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THE FUTURE OF FARMING

By

C. S. ORWIN

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God speed the plough and blesse the corn mowe.

SIXTEENTH CENTURY DIALOGUE

Our first father, at his toilsome plough,
Thorns in his path, and labour on his brow,
Clothed only in a rude, unpolished skin,
Could he a vain, fantastic nymph have seen,
In all her airs, in all her antic graces,
Her various fashions, and more various faces;
How had it posed his skill . . .!

Anne, Countess of Winchilsea: ADAM POSED.

God made the country and man made the town.

William Cowper: THE TASK.

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PREFACE

IN the following chapters I have indulged in a retrospect concerning the social and economic consequences of our national industrial policy which may be refuted; in an analysis of the present unsatisfactory position of agriculture in England, and of the causes of it, which may not meet with universal acceptance; but only Time can stultify my forecast of the future of farming in this country which follows. It is the outcome of more than thirty years' experience of rural life and industry, acquired as farmer, land-agent, research-worker, and all the time, I hope, as student. It is put forward, in all seriousness, as an indication of the policy which should be pursued by the State, of the practice which should be initiated by the industry, if farming is ever again to occupy a great place in the economic life of the nation.

I am indebted to all my colleagues both for inspiration and for suggestions, though this is not necessarily to say that they concur in all my arguments and conclusions.

C. S. O.

AGRICULTURAL ECONOMICS RESEARCH INSTITUTE,
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I

AGRICULTURE AND NATIONAL STABILITY

THERE is no industry which appeals so widely to popular interest and imagination as that of farming, no other about which every one feels that he is possessed of so much innate knowledge. The depression in agriculture is a recurrent newspaper theme, even at a time, for example, such as the present, when one-fifth of the workers in the coal industry are totally unemployed and without prospect of employment, and when other of our national industries are almost equally affected. This profound and universal interest of people of all classes and of every trade in rural enterprise is instinctive. Farming is more than an occupation, it is a life, the life which nature intended that the human race should lead. Everything which man needs for clothing and sustenance is the product of agriculture. Agriculture is the only one of the primary industries which creates wealth without at the same time destroying it; for the recuperative powers of the soil are such that it has yielded, and will go on yielding, a return to man through an infinity of time, whereas the coal-hewer and the iron-smelter bring the world's resources surely, if not measurably, nearer to the point of exhaustion.

And yet, in England, this interest in farming, so widely manifested, is, speaking generally, a sentimental interest. Britain, industrially, is abnormally developed. Measured by almost any standard, the agricultural industry is of relative insignificance in her economic life. Of the total occupied population, no more than one-seventh is engaged in rural industry; of males, only one

in twelve follows farming for a living. The agricultural output of England and Wales, in terms of money values, accounts for a trifle of one-seventh of the total yearly output of the nation's activity. Of our bread and meat, scarcely any of the former, and no more than one-half of the latter, are of British origin; of the sum total of our requirements it may be said that we live from Saturday to Monday on our own supplies, and for the rest of the week we draw on all the world.

In most parts of the world the problem of how to produce food sufficient for the sustenance of the population has never arisen. In all the newer countries, Canada and Australia for example, agriculture was, of course, the first industry to be developed, and its product remains to-day their most important medium of exchange with other countries. In the old world, too, amongst the more primitive races, such as those of the Orient, farming occupies a similar position, or it suffices, at least, for national needs, whilst in the more industrially developed communities of western Europe measures have been taken by the State deliberately, as in France and Germany, or they have been forced upon them by necessity, as in Denmark, to preserve and intensify the domestic agriculture to secure the national food-supply. In England alone, the most densely populated industrial country of the civilized world, incapable of any territorial expansion and dependent upon the continuity of world-wide sea communications for her food from day to day, has it been accepted that farming must give place. It would be a matter of very secondary importance, in the estimate of the great majority of her people, if food production, as regards most commodities, ceased altogether, and the same is true of the production

of such raw materials as English agriculture contributes to the manufacturing industries of the country. English wheat is unpopular with bakers; beer is no longer brewed mainly from British barley; only the finest quality of English meat enjoys any consideration in the market; English wool, produced from too many breeds and in quantities too small to bulk and grade, provides less than 20 per cent. of the requirements of the woollen manufacturing industry of Yorkshire and the Midlands. Only in milk and in certain milk products does the English farmer (as distinct from the market-gardener and the fruit-grower) make a contribution which the English consumer must still regard as essential to him, and even here the position is very precarious and the hold on the market may be broken at any moment. Butter, indeed, has gone already, for no longer can the dairy farmer meet the price competition which has arisen over an article so easy to pack and to transport. Cheese seems able to hold its own in the quantity which is available, the quality of the imported article being definitely inferior, so that a protected market is created for the small production of English cheese; and milk and cream, by reason of their perishable nature, still enjoy a market naturally protected. But how long will this natural protection last? What length of time will lapse before the stimulus of high prices exacted by the distributors of milk and cream from the consuming public will result in overcoming the difficulties attending the import of these commodities? Already the situation as regards cream is in danger of becoming critical. Cream is sold to the private household at a price equivalent to butter at seven shillings a pound; it is sold to hotels and other large consumers at a figure representing butter at

five shillings a pound. With imported butter selling wholesale at one-and-sixpence per pound an industry has sprung up in 'reconstituted' or 'synthetic' cream, imported butter being beaten up with imported dried milk and water and turned back again into a compound which sells as cream, at a handsome profit to the manufacturer at values current for the genuine article. Nearly all of the 'ice-cream' is made from imported dried milk and butter. How long can the price of cream be maintained in the face of such ingenuity in competition? If it be argued that cream is of small importance, relatively, in the economy of dairy farming, then what of milk? To-day, the farm price of milk for liquid consumption is high in comparison with its price for manufacture of various kinds (cheese, dried and condensed milk, &c.), and to this high initial figure the distributors add more than 100 per cent. for their services. How long will it be before the inflated charge to the consumer will stimulate continental merchants of dairy products to overcome the difficulties attendant on the transport of liquid milk, with the result that the frugal peasant farmer of Belgium, of Holland, and of Denmark may soon be flooding the English market with new milk hurried over the short sea passage in refrigerated tank steamers, or through a Channel tunnel in refrigerated tank cars?

If this day should come English agriculture will have lost its last protected market, and will be less essential even than it is to-day in the economic life of the community. For the greater part of the people it has reached the point at which it is of no vital significance, for they can obtain all the food they need by an exchange with the Dominions and foreign countries, and

this at a cost at which the home producer, as now organized, cannot compete. Nevertheless, reasons are advanced, not infrequently, for fostering the industry of rural England notwithstanding its apparent non-necessity to the bulk of the population. These are concerned, usually, with considerations of national health, national defence, and economic stability. The idea that a large and flourishing rural community is essential as a field of recruitment of healthy workers for the towns, so often asserted, no longer holds ground. The town is not a devourer of men. If it were true, the obvious remedy would be to discover and enforce sanitary measures such as would result in making the conditions of life in the great industrial centres more conformable to human needs, but this has been and is being done to a greater extent every year, and the vital statistics from urban and rural districts give no indication of any marked superiority of healthfulness in the countryman. Again, there are those who demand that national safety in time of war necessitates the maintenance of a certain degree of domestic food production, and this argument seems to maintain as much force as ever. The straits through which the nation passed in the Great War are still fresh in the memory of most, and it is common knowledge that at one time the country was within a few weeks of the failure of supplies of bread-stuffs.[1] Experience has shown that, under pressure, this country is capable of a great expansion of food production, but while it is true that the preponderant and increasing grass acreage of the country represents a reserve of fertility which can be

[1] In April and May 1917 Government stocks of wheat and flour (including millers' stocks) were so low as five weeks and four days supplies.

applied to arable farming and the production of bread cereals in an emergency, the technical skill needed for tillage, and the tillage implements themselves, are not available at any given moment, and only for a conflict extending over years can the grasslands of England be regarded as potential sources of bread. Nevertheless, the repeal of the Corn Production Act, 1917, and of the Agriculture Act, 1920, which had for their objects the maintenance of the ploughland area by a guarantee to farmers of minimum prices for wheat and oats, and the indifference of successive governments to the steady decline of arable farming, justify the inference that the Committee of Imperial Defence recognize no necessity for keeping up a certain standard of production in home agriculture as a material force in meeting any future international crisis.

