. It is, therefore, important to secure as great an element of precision as is possible as to the intentions of

the Government regarding post-war agricultural policy.

Even more serious considerations arise in regard to the interpretation of the guarantee in its relation to livestock and livestock products. Are pigs and poultry, and even beef cattle and sheep, to remain depressed in price relative to crops for a period of twelve months after the war ends? The considerations which have led to efforts being made to discourage certain forms of agricultural production in war-time will have disappeared and our main concern should be to increase the production of these products as rapidly as possible. Mr. Hudson has declared that prices will be subject to adjustment to the extent of any substantial changes in the cost of production. But in agriculture cost of production depends upon the quantity produced. If pig production is restricted, then it is normally the least efficient producers who go out of production first. We talk of a reduction of pig and poultry numbers to a third of the pre-war level, but this does not mean a uniform reduction on all farms. Some farmers have gone out of production altogether and more will follow the same course. Other farmers have maintained their numbers fairly well. Since pig prices have been depressed in relation to other farm products, it is clear that the farmers who remain in pig production are those who are most efficient in this line of production and who carry on at what is an unattractive price to their fellows. When peace comes our policy should be to rebuild our pig population as rapidly as possible—to do so pig

prices should be made more attractive. But there is no assurance that the Government will be prepared to increase substantially the price of pigs, poultry and other livestock during the twelve months after the war and to which the guarantee relates. Yet it is a policy on these lines which will be required in the true interests of British agriculture. It will be meaningless—nay, positively harmful—to postpone by deliberate Government action, under the guise of assisting the industry, these adjustments which should be effected immediately the war ends. It cannot be over-emphasized, in fact, that the maintenance for a period of twelve months after the Armistice of the *status quo* in agriculture which exists at that date is no satisfactory approach to the problem of agricultural reconstruction. There is no virtue *per se* in guaranteeing prices for crops on a war level for a year after hostilities. Whenever the war ends farmers will either have completed, or be in process of making, their plans for the following year's crops. It is impossible to close down crop production the day the last shot is fired or bomb dropped. The expenses of the first harvest after the war will have been incurred under war conditions and in fulfilment of a war programme. It is mere common justice that the farmer should be recouped for his efforts by a guaranteed market for his crops harvested in the first year after the war. But if crop prices are such, relative to other products, that they will encourage farmers to concentrate on crop production rather than reverting to livestock, then positive

harm is being done. It will be impossible to contemplate making crop production less attractive during the first twelve months of peace. Livestock production must be made more attractive and confidence given to farmers to rebuild their flocks and herds as rapidly as possible.

It appears, therefore, that any policy designed to maintain the structure of agriculture which is brought about by the war must be avoided. We must recognize that war has distorted agriculture just as much as other industries, and that any attempt to stereotype the system of farming in this country induced by the war will be a profound mistake. Agricultural leadership must be directed to the task of bringing about an orderly adjustment to a peace-time industry in which livestock and livestock products again occupy the predominant place. While, therefore, all farmers will welcome the principle of an assured market and fixed prices for at least a year after the war, let us be clear that the price policy of that period does not impede the necessary adjustments that will be required. Guarantees for the year after the war are apt to be regarded as designed to afford a breathing space to enable the Government and the industry to look around and consider the steps necessary for the future—this is a profound mistake. No good will have been achieved if we simply continue on a war footing for a year after victory is won and then face the adjustment to a peace-time basis a year too late. The organization of agriculture on a peace-time basis and its future relations with the State should

be decided before the war ends and every measure adopted after the Armistice should be aimed at establishing the industry on a prosperous peacetime basis as rapidly as possible.

The problem of agricultural reconstruction after the war involves two decisions of major importance. First of all, to what level are we prepared to see the ploughed area of the United Kingdom reduced, for reduced it will be? Secondly, by what means can we stimulate livestock production? In considering these problems it is well to ignore the body of agricultural legislation, whether relating to tariffs, schemes or subsidies, which existed before the war. Many of the measures adopted between 1931 and 1939 were instituted with one eye upon the well-being of the home farmer and another upon the growing swarm of armaments being accumulated in Nazi Germany. If we are to build for a post-war era in agriculture, we can best start from the foundations, for the ground has been cleared by the war.