But there remains the argument for the maintenance of some stability in agriculture, on the grounds that it is inseparable from national stability, even though the preservation of national health and the sanctity of hearth and home may otherwise be safeguarded. Communities mainly agricultural are definitely stable. The environment of the soil induces an attitude of mind which results in reluctance towards radical changes, an attitude which may be contrasted with that of the urban dweller who is naturally quicker, and potentially more revolutionary. Agricultural communities may suffer from internal dissension, or they may be invaded, but their foundations are not permanently shaken, nor is their culture lost. Being self-sufficient, they have no dependence upon other nations. If their citizens be not wealthy, and though their cultural standard be not high, they possess, notwithstanding, the

strength that derives from their being rooted in the soil, and they enjoy a permanence of stability which is possible only on this foundation. Like the pyramids they stand through the centuries, four-square to the world. Rural life and enterprise form their firm and immovable base, and the industrial structure, tapering to the apex, is raised and maintained only on this.

To what extent does the economic life of England conform to this standard? For a hundred years the enterprise and resources of the nation have been directed, more and more, to the production of manufactures for overseas trade, and this has made it possible to build up and maintain a population far beyond her own capacity to feed it with the products of her agriculture. More than this, the exchange of goods for food has led to a decline in the home production of the main food staples, which can be obtained more cheaply from specialist farmers skimming small profits from large areas in the countries where the available land may still be regarded as practically unlimited. As the result of single-minded concentration on the expansion of export trade, the structure of English industry has lost its firm, pyramidal form. Little by little the tapering industrial apex has expanded, the broad agricultural base has been whittled down to proportions relatively smaller and smaller still. In the frenzied effort to foster foreign trade the industrial superstructure has swollen and gone on swelling until the stability of the pyramid has given place to something quite unstable, which more nearly resembles a child's top. Agriculture is still its foundation, the little peg upon which it spins, and round this the urban industries have been built up, swelling out to proportions relatively immense. It has been flogged

into life, growing larger and larger as capital was accumulated and invested in it, and flying round the world markets in wider and ever widening circles in proportion as the production of goods, to be exchanged for the food and raw materials of the primary producers of other countries, increased. As the industrial bulge of the top has expanded, so has its rural peg declined, more and more, into insignificance, but under these conditions its stability is dependent upon the permanence of complementary conditions elsewhere. Only if other countries can absorb the goods available to them in ever-increasing supply, can the top maintain its equilibrium, and to-day not all the impacts of the overseas trade of England can suffice to maintain its old-time velocity. The top has 'gone to sleep'. Will it be possible to start it once more on its round, leaping from place to place as it receives fresh stimulus from without, and wearing away more and more of its agricultural basis as it goes? Will it be possible, on the other hand, to reconstruct it, so that the home market may once more become a matter of greater national concern, and the farming point may grow again, upwards and outwards, until the top-heavy industrial bulge is set off and stabilized, once more, by a broad and strong rural foundation? Or is it now too late for such a reconstruction; has the top already passed its maximum of speed, and are its revolutions becoming slower and slower, thus forecasting the day of its complete collapse, out of which nothing will emerge beyond the hard steel of its agricultural beginnings, and another demonstration of the truth that the stability of a nation is directly proportionate to the vigour of its rural life?

This has been the history of every society since civili-

zation began—a constant striving after an easier way of life than that provided by the struggle with nature and the soil. Slowly a social structure is reared which grows more and more remote from the natural life; the problems that it raises have never yet been solved, and the measure of its growth is the measure of its inherent weakness. To-day, amongst those nations which are engaged in the attempt to add more and more to edifices already in a condition of unstable equilibrium, it is admitted that the industrial organization cannot be maintained without a 'reserve of labour'—a euphemism for a state of existence imposed on a varying number of the community which is more honestly described as 'living seven days from the workhouse'. No state can be permanent under such conditions; the danger of them when they apply to some 15 per cent. of the working population[1] is obvious, and constitutes, indeed, a problem which is exercising the minds of every one in this country to-day. Those industrialists who take the short view, as well as the comfortable and easy-going sections of the community, still think that things will right themselves, and they talk of the idleness of the workers and of the evils arising from agitation. Those amongst the employers of labour who incline to a longer view suggest that the remedy is to be sought in co-operation between employers and employees to secure the scientific organization and control of industry, to attain maximum efficiency in production, to control the market, and so to adjust the supply to the demand. On the other hand, the spokesmen of organized industrial labour believe that so long as any control of industry

[1] In June 1930 the number of workers in insured trades was 12,094,000 and the number recorded as unemployed was 1,911,749.

by private capital remains, the stability of industry can never be achieved, and that the salvation of the worker lies in nationalization. In the meantime, they give some support to rationalization, from the motive that the combination and consolidation effected by it will facilitate the inevitable ultimate transfer to the State.

Any of these courses might effect some amelioration of the worst of the present evils at any given time, or even for a long time, but they cannot offer a permanent solution, for they depend upon the maintenance of complementary conditions in other countries which cannot be expected to last. Can it be supposed that the newer countries, some of them with vast resources awaiting exploitation, will be content to remain contributors of primary products to the making of England's wealth? Is it not evident that the older countries, or some of them, are so much obsessed with the need, or the desire, to be self-sufficing that they will pay almost any price in the attempt to foster home industries? How can mere faith in the future, or the rationalization or nationalization of industry force an exchange of goods with a reluctant second party? At the present day, it is true to say that the only communities with no industrial problems are those whose industrial life is balanced, or more than balanced by production from the soil. They may have little of material wealth, but wealth is relative; amongst the nations of the world they may not rank as great, but greatness, too, is a question of definitions and it has proved, in every case, to be ephemeral. At least they are representative of order, stability, and permanence, to a degree to which no society organized more largely for industrial production has ever attained. England has developed a social order dependent for its

existence upon large-scale industrial production at home in exchange for food and raw materials from abroad, to a point to which it has never before been carried. In no other country of the world does such a condition of things exist. The United States of America, Russia, Italy, and France may be said to be self-sufficing; Germany can produce by far the greater part of the food she requires; the little European States with no important manufactures, and all the rest of the world, are, most of them, actually exporters of food which is absolutely indispensable to England, in exchange for goods which, in the last resort, are not indispensable to them. Can England, for the first time in the world's history, show how to organize a purely industrial society upon orderly and permanent lines, notwithstanding that this involves an utter dependence upon a complementary organization by societies which are so largely outside her influence or control? It may be possible to weld the Empire more and more into one great economic unit and to organize, in its different members, both the form and the quantity of production, and also the distribution of labour, upon lines so exact that surpluses and shortages of employment, of food, and of raw materials would alike be smoothed out. Or, it may be possible that as the progress of science brings the world more near to the elimination of time and space, the industries of the world may be kept in uniform motion by the force of the world's agriculture, and it is this unexamined belief which underlies the industrial development of Britain during the last century. But the difficulty of making one self-sufficing unit out of the Empire; of reconciling conflicting interests in the task of assigning to each member its place in the whole; of

providing for the development of new areas without encroachment on the positions already established by the older ones; in short, of making the British lion lie down with the Canterbury lamb; all the considerations involved represent a task which must stagger the imagination even of the most enthusiastic imperialist, whilst the scientist and the League of Nations have even farther to go before they can contemplate the day when the whole world may be organized as an economic unit. But until this is accomplished, stability in national life must remain dependent upon the stability of the nation's agriculture, and herein, in brief, lies the whole case for special consideration for the British farming industry.

II

RURAL AND URBAN INDUSTRY

AGRICULTURE in England to-day resembles most of the other great industries of the country in its primary organization. It is conducted mainly on a capitalistic basis; it is producing commercially for the open market, not merely for the supply of the farmer's own wants; it has to face world competition for the consumer's demand without any direct assistance. Nevertheless, farming in England is affected by certain conditions governing production, which have little or no influence upon other forms of enterprise.

In the first place, the capital necessary for the conduct of the industry is supplied by two partners as regards some two-thirds of the area under cultivation—the landlord and his tenant. It is the landlord who supplies and maintains the permanent equipment of the industry. He is the owner of the land, that six-inch surface of soil which is at once the farmer's raw material and his factory; it is his duty to drain and fence it; to make and maintain the roads requisite to its use; to supply it with houses sufficient for the farmer and his men; to provide the building accommodation necessary for crops, live-stock, machinery, and the general purposes of the farm. In no other industry is the *entrepreneur* dependent, to such an extent, upon another party at once for the factory equipment, so to speak, and for the raw material of his trade. The agricultural landlord, too, may exercise certain powers of control over the development of his tenants' enterprise, and although the course of legislation during the past fifty years has been, more and

more, to reduce his opportunities of direction or veto, and to promote the independence of the tenant, the relation of the parties is still unique in this respect in the world of productive industry.

In the second place, notwithstanding all the applications of science and invention, English agriculture remains intensely dependent for its success upon the vagaries of the weather. In many other countries the seasons of heat and cold, of dry and wet weather are more or less calculable; in many other industries where seasonal alternations affect production they can be provided against. But in few other countries and in no other industries can the year's work be brought almost to nought by a spring drought, by a wet summer, or by an unseasonable frost, to an extent equal to that which is possible on an English farm.

In the third place, the agricultural employer has not the freedom of action of the industrial capitalist in the matter of the adjustment of his commitments to the prevailing economic conditions. Particularly is this true as regards his labour costs. All forms of industrial enterprise are affected by depressions, which may be temporary in character, or may partake more of the lengthy, cyclical type. The former manifest themselves, sometimes, as the result of speculation, or as arising out of the backwash of adverse conditions in other industries, but both of them may be attributed, ultimately, to over-production—whether this be due to an over-estimate of the consumers' demand or to a restriction of it, from one cause or another. Temporary depressions are met, by the industrialist, by a reduction of output through the expedient of a reduction of the labour bill, either by standing men off or by working the full staff

on short time, until stocks are worked off, and markets improve. Thus, an announcement was made recently in the daily press that the pits in a certain colliery district would be closed for ten days, to enable stocks of coal to be lowered and prices raised. Salvation is sought in times of temporary trade depression by the expedient of increasing 'the reserve of labour'. Agriculture is less affected by temporary depressions, but they do occur, and the difficulty they create for the farmer cannot be met by the same expedient. He cannot stand men off in bad times, except by a process of slow reorganization of the system of farming which takes years to carry out; he cannot close down for a week or two to work off, say, a glut of milk, of malting barley, or of potatoes, and to get prices up; he has to pay a full week's wage to every man, and he cannot go on short time. Consumption of farm produce remains fairly constant, but the surplus from seasonal gluts can be held over, very rarely, from one year to the next. In fact, the farmer is in direct conflict, all the time, with the forces of nature, and if he should suspend his efforts, though even only for a short time, he is beaten. Farming has got to go on almost from hour to hour, and in bad times equally as in good the farmer must carry his staff of labour. No other industry maintains so steady a level of employment within itself. It is obvious that urban industry must pay for its 'reserve of labour' in one form or another, either by insurance contributions, by taxation, or through the local rates; but the problem of unemployment is not one merely of the subsistence of the workless, and agriculture raises none of the serious social problems inseparable from this incident of urban industry.

In the fourth place, the turnover of working capital in agriculture is slower than in almost every other industrial business. Coal which to-day is two miles under the sea in a Whitehaven pit may be in the consumer's cellar in a week, but the first act of tillage for the English wheat which the miller buys in June may have been performed two years before, when the farmer broke up the clover-ley which preceded it in his rotation of crops. Although some forms of live-stock may be marketable with a celerity which compares with factory produce, as, for example, veal calves, which may be turned over in six weeks, and fat lambs which reach the consumer in three or four months, the bulk of live-stock products represent a turnover as slow as, or even slower than that of corn. It takes twelve months to provide the wool clip; beef, as a rule, cannot be ready for market in less than two or three years; whilst a cow must be kept for three years before yielding a farthing's return in the form of milk.

Nor can the processes of agricultural production be speeded up. In the coal-mine day and night-shifts are customary, to make the fullest use of the equipment; in any factory overtime can be and is worked when trade is good. But these expedients to give the quickest and largest return on the capital at stake are not available to the agriculturist; he cannot till his fields nor gather his harvest by night, with the aid of artificial light; he cannot speed up nature because the market is good at the moment, and take two wheat crops in one summer or a calf from his cows once a month. In farming the turnover must always be slow, so slow that the farmer can never know the extent to which the conditions under which his enterprise was conceived and

planned may have changed by the time at which it reaches fruition.

If the profits on farming industry were greater, the slowness of turnover, and the concomitant risks, would be of less moment. It may take longer to build an Atlantic liner than to grow a crop of wheat, but the shipbuilder is working to an order, and to a schedule of prices, whereas the farmer is producing all the time at random, and the returns on his capital should be sufficient to cover this risk.

In the fifth place, there is a degree of inflexibility about farming which differentiates it from many forms of urban enterprise. It is true that great changes have come over agriculture at different periods of history, and it is possible that others, equally great, are pending. But opportunities occurring to the individual farmer for trimming his sails to catch the passing breeze are very few. If wheat be unprofitable, barley cannot be substituted; the crops are not interchangeable in the general economy of rotation farming, even if the soil be equally suitable. If bullock-feeding does not pay it is not invariably easy to turn over to dairying; the needful buildings and equipment may be lacking. Within broad limits, and except for such changes as are forced upon farmers generally—such as the laying down of ploughland to grass, when arable farming has been demonstrated unprofitable by the experience of a series of years, or the reverse policy, under Government orders during a national emergency—there are no opportunities in agriculture, such as there may be in the boot and shoe industry, for example, so to organize the work, from season to season, as to take advantage of passing changes in markets and to cater for the demands and

fashions of the moment. Farming is too intricate; its processes are too slow.

In the sixth place, in times of stress the controllers of 'big business' are able to make certain financial adjustments, to the great advantage of their enterprise, which are not within the range of possibility to the farmer. As the result of losses, whether due to adverse trading conditions, to monetary changes, or to other causes, it may happen that there comes a time when the liabilities of the industrial concern are no longer covered by its assets. In such a case, granted even a return to a profit-earning position, the leeway to be made up is so great that years might elapse before the resumption of dividend payments would be possible, and the position is met by writing down the nominal value of the shareholders' capital by the amount of the accumulated losses. The farmer has no shareholders to participate in the risks of his business; his creditors are his bank and the agricultural merchants with whom he trades, and they require payment in full. They protect their own position by making reserves out of profits to balance the losses which they may sustain on some of their customers' accounts, but they leave the farmer's overdrafts and unpaid accounts standing in their books at their full amount, in the hope that they may, one day, recover them. So he has to go on, under pressure, applying profits which might be available, in part, for the development of his business, to the payment of interest charges and to the liquidation of old debts, and he is hampered and harassed to an extent unknown by the industrial manager.

Lastly, there is the fact already indicated that agriculture is unique amongst the great primary indus-

tries of the world in that the wealth of the soil is inexhaustible.

In dealing with the soil and with crops and stock, we are dealing with active organic material. Not only does the soil improve permanently by good draining and tillage; the scientific rotation of crops conserves and increases the fertility of the soil . . . the community whose economic conditions enable it to develop its agriculture on lines of modern science will have not only a continued increase in its wealth, but also the best security for a continued output of high standard. Its capital, as well as its annual returns, will grow.[1]

It is true that intensive farming, as carried on in the older countries to the farthest point that the prevailing economic conditions of the time may justify, demands a certain replenishment of the fertility of the soil from sources which are not inexhaustible, and this represents a toll of the world's resources in the same way that the consumption of coal may be said to do. But the pull even of intensive farming on outside supplies is very slight, and tends to get less. The return of straw, and of roots and other green crops to the land that grew them; the enrichment of manure by the feeding to live-stock of artificial foods themselves the products of farming; the harnessing of water-power to the production, synthetically, of nitrogenous fertilisers in substitution for the natural but not inexhaustible supplies of nitrates —these and similar things make for the maintenance of production of wealth from the land without any serious call upon the natural resources of the world. Moreover, in extensive districts at the present day, and, in the last resort, everywhere, even this demand is unnecessary

[1] Sir William Ashley and Professor W. G. S. Adams, *Agricultural Tribunal of Investigation, Final Report* (Cmd. 2145), p. 10.

and yet production can go on indefinitely. In England, for example, the extensive upland stock-raising districts yield their increment of cattle and sheep, year by year, without diminution and without recompense to the land. The experiments upon wheat-growing at the Rothamsted Experimental Station have demonstrated that there is a minimum yield below which production of grain does not fall, even when the crop is grown, year after year, upon the same land, without any return to it of the fertility apparently abstracted. Thus, whilst it is possible to increase the product of the land by using up certain of the other resources of the world, this is not an incident essential in the production of wealth by farming enterprise; the raw material of agriculture is truly inexhaustible, and there is no other industry, surely, for which so much can be claimed.