In the years before 1939 it may be said that there was no policy deliberately designed to maintain land under the plough. There was encouragement for certain individual crops, particularly wheat, under the Act of 1932, and later for oats and barley, although upon a much less generous basis than in the case of the former. But although the area under wheat increased by 50 per cent. between 1931 and 1938, this was secured at the expense of other crops, for there was no increase in the ploughed area. The reasons for this policy of maintaining wheat

cultivation have already been referred to. But in the post-war era, and with the nightmare of impending war removed, is there any reason why encouragement should be given to the maintenance of individual crops? What we should seek to maintain is the area ploughed, leaving it to the farmer to decide the type of crop production which is best suited to his farm and to his requirements. Any assistance given to arable cultivation after the war should, therefore, be given in respect of the ploughed area rather than in favour of any individual crop. Before the war the ploughed area had fallen below the 9 million acres and had been below the 10 million mark since 1928. Yet there is little doubt that agricultural prosperity was increasing in these years. The natural expansion of the industry was, however, in the direction of livestock, and it was clear that a prosperous agriculture in the United Kingdom was possible even with a smaller area of land under the plough than had been known previously. At the same time it must be recognized that a moderately substantial area under the plough is an essential basis for the prosperity of the industry. Any decline in the area below the pre-war level would, in the first place, involve a reduction in the amount of employment afforded, and it is safe to assume that in the post-war era it will be important to maintain as large a volume of employment on the land as possible. In the second place, the successful management of grass land and of livestock production requires the periodic use of the plough. The quality of a

great part of the pasture land of the country can be improved by its periodic breaking up. Fertility is restored and animal health safeguarded, especially if heavy stocking of pasture exists. We must, however, fairly face the fact that there is virtually no future for arable cultivation in this country unless with the assistance of a subsidy from the State or help in some other way. Left to the free play of economic forces the area under the plough will progressively dwindle. As has been indicated above, the reduction of the arable area need not in itself be regarded as an absolute calamity if expansion is taking place in other directions. But an uncontrolled decline in the ploughed area cannot be other than harmful. No matter how favourable conditions may be in other branches of the industry, if farmers witness an annual decline in the arable area, experience loss and disappointment from the cultivation of the land they turn with the plough, then the whole heart is taken out of farming. It is essential to have a policy with regard to the arable side of farming for the post-war period—a policy based on realities, one which recognizes the inevitability of a reduction in acreage but which appreciates equally that only when farmers know that the position in regard to the arable area has been underpinned will they be free to concentrate upon expansion in other directions. The Government should, therefore, announce its intention of seeking to maintain a definite acreage of land under the plough in the post-war period. It is suggested that the minimum area should be

10 million acres in the United Kingdom. Farmers should be assured of a standard payment per acre for every acre under the plough, with a maximum of 10 million acres. If this area is exceeded, the standard payment should be scaled down proportionately. If the area is less than 10 million acres a corresponding increase should be paid. The amount of the standard payment must obviously depend on the level of prices and of costs of production, including wages, after the war. There will be ample opportunity of examining the amount of the standard payment in the first year of peace, which is covered by the present Government guarantees. In order to avoid a too precipitate reduction in the acreage under the plough to the 10 million level, the standard payments should be graduated downwards. As purely tentative figures the standard payment might be fixed at £2 per acre for the second harvest after the war, 30s. per acre for the third harvest, and £1 per acre for the fourth and each subsequent year. The cost to the State on this basis would be £20,000,000 per annum in the first year, subsequently declining to £10,000,000. In effect this sum would be divided by the total ploughed area each year and the annual payment per acre arrived at in this way. No other payments should normally be made in respect of any individual arable crop. The liability to the State would be definite and moderate.