III

AGRICULTURE IN ENGLAND

IN the older countries of western Europe and in all the more settled countries of the new world, the measure of (1) the population engaged in farming, and of (2) the area under arable cultivation, may be taken as the measure of the intensity of agricultural production. A greater bulk of produce results from tillage land than from grass, and the bulk is further increased if the man-power employed in acts of cultivation (for example, the application of spade-labour instead of horse-labour) is intensified. Judged by the standard of employment, there has been a steady, though varying decline in the rural industry of nearly all European countries during the past fifty years, whilst in England, the retrograde movement began earlier, and proceeded farther, and agriculture has long occupied a place of less importance than that assigned to it by any other country. The position of the farming population, according to the latest available census returns from six western European States, is as follows:

Proportion of the Occupied Population engaged in Agriculture.

France (1921) . . .	41 per cent.
Denmark (1921) . . .	36 ,,
Germany (1925) . . .	31 ,,
Holland (1920) . . .	24 ,,
Belgium (1920) . . .	19 ,,
England and Wales (1921) .	7 ,,

In all of these the ratio seems to be falling.

In most countries, however, the manifest decline in population is not only relative to other industries, but it is also absolute—that is to say, there are fewer persons engaged in agriculture, year by year, notwithstanding the growth of population. On the other hand, the area of land under tillage has been fairly well maintained—in some countries it has even been increased—and only in England and in Belgium has there been a heavy decline. Since agricultural statistics were first collected, in 1866, more than four million acres have gone out of arable cultivation in England and Wales; the decline is continuing and the land coming under the plough this year is less than one-third of the total cultivated area of the country. Or, if allowance be made for the fact that some of the grassland is not permanent, but will be broken up again after one or more years, England has about 40 per cent. of her farming area in arable cultivation. With the exception of Holland, where the proportion is the same, in no other country in Europe does the tillage area fall below about 75 per cent., whilst in Denmark it is so high as 85 per cent.[1]

The amount of arable cultivation in any country at any time is determined, in theory, by the ratio of costs of production to returns. Anything which tends to increase costs or to reduce returns results in a reduction of the arable area. This is easily understood. The simplest system of farming is that under which flocks and herds feed and multiply on natural unimproved pasture under the eye of their owner. The improvement of the grassland by application of fertilizers and by acts of cultivation will increase the returns by intensifying

[1] See Professor D. H. Macgregor, *Agricultural Tribunal of Investigation, Final Report* (Cmd. 2145), pp. 180–5.

the stock-carrying capacity—at a certain cost. By ploughing the grass and tilling and sowing the soil it will produce still more abundantly—but at a still greater cost. And just how far this intensification of production can be carried, in any given locality and at any particular time, is dependent on the balance between the costs and the returns prevailing there and then. Sinking the influence of differences in the physical circumstances of the land, and of differences in standards of living between one country and another, which, of course, introduce differences in costs of production, here is, broadly, the explanation of the variations in the proportion of agricultural land under arable cultivation in different countries and, taking this as the standard of measurement, of the variations in intensity of production also. Why, then, do most of the old European countries show a declining tendency, and why, particularly, has England fallen most of all?

As regards the first question, all Europe, with the exception of Russia, has been faced, for the past fifty years, with the competition of production in the new countries, where, by a system of farming large areas of cheap land for a relatively small return per unit area, and at a labour cost relatively still smaller, the products of the soil could be put upon the market at prices against which the more highly farmed lands of the old world could not compete. In proportion as the manufacture, in Europe, of goods for export increased, so was a market made for these cheaper agricultural products of North and South America, Australia and New Zealand. Under the unrestricted operation of the foreign exchanges this meant a fall in the prices of food and of raw materials derived from agriculture, under

the influence of which land in the older countries became, first, marginal, and then unprofitable, and there began a decline in the arable area of all of those which were affected by international trade.

Here, also, is the answer to the second question—why has arable farming declined most of all in England? Not every country was affected by the new circumstances, and, of those likely to feel their influence most, some thought well to adopt measures designed to mitigate their effect on the home farming industry. England had been easily first in the race for foreign trade. Before Germany was an empire, before France had settled her constitution, and while most of the smaller states of Europe were still quite undeveloped, the industrial organization of England had got well away. The growth of capitalist agriculture and of capitalist industry were going on, side by side, in England long before any other country had begun to emerge from a purely peasant state, and the two movements reacted one upon the other, until the point was reached at which agricultural expansion could go no further, whilst the limits of exploitation of the vast industrial resources of the country were still far beyond the horizon. This was roughly the position of things shortly before the middle of last century, and under the pressure of protective tariffs, and of an agriculture incapable of further development, some decision had to be taken. Was England to accept the limitation which these conditions imposed on her rate of industrial expansion, and to remain a country in which rural and urban enterprise were fairly balanced, or was the organizing ability of her industrial leaders to have the unrestricted scope which would accrue from the throwing down of all

tariff barriers, regardless of the consequences to agriculture? The decision was in favour of unrestricted trade, and it was taken the more easily because at that time there were virtually no external sources for the supply of corn and meat, so that the menace to agriculture was entirely hypothetical; it was not until the last quarter of the nineteenth century that transport and other developments turned the threat of overwhelming imports into a reality, and by that time the country was too deeply committed for any reconsideration of policy. The abolition of the Corn Laws demonstrated an allegiance to the principle of free trade—the idea that every country was specially adapted to the production of certain things, and that it should concentrate attention on them to the exclusion of all others, which should be bought, by exchange, from those countries situated more favourably for producing them. Whilst being cosmopolitan in its conception, this principle was supposed at the same time to embody the national advantage. In theory, the argument is so obviously sound that it is small wonder that it received universal, if sometimes no more than passive endorsement throughout Europe, for thirty years or more after the repeal of the Corn Laws in England. The argument is sound to-day for those countries whose natural circumstances either make them preponderantly agricultural or enable them to maintain a balance between rural and urban industry. It may be sound universally in the days when there is no more war, and when the organization of production throughout the world is so perfected that all waste, whether human or material, is eliminated. But how has it affected the national life of England as judged by the conditions prevailing in the country to-day?

Less than three generations of life under conditions of uncontrolled exchange have sufficed to make England the centre of a world empire; to make London the world's financial centre; to raise up a population more than twice that which it was. They have sufficed also to concentrate more than 90 per cent. of the population in urban areas; to create 'reserves of labour' amounting to a quarter of a million in the coal-mining industry and in the cotton industry; to 60,000 in the ship-building industry, and to a total of 1,850,000 for all trades other than agriculture;[1] to create a dependence on overseas supplies for some 60 per cent. of the nation's food and for the greater part of the raw materials of industry; to reduce the area of land under arable cultivation by nearly five million acres and the workers engaged in agriculture by more than a third of a million men; to break up rural society still further by the destruction of the old village industries.[2]

The other western European nations reacted differently to the unprecedented conditions created by the opening up of agriculture in the new worlds. To begin with, none of them were ready, at the time, to take advantage of this opportunity for overseas trade, and so soon as the threat to their own agriculture became serious, they forthwith took stock of the position.

On the side of manufacturing industry it became clear

[1] June, 1930.

[2] 'We know that one of the characteristic features of the domestic system of manufacture was the scattering of workshops in the villages, the very basis of that system consisting in a close alliance between cottage industry and the cultivation of small holdings . . . the blow dealt to peasant property broke that time-honoured alliance of labour on the land and industrial work.' Paul Mantoux, *The Industrial Revolution in the Eighteenth Century* (London: Jonathan Cape), 2nd. ed. 1928, p. 189.

that directions of activity on which the nation had already entered with success, or for which it seemed to possess the necessary natural resources, could be cut off or blocked by manufacturers in other countries who were earlier in the field of large scale production. On the other side, the rural side of national life, it became clear that the national agriculture could not stand up against the competition of cheap foreign grain, and that to leave it unprotected would mean catastrophe to the peasantry who still owned and cultivated by far the larger part of the soil.'[1]

Thus it was that Germany and France, having decided, as a matter of national policy, that their agriculture must be maintained even at the expense of some degree of industrial expansion, set themselves to devise scales of protective duties as being the only means of preserving arable cultivation and rural population. The scales have varied from time to time, and signs have not been wanting, on occasion, of a restiveness on the part of the industrial elements of those countries, who wanted cheaper food for their factory hands and fresh outlets for their goods. But the war has given a fresh stimulus to nationalism, and the divergent interests of urban and rural industry are hidden, anyhow for the moment, behind an even greater multiplication of tariff barriers.

However, there are other European countries who have not sought to protect their home agriculture to the same extent as countries such as France and Germany; there are some, indeed, who have not protected it at all. Belgium, for example, has pursued a policy of partial protection, being content, apparently, to let the corn lands go, so as to take advantage of the cheap supplies of grain available from the prairie

[1] *Agricultural Tribunal of Investigation, Final Report* (Cmd. 2145), p. 46.

farmers, whilst protecting her animal husbandry. Thus, arable farming has declined as much as in England, but meat and dairy production has prospered under the tariff. It remains to explain the position of countries such as Denmark and Holland, who are committed to the same policy of unrestricted trade as in England.

In the case of Holland, the country never was given up to arable farming to the extent that other western European countries are or have been, nor has her agriculture been so intensive at any time as that of her neighbours. Having practically no industrial resources she has not been concerned to feed a growing industrial population, and her exports of the produce of her 'truck' farming, together with the profits of her very considerable carrying trade, have enabled her to pay for such imports as the country required.

The case of Denmark is different. Here is a country, free trade as regards agricultural produce (except cheese), maintaining and even increasing the intensity of its agriculture, as represented by the proportions of its arable cultivation and the ratio of rural population, during all the years following the crisis in European farming occasioned by the advent of the prairie farmer. The explanation is partly physical and partly economic. Denmark is a small country, with almost uniform soil conditions and these unfavourable to the maintenance of permanent grass; the country lies within the same degrees of latitude as the north of England and eastern Scotland, the winter is long and cold, the grazing season short. Under these conditions it is obvious that arable farming must predominate, just as it does under similar climatic conditions in Britain.

But this does not tell the whole story, and the principal

stimulus to agriculture in Denmark has been, and still is, the absence of competing industries. Denmark has virtually no manufactures other than of the products of agriculture, no coal nor minerals, and nothing to exchange for the coal and manufactured goods which she needs except her agricultural output. Thus, when Denmark aspired to become something more than a primitive community, meeting its simple needs from such native resources as were available, and taking no advantage of the products of modern industrialism, she could realize her ambition only by an intensification of her agriculture and by organizing it so as to produce a surplus of food-stuffs for exchange. Protection of agriculture, such as given by Germany and France, would be quite inoperative; Denmark has nothing to protect her agriculture against, she must farm in order to live, and the open market of England has given her the opportunity she needed.

These facts about the economic conditions of agriculture in the western European States explain the decline of arable farming and rural population in England, and their maintenance, at the same time, either absolutely or at least relatively, in other countries. Intensive agriculture in England suffers, however, under another handicap which is peculiar to itself. In no other country have things proceeded so far in the direction of capitalism in farming, that is to say, in the separation of the functions of *entrepreneur* and worker. In fact, it is not too much to say that agriculture in England is carried on, in the main, by hired labour, whereas continental farming is conducted mostly by the family-farmer. This is true quite independently of any question of the system of land tenure, whether proprietorship or

tenancy. In Denmark, for example, which is a country of smallholders, peasant proprietors are the rule, and the same may be said of most parts of France and Germany; in Belgium and Holland, on the other hand, where peasant farming also prevails, tenancy is more common.

In countries where the family-farmer predominates, whether as owner or tenant, costs of production are necessarily lower than in England, where wage-labour is more general, because so much of the labour applied in the industry never appears in the cost sheet. The family-farmer, wherever he is met with, works himself and his family very hard; he pays no wages to his wife and often none to his children; their hours of work are unlimited; the remuneration per head falls often below that of wage-labour in agriculture.[1] In England it is no longer necessary for women to work for wages in agriculture. The degree to which the women of the family engage in farm work is another measure of the standard of living afforded by the industry in different countries. Women appear to engage in work other than that devolving on them in the process of running their homes, either because those homes are so well supported by the earnings of the male members of the family, or because they are not. In the former case there is no need for the girls to go out to gain a living, but they are glad of the opportunity to pick up some pocket-money and to get some social intercourse; wherever well-paid employment for men in large numbers is met with, there also will be found industries which exploit this kind of

[1] E. Thomas, *The Economics of Small Holdings* (Cambridge University Press), 1927, p. 99. See also p. 88 *f. n.*

female labour.[1] In the latter case, the women must work in order to balance the family budget. In rural England this necessity was exploited in many places, before the days of State regulation of agricultural wages, by the wide-awake urban industrial,[2] but in countries where industrialism is less rampant than in England the country-women have no other alternative than to work on the land. This work, as a regular routine, is always unattractive to them, and people familiar with the conditions under which it is performed will understand that they engage in it only from necessity. Thus, the measure of the employment of women in agriculture is some index, in inverse ratio, of the economic position of the rural community.

Proportion of Women Farm Workers to Total Persons engaged in Agriculture.

Germany (1925) . . .	51 per cent.
France (1921) . . .	44 ,,
Belgium (1920) . . .	21 ,,
Denmark (1921) . . .	15 ,,
Holland (1920) . . .	14 ,,
England and Wales (1921) .	7·5 ,,

Contrast the conditions of rural life in the western European States, mainly peasant-farmed, with that of the English farm-worker. In England there is none of that segregation of industrialism which makes distinct societies of the Ruhr and of Bavaria, of Lorraine and of Normandy. England may be said to be saturated with industrialism from one end to the other, and public

[1] Witness the Great Western Railway Works, at Swindon, and the clothing factories there.

[2] Witness the location of glove-making, as an out-work industry, in districts which, before the advent of the Agricultural Wages Board, were notorious for the low rate of farm wages.

opinion has come to demand for the farm-worker conditions of life comparable with those of his opposite number engaged in urban industrial pursuits. His hours of labour at ordinary pay are restricted to a certain maximum, varying with the season of the year, after which special overtime rates must be paid; the rates of pay are governed not by what his competitors in overseas agriculture can earn for an equal day's work, nor by what the product of his labour is worth in the open market, but by what workers in other industries, subsidized as they are by cheap foreign food, can secure. Even so, the official organizers of agricultural workers' trade unions want to bring the conditions of life and labour on the land still closer into line with those of the towns, and to get bank holidays, annual holidays, and other privileges extended to the farm-worker at the expense of the farming industry. Nor is the extra charge on home agriculture restricted to the demands of organized labour. The continental peasant is master and man too, and his standard of life is the subsistence level. In England, where the two functions are united no longer in the same individual, not only has the worker secured for himself a life something better than this, but so also has his capitalist employer. The English farmer is not expected to be content with a subsistence wage, but at the same time, it must be recognized that he comes into direct competition with farmers on the subsistence level the world over.