In the fourteen years 1924-25 to 1937-38, some £40,983,177 was defrayed by the State in subsidy for home-grown sugar and £20,178,000 sacrificed

in revenue abatement—a total of £61,000,000, or well over £4,000,000 per annum in the effort to establish one crop which is unnatural to British agriculture. For the greater part of this period no assistance whatsoever was given to other forms of arable production. From 1932 onwards assistance was then given to wheat producers, the average amount paid in the six years 1932-33 to 1937-38 being about £4,300,000 per annum.¹ Yet neither of these measures maintained the ploughed area—they simply encouraged the cultivation of crop production on lines completely divorced from the normal development of British agriculture—that development is more and more towards livestock. There is no reason in peace time why subsidies should be given towards crops for human food rather than for crops used for livestock production. The aim should be the maintenance of a reasonable area under the plough so as to secure a balanced industry, even though the main future development of the industry will be towards increased livestock production. It is certain that an annual payment of £1 per acre ploughed would have had far more effect in maintaining the arable area before the war than the measures actually adopted for subsidizing individual crops and at less cost. Incidentally, it would not necessarily have been less favourable to the wheat producer than the system of deficiency payments under the Wheat Act. The total payments to farmers in England and Wales under the Wheat Act amounted to £25,700,000 in the six

¹ In England and Wales.

years 1932-33 to 1937-38. The total area of wheat grown in England and Wales in these six years was 9,915,000 acres, so that the acreage payment per acre was 52s. per acre. But no farmer can grow wheat on all his land every year. He could obtain 52s. per acre for only part of his ploughed area—seldom more than between a third or a quarter, frequently a fifth or a sixth. For most wheat growers, therefore, a payment of £1 per acre would have been more favourable to them than the benefit derived from the Wheat Act, while it would have had the further advantage of being more assured. There would, undoubtedly, be a fall in the area of wheat under such a scheme compared with the position under the Wheat Act—but the total ploughed area would be maintained at a higher level, and it is with this that we are principally concerned.

The post-war future for the plough must be the inglorious one of fighting a rearguard action and of finally making a stand behind the defences thrown up by the State at some position well behind the present forward front. The reverse is the case with livestock. There is no reason why the progress being made prior to 1939 should not be rapidly regained and further expansion embarked upon. There will be a shortage of livestock throughout the whole of Europe when the war ends. Pre-war competitors such as Denmark and Holland will have suffered even more severely than this country. It must be our aim to ensure that the re-establishment of livestock production in this country,

especially in the case of pigs and poultry, takes place well in advance of any similar revival in other countries which formerly supplied the British market. There will first of all be the problem of rebuilding the breeding stock. Every possible assistance should be given by the provision of first-quality stock, whether by premiums to selected animals or by grants. But the main direction in which immediate help can be given by the State is in connection with feedingstuffs. There will be no shortage of animal feedingstuffs in the overseas countries when the war ends, but there will continue to be difficulty in obtaining shipping space for the carriage of these feedingstuffs to our shores. We must anticipate that when the war ends there will be a substantial shortage of shipping and that freight rates will remain high for some time. It may be recalled that such was the case in 1919 and 1920, and there is reason to believe that an even more acute shortage in shipping will exist when the present struggle is over. One of the directions in which valuable assistance can be given to the rebuilding of our livestock industry is by subsidizing the cost of importing feedingstuffs after the war.

Imported animal feedingstuffs constitute by far the most important class of purchased materials used in British agriculture. By comparison fertilizers and seeds represent quite a small proportion of the farmer's expenditure. Indeed after feedingstuffs the biggest item of expenditure on purchased requirements is in respect of imported store animals.

A policy of rendering available abundant supplies of imported feedingstuffs at cheap rates would therefore afford one of the principal means of assisting the farmer. The principle of subsidizing the cost of raw materials used in agricultural production had already been introduced before the war in the provision of lime and basic slag at half-price under the Agricultural Act, 1937. It is along these lines that we should concentrate the State's assistance to the industry after the war. One of the weaknesses of Government policy in the years before 1939 was that it was largely designed to assist specific crops and livestock products. The earliest assistance was given to sugar beet and to wheat with the object of helping the farmers of the arable areas of eastern England. The arable farmers of Scotland and Northern Ireland had to wait many years before a much smaller measure of help was given to them in the oat subsidy. But in so far as they produced crops for feeding to stock it could be claimed that they were benefited by the regulation of imports of bacon and meat and the direct subsidies on fat cattle and bacon pigs. But up to the outbreak of war no direct assistance had been given to the sheep breeder or the potato grower, even although some regulation of imports existed. The egg and poultry producer had no direct assistance, and a fairly substantial tariff had failed to protect the industry from serious overseas competition. It was, in fact, almost impossible to discern any definite policy towards agriculture through the patchwork of tariffs, quotas and subsidies, not to