It is impossible to criticize these standards and ideals. It has been pointed out already that in continental countries where industrialism has been developed, there is marked segregation of rural and industrial regions, and the left hand knows little of that which the right

hand is doing. In England, on the other hand, there is no man, probably, living on the land, who has not a relation engaged in the factory or in the mine, on the railway or in public works, and the contrast of their relative economic positions, and of opportunities for enjoying what are regarded by the majority as the amenities of life, is always to be made. No one can want to impose a standard of economic or social life upon one great section of the community lower than that which is enjoyed by the rest; nevertheless, the consequences of the higher industrial standard must be faced, and these are an ever-dwindling agriculture.

Nor does this exhaust the handicap of English farming *vis-à-vis* the continental industry. Reference has been made to the decline in the number of workers engaged in agriculture; of the total decline between the years 1871 and 1921, about one-third is in respect of boys between the ages of 10 and 15, and is the result of the Education Acts.[1] In Denmark, in spite of the well-deserved tributes to its system of adult education, children of these ages are required to attend school only on three days in the week, so as to be free to contribute their *quota* of unpaid labour to the family farm on the other days. Nor are there facilities to enable the country child to enter the secondary schools. Although the education is free, there is no system of maintenance grants by which alone many of them could take advantage of it. In Germany, regulations requiring daily attendance at school for some nine months of the year are general, although the holiday seasons may be adjusted to suit local agricultural requirements. In Belgium, on the other hand, not only are the holidays

[1] D. H. Macgregor, *op. cit.*, p. 172.

arranged in this way, but children from 10 to 14 years of age may be released for agricultural work for a further period not exceeding 35 days in the year. In Holland, too, it is possible to get leave of absence from school for children over 11 years of age to engage in farm work. In France, the regulations regarding compulsory attendance are pretty stringent, but there is reason to believe that a good deal of evasion is connived at.

The net result of all these variations in the conditions of labour engaged in the agriculture of western Europe is to make production definitely more expensive in England, even allowing for such advantages as her larger farm holdings may enjoy in opportunities for increasing the efficiency of labour by the use of machinery, and to reduce the degree of intensity of production which is possible. The position is brought out clearly enough, by reference to conditions in Germany and Denmark, in the *Final Report* of the Agricultural Tribunal.[1] Figures are given there to show that whereas 100 cultivated acres in Germany will provide sustenance for 72 people, the same area in Denmark will only support 49 people, and in England only 48. On the other hand, whereas one equivalent 'man' engaged both in German and in Danish agriculture produces sustenance for a fraction less than 8 Germans or Danes respectively, one 'man' occupied in British farming sustains more than 10½ persons. No better proof could be given of the fact that the greater standard of intensity of farming in Germany and Denmark is purchased at the cost of the workers' standard of living, and this must continue until the day when Geneva can secure equal conditions of life for all workers.

[1] p. 157.

To summarize the position of agriculture in Europe, in all of those countries with few or no resources other than the soil, farming has got to go on under whatever conditions the world-market in agricultural staples may impose. In no other way can they produce a medium for exchange. Countries thus placed follow a purely self-sufficing system, or else they avail themselves of supplies of cheap grain from the prairie farmers whilst organizing their own agriculture for the production of specialities for the export market. In this way Holland and Denmark, for example, are importers of bread-corn, and concentrate, in their own farming, in the case of Holland, on market-gardening and dairying, and, in the case of Denmark, on dairying and pigs, for export in manufactured products. In a measure, this enables them to make the best of both worlds, but the solution is not without its dangers, and the imposition, say, by Britain of a high tariff on butter and bacon, with total exemption to supplies from Ireland, New Zealand, and other parts of the Empire, would bring Denmark face to face with overwhelming disaster.

In all other countries, where natural conditions encourage the development of manufacture and export, one of two things must happen; either the home agriculture must be sacrificed in order to develop overseas trade between the home manufacturer and the overseas farmer, or it must be protected against this mischance. For the manufacturer an exchange of food for his goods is essential; the larger the export of goods, the larger will be the import of food; and the cheaper the food, the lower will be the cost of living to his workers and the lower, consequently, his manufacturing costs. In England, the view was taken that as the growth of her

colonies and of her shipping was always extending the boundaries, so to speak, of her farming area, there was no need for the protection of the home-producer, since English agriculture offered no advantages as such, and was useful only to the extent that it could carry on, unaided, in the face of free imports. In France and Germany, a different view was taken. Partly from their less extensive colonial system, partly from their weaker naval position, partly, probably, from their fear of each other, they held it to be essential to preserve their agriculture. The effect of the protection afforded in either country was undoubtedly to check the rate of industrial development, because it restricted the free exchange of goods. At the same time, it not only maintained but even stimulated agricultural production, because of the higher prices which the farmer was able to realize; more intensive farming was possible, and, with this, the maintenance of the arable area and of the rural population.

Truly has it been said that the real competitor of the farmer in an industrial country is the manufacturer for export. It is he who, as the indirect producer of food, competes with the farmer, the direct producer. England has been committed for so long and so deeply to the policy that has wrought such havoc in the countryside, that any change at this hour is almost unthinkable. Moreover, such tendency as is manifest, from time to time, towards a break with unrestricted free-trade serves only to accentuate the farmers' difficulties, for the principle of 'safeguarding' is applied only to the manufacturing industries. On every occasion of its application, too, the opportunity is taken to reassure the town dwellers upon the principle of no taxes on food;

the foreign food still comes in free, and the cheap agricultural machinery from abroad is taxed. But notwithstanding the growth of empire, in spite of the accretions of wealth, and in the face of complex social problems, still growing and still unsolved, all of which have followed in the train of unfettered industrial expansion and unheeded agricultural decline, the issue of the historic struggle for the complete abolition of taxes on the people's bread seems, when regarded in retrospect, to have lost some of the garlands which have hung about it for so long.

IV

'GOD SPEED THE PLOUGH'

'THINGS are what they are, and their consequences will be what they will be. Why, then, do we deceive ourselves?' Monsieur Édouard Herriot, a former French premier, entertains no doubt as to the consequences of the things that are in English agriculture. It remains for Time, and the enterprise of English statesmen and farmers, to show that he is deceiving himself:

> Nous assistons à la mort de l'Angleterre parce qu'elle a sacrifié délibérément son agriculture, lorsque furent découvertes ses grandes mines de charbon. Comme elle avait la liberté des mers, elle crut pouvoir revivre, grâce à sa seule industrie. Mais, aujourd'hui, la concurrence des États-Unis et même celle de ses propres colonies réduisent au chômage 1,500,000 à 1,800,000 hommes.
>
> L'Angleterre peut encore distribuer des secours. Mais que deviendra-t-elle lorsque sa réserve d'or sera épuisée? Elle est menacée, comme jadis Venise ou Carthage. Conservons donc bien à la France son caractère agricole.[1]

What can be done to prevent the catastrophe visualized by Monsieur Herriot, and suggested in the first chapter of this book? England can never hope to feed the population which she is likely to be called upon to maintain for many generations to come. That production from the land could be intensified far beyond the present point is undoubted; that the country would never bear the cost which such an effort would throw,

[1] Report in *Le Matin*, 4 June 1929, of a speech delivered by Monsieur Édouard Herriot at Vonnas (Ain), two days before.

either upon the industrial classes through the artificial stimulus required to prices, or upon the agricultural industry itself through the lowering of the standard of living, is equally sure. Whatever is destined to be the ultimate end of the present organization of urban and rural industry in England, it behoves all those who believe in the need of a firm and stable agricultural basis to take stock of the present position, to listen to the farmer's case, and to consider what steps might be taken calculated to bring about some measure of stability in the industry and to restore confidence in its future.

One of the greatest difficulties in the way of action arises from the universal practice of discussing agriculture as though it were a business organized throughout the country upon a common plan. It would be no more absurd thus to discuss the problems of the iron industry, and to include under that label everything from the manufacture of motor-cars to the rolling of steel rails and the production of tenpenny nails. The country contains no industry to-day so diversified as farming; not only does it manifest itself in a variety of ways as different, one from another, as the galvanizing of iron sheets from the drawing of copper wire, but even within each particular branch the organization of production may follow entirely different forms. So it is not surprising that the decline in prosperity has proceeded to very various lengths in different parts of the country, according to the type of agriculture pursued, and to the system of organization within it.

As regards organization, the sickness from which farming is suffering stops at the point where the family-farmer predominates, as, for example, in the south-

western counties, in Wales, Cheshire, Lancashire, and so on to the Border. It ceases, also, irrespective of organization, where production is confined to those commodities which do not come into direct competition with the Dominion or foreign producer's surplus, as, for example, new milk and small fruit. In fact, it is now, and it has always been, the capitalist farmer, working mainly on arable land for the production of corn, who is most seriously affected by the consequences of national economic policy. All assertion and discussion of 'the' depression centres round the decline of arable farming and the difficulties of the corn-grower, and it is with this limitation that all generalizations on the depressed condition of farming must be interpreted. Other branches of capitalist agriculture may be affected from time to time. At the moment, the hop-growing business is in a serious position, but this is a matter of little moment, except to the hop-grower, and he has himself largely to blame. Another branch of arable farming seriously affected, too, just now, is the potato industry, in which over-production has knocked the bottom out of the market, and growers all over England are badly hit. Depressions of a cyclical character occur, also, in some commodities, particularly in pigs, where rapid increase in numbers is easily attained under the influence of high prices, only to break the market and to drive farmers out of the business, when the cycle begins at once to revolve again. These and other problems call for study, but if there be any virtue in the maintenance of arable farming, it is the problem confronting the corn-grower and created for him by the open English market, which is the primary consideration. Arable land gives the greatest ratio of employment,

except in a few favoured grassland districts, and measured in terms of food values, it is upon arable cultivation that maximum food-production depends. Only by the maintenance of prosperous ploughlands can the value of agricultural production and the numbers of the rural population be maintained.

It seems to be recognized, on all sides, that arable farming has reached a crisis in its history, the culmination of two generations of steady recession as more and more land became marginal, and then disappeared under grass, interrupted only by the feverish activity of the war years. An important witness before the Agricultural Tribunal of Investigation expressed the opinion that the area under the plough was unlikely to fall below 11,000,000 acres. This was in 1923, when the figure was 11,181,137 acres, and the arable land has fallen each year since then, till in 1929 it stood at 9,947,758 acres, with no reason to suggest that it had then touched bottom.

The whole experience of the decline in cereal prices has been that there is only one remedy available to the farmer if he is to maintain a balance between income and expenditure: ploughland must go down to grass. It has never been suggested that salvation could be sought in any other way; on the contrary, by the tacit consent of all, the prevailing systems of arable husbandry are regarded as having been tried and proved beyond the possibility of any fundamental adjustment to meet the fundamentally altered economic position. Grassland supersedes ploughland, but on the contracted arable area the farmer still pursues the systems of cultivation sanctified by the usage of his locality, and no one has ever questioned his practice. It is true that there have

been changes. Fruit growing and market-gardening have displaced mixed husbandry in certain districts; crops such as the potato have experienced a more extended cultivation; others, such as sugar-beet, have pushed their way into the rotation. But these changes have been effected by the adaptation of the routine, there has been no fundamental reconstruction of it. The members of the Agricultural Tribunal of Investigation, who had the advantage of the assistance of representatives of the National Farmers' Union, of the leading agricultural scientists, of the official representatives of the Ministry of Agriculture, found no reason to challenge this position, and were agreed that, without entering upon a prophecy, the arable area was likely further to decline. In the words of Sir William Ashley and Professor W. G. S. Adams: 'In view of the prices which the farmer is receiving for his crops and the probable future course of prices there is every likelihood of a further reduction in the arable area;'—and of Professor D. H. Macgregor: 'Arable land has declined so persistently that it is not a controversial statement that only by some form of subsidy can a further decline be averted.'

Certainly no farmer will question these conclusions. He asks that they shall be accepted by the community and that the State shall pay the price necessary to stay the decline. Discussion as to the form which it should take has embraced many possibilities, but whether it should be by subsidies, guaranteed prices, duties on imports or otherwise, it must be remembered that it is the policy of 'protection'. There is no need to shirk the issue, for the time has come when the condition of corn-growing in this country calls for a consideration of the

position in the national interest, unprejudiced by the reiteration of the old shibboleths.

It is interesting to note how the English wheat crop still enjoys the prestige attaching to the white man's most essential food-stuff, notwithstanding that bread bakers dislike it and that much of it is used for chicken-food. All the discussions of the arable farmer's plight come back, sooner or later, to the price of wheat. The market price of a sack of wheat, it is asserted, should be the measure of the worker's weekly wage, and nearly every suggestion for the form of State aid most likely to assist the farmer resolves itself into a proposal for assistance for the wheat-grower. The Agricultural Tribunal of Investigation, or a majority of it, recommended the payment of a subsidy of 10*s*. per acre on each arable acre, and a further 10*s*. per acre on each acre of wheat.[1] On their assumption of a maximum arable area of 11,000,000 acres, and of a maximum of 2,000,000 acres of wheat, such a subsidy would cost the country £6,500,000 as the upper limit. At the present time (June 1930), this would give the farmer a total return of about 41*s*. 6*d*. per quarter for a four-quarter wheat crop.

Farmers themselves are asking for assistance by way of a subsidy for the wheat-grower. At a mass-meeting held at Cambridge, in February 1930, a demand was put forward for a guarantee of 55*s*. per quarter, the view being expressed that nothing less than this would suffice to secure a profit to the average grower. In the month following, the Council of the National Farmers' Union adopted a resolution urging the Government to announce a guarantee of the same amount, and to enact

[1] *Second Interim Report* (Cmd. 2002), p. 5.

a system of guaranteed remunerative prices for home-grown cereals. But what justification is there for a demand for a guaranteed profit? Agriculture is not the only depressed industry in the country to-day, but none of the others have asserted such a claim. It has been the object here to show that there are grounds for treating the farming industry as an exceptional case. Other industries have scaled down their production to the level of the reduced demand and have jettisoned their surplus workers. Farming alone has carried on, up to the present, in the face of increasing difficulties in certain large areas, and has made no contribution to the ranks of the ever-increasing army of unemployed. For this reason it may lay claim to some special consideration; for the further reason that, failing some material improvement in their economic position, farmers will begin to throw in their hands, the pace at which land is tumbling down to grass will be accelerated, and the unemployment now too apparent in the towns will begin to be manifest in rural districts, the Government might be well advised to consider some form of assistance to agriculture as being a more economical alternative than unemployment pay. To keep men at work on the land, even at a price, is to maintain their *morale*, to secure a certain standard of production from the land pending better times, and to assist in the maintenance of the rural industries subsidiary to agriculture, and of the tradesmen dependent on it.

But this granted, is the farmer entitled to ask for anything more than that he should be secured against loss, and this only if he is reasonably efficient in the conduct of his business? The only attempt made by the State upon lines of assistance by way of subsidy or guarantee,

embodied in the Corn Production Act, 1917, and the Agriculture Act, 1920, was founded, clearly, on this principle, for it contemplated some computation, year by year, of the costs of growing wheat and oats under average conditions, and a guarantee to the farmer of a return of these amounts, and no more. If the State is to shoulder a commitment of this character, it is entitled to demand fair, average ability upon the part of those responsible for the industry assisted, for no good can accrue from bolstering up the inefficient, of whom the sooner the industry is purged, the better for it. A guarantee of security against loss, or a subsidy calculated upon the same basis, would give the average farmer the assistance needed across a bad patch, and would enable the extra efficient to go ahead with even greater confidence. More than this cannot be expected.

A subsidy for wheat would cost the country money, and the suggestion is that it would be worth it in the general interest, at this juncture, but it is not the only way of assisting in the preservation of arable farming. To-day potatoes are unsaleable on the farm, and they command a price of no more than £2 or £3 a ton delivered into the market. Is there any good reason why imports should not be cut off whenever the price of good English potatoes stands in the wholesale market at, say, £3 or less? The consumer does not get the advantage of the glut, for there seems to be a price below which the retailer will not sell, and only the excess profits of the middleman would be affected by a measure such as this. Britain is self-sufficing in a normal year as regards the potato supply, except for the very early 'new' potatoes from southern Europe, and any legislation to protect the market in home-grown supplies

could be framed without interference with the consumption of these tasteless, watery tubers by those who profess to enjoy them.