mention other lesser measures, which had been introduced in one form or another for the assistance of specific branches of the industry. Nor is it easier to trace any clear principle upon which different branches of farming were selected for varying degrees of help—or were ignored altogether. In some cases considerations of defence clearly justified help in certain directions; in other instances it appeared that the case for State intervention rested upon the inability of a particular branch of agricultural production to face world competition or to help itself. It is an exaggeration to say that the assistance from the State was in inverse proportion to the efficiency of a particular branch of farming or to its suitability for expansion—but there is a substantial element of truth in such a statement of the position. At all costs let us avoid in the post-war period a policy of *ad hoc* schemes for the relief of distress in specific branches of agriculture regardless of the broad trend of development in the industry. This is especially the case when we are emerging from a period of war conditions, when artificial factors have led to an abnormal development in certain directions and equally abnormal restrictions in others.

It should therefore be accepted as a fundamental basis for State assistance to British agriculture after the war that this assistance should be designed not for the encouragement of any particular product, but for creating the conditions under which the industry can make the most rapid progress along its natural lines of development. This can best be

achieved by cheapening the factors of production—by removing all burdens which operate to restrict the use of land and by cheapening the raw materials which are required for production. Direct assistance from the State should, therefore, take the following forms :

1. The payment of a subsidy per acre ploughed, designed to maintain the ploughed area at around 10 million acres.
2. The payment of a subsidy in order to cheapen the cost of the raw materials used in agriculture—principally imported feedingstuffs, but also fertilizers and seeds. Implements should also be included and measures such as the provision of cheap electric power.

It is impossible to-day to indicate the precise character and amount of the assistance which will be required to maintain a healthy agriculture in the post-war period. It is, however, sufficient to lay down the directions in which this assistance should be given. Its precise amount must be a matter for consideration when the war ends. But this at least is certain—any form of assistance to British agriculture along the lines of tariffs or artificial restrictions of supplies is unlikely to be practical in the post-war period. We are reluctant to state our war aims at this stage in the struggle, but can we imagine a continuation after the war of the mounting tariff restrictions which prevailed before 1939? Or can we believe that we shall again see peoples ready to restrict their consumption in the interests of some form of economic autarchy? We

shall surely have emerged from the mentality which induced nations to prefer guns to butter. The future of British farming will be infinitely better assured if it rests upon a foundation of direct State assistance on the lines indicated in the previous pages than if it is bound up with an elaborate and artificial system of tariffs and trade restrictions which will constitute the very antithesis of the post-war civilization for which we are striving.

In a period of war when a great part of our economic life depends upon the spending power of the State, it is inevitable that we should think first of the assistance which the State should continue to give to agriculture after the war. Moreover, if farming in these lands is to be maintained on a prosperous basis after the war, it is inevitable that it should receive a very substantial measure of assistance from the State for many years to come. An industry cannot be revolutionized in response to the national needs in time of war and left unaided to find its salvation in the difficult post-war era. But it should be our aim so to rebuild British agriculture that in due course it can stand unaided, prosperous in its own vigour and strength. There must, therefore, be no undue preoccupation with State grants and financial assistance to the exclusion of considerations of improved methods of production and marketing, for it is in the latter directions that the real solution of agricultural prosperity is to be found. There must be a constant effort to improve efficiency in production and in marketing—a return to the ideals of fifteen years

ago, when the principal assistance by the State was designed to bring about better farming and better business. Better living must be provided by the State for a period after the war, but it should be a challenge to all farmers and farm workers and all interested in the land of Britain to improve our farming conditions and our methods of marketing so that eventually better living can be provided by the land itself for those who devote their life and work to its care.