The subsidy proposed on wheat, then, might be accepted as a temporary expedient, designed to tide the cereal farmer over a bad patch, to maintain rural industry, in general, in the corn-growing districts, and to prevent the flow of agricultural labour into the ever-growing stream of unemployment. It would cost money; the suggestion is that it would be worth the price, though if it were to have anything more than a temporary duration it might raise again the problem it was intended to solve. Under it, men might be stimulated to plant land now outside the margin of cultivation, and with any subsequent decline in markets these people would, in their turn, become clamorous for State assistance. The embargo on imported potatoes would prevent a recurrence of the present position, under which thousands of tons of good food are being consumed by farm live-stock or are actually wasting; it might be made permanent, to the detriment of no one; it would cost the country nothing.

The position regarding potatoes raises the whole subject of dumping. Here, there is no question of an organization by the foreigner to supply the British market, as happens, for example, in the case of Denmark and the trade in butter and bacon. On the contrary, with the exception of the very early new potatoes, imports represent a seasonal surplus in the country of origin, for which England offers the only open market in Europe, and they are sent here to fetch what they may, upon the principle that 'something is better than nothing'. In the same way, surplus oats from Russia

and Poland have been offered, recently, on Mark Lane, at prices which spell ruin to the grower of English oats for sale. A position somewhat similar in its consequences, though one artificially created, has arisen lately in connexion with wheat and oats consigned from Germany under a system of export licences granted by the Government of that country. Under this scheme, persons desirous of exporting specified agricultural products, may receive negotiable certificates, corresponding in value to the amount of the minimum tariff rates on imports of the same commodities. Within a limited period, these certificates are receivable, at their par value, in payment of import duties, and the effect of the system is to enable the farmer of eastern Germany, who can transport his grain to the Scandinavian countries or to Britain more cheaply than to the industrial consuming centres of his own country, to secure what amounts to a bounty on his exports by the sale of the export certificates to those who can import dutiable agricultural produce to greater advantage. There is no drain on German food supplies, but a certain amount of grain from the region of surplus-production, which would otherwise find its way into the home market under a handicap imposed by the long rail transport, is disposed of more economically by export and replaced more economically by imports.

Another danger to the English farmer, of the nature of dumping, is threatened through the formation of certain marketing associations in the great exporting countries. The creation of organizations such as the Canadian Wheat Pool and the American Farm Board might be expected to assist the home producer, for their obvious purpose is to maintain prices. But to secure

this they will have no concern, naturally enough, for any but their own members; recently, to take an example, the American Farm Board is reported to have made immense purchases of wheat to support the market in its own country, and if it should suit it to dump this grain abroad, it is in Britain, as the largest importer in the world, that the dumping effect will be most felt. Until there should be some form of federation of the many State and co-operative pools now operating in the various exporting countries, the danger to the English farmer of violent fluctuations in the grain market at home is even greater than in the days when the producers were quite unorganized.

It is not always the volume of the trade in dumped produce by which the farmer is affected, for this may fluctuate very considerably, and sometimes it does not amount to much. But an uncertainty is aroused, and a lack of confidence is engendered, the reactions of which are very detrimental to the home industry, and it may well be argued that the farmer is entitled to demand to be protected from it. In the case of commodities in which this country is self-sufficing, or nearly so, as with potatoes, the demand for legislation should not excite controversy, and there is no reason apparent why it should not be conceded. With regard to other commodities, of which a considerable import is necessary to maintain the nation's food-supply, the demand for measures to counteract the effect of dumping has mostly taken the form of a plea for protective duties, designed to raise the price in this country. This might result in the assurance of profit to farmers on the present arable area, but if so, it would tend to bring under the plough land at present on the margin of cultivation, and so it

'would not protect the farmer against similar fluctuations in price which might, perhaps, take place on a somewhat higher level. Farmers engaging in wheat production would be subject to almost exactly the same danger in regard to imports as at present. It would still be worth while, if internal circumstances required it, for the American Farm Board, or the Canadian Wheat Pool, or the Russian grain export monopoly to sell its surplus abroad, at any price the market would pay, tax or no tax.'[1]

However, with four-fifths of the population of the country dependent on imported supplies, and determined to buy them in the cheapest way, the possibility of protection for British agriculture, in the literal sense, cannot be considered. The situation remains, however, to be faced, if arable farming on its present lines is to be maintained, and the trend of thought, at the present time, lies in the direction of the stabilization of prices by means of a National Purchase Board. Once more, discussion centres round wheat, as being the subject at once of greatest concern to the arable farmer and best adapted to intervention by the State, and it is proposed that 'the whole purchase and import of foreign (and, presumably, of Dominion) wheat, for consumption in this country, should be undertaken by a statutory corporation, set up by Parliament for this purpose, with full monopoly rights of import . . .

'In regard to home-produced wheat, the Imports Board should be required to publish guaranteed stable prices, at proper parity with import prices, at which millers or the Board itself would be prepared to buy, during a defined period . . .

[1] E. F. Wise, 'The Stabilization of Wheat Prices', *Journal of the Farmers' Club*, Part I, 1930.

'The Board should adjust its supplies of imported grain to the mills, so as to ensure that a market is available for all British wheat of milling quality tendered for sale . . .' [1]

This is the gist of the scheme, so far as it affects the British farmer, and it is not easy to see how it may benefit him, and so serve to stay the decline of arable farming. The world price of wheat, from year to year, will still be governed by the supply and the demand. In years of bad harvests, the price will be no higher than under the existing conditions of trade; in glut years, nothing can save the export pools from the necessity of offering their surplus to the Imports Board at any prices that it may care to make. If, then, the price of home-produced wheat is to be fixed 'at proper parity with market prices', it is difficult to see how the creation of an Imports Board could help the British farmer at a time like the present, when there is a big carry-over of corn in the exporting countries to be got rid of somewhere and somehow.

Certainly this is not the farmer's conception of stabilized prices. His trouble arises as much from the fact that he has to produce for an unknown price as from the fact of low prices. When he talks of stabilization, he is thinking of a guarantee given to him before his operations are begun. What should be the amount guaranteed is really of secondary importance; so long as he knows how much it is to be, he is in a position to decide whether he would be justified in incurring the risks incidental to arable farming in order to grow wheat at this price, or not, and he can set his course accordingly.

[1] Wise, *op. cit.*

It is possible, even likely, that the operations of the Board would tend to the benefit of the consumer, particularly in view of various readjustments in distribution and manufacture contemplated by its advocates. For the farmer, the most that could be hoped is that it would have a steadying effect on the violence of fluctuations—without doing anything to secure for him a better market—and to the extent that erratic movements are a disturbing factor in the psychology of the wheat-grower, the creation of a monopolist purchasing authority might do good. On the other hand, it might not; artificial stability might prove synonymous with organized stagnation, and, in any case, it is most improbable that it would bring about the breaking of a single acre of grassland.

V

PROGRESS IN FARMING SYSTEMS

THE problem of the maintenance of arable farming seems to be associated in the minds of every one with the present crisis in agriculture, which is admitted on all sides to be real and to call urgently for a solution. On all sides, too, it is assumed that nothing can be done by the farming industry itself to adjust its methods to meet the crisis other than by throwing land out of cultivation and labour out of employment. This amounts to an admission that English arable farming is now stereotyped; it has developed to a certain point, it has evolved a routine and a technique, and nothing remains except to carry on with both, treating the grass-land as the adjustable factor, to be reduced or increased according as the prices for corn crops rise or fall. In other words, the evolution of ploughland farming has reached finality.

Let us examine the position. For centuries past arable husbandry in England has been practised on the basis of a rotation of crops, designed to provide food for man in the form of grain, and for farm live-stock in the form of fodder. The two have always been associated; so far as history records, there was never a period when the practice of tillage was entirely dissociated from the maintenance of farm live-stock, and with the passage of time this purpose of ploughland farming has been intensified and developed. Beginning with the times when the only crops the farmer knew were grain crops, the straw provided the only winter feed for cattle, and the fallow-break, in the simple rotation of two years

corn and one year fallow, was nothing other than a one year's ley of weeds and natural grasses upon which the live-stock were grazed. Nothing was further from the minds of the early farmers than the nineteenth-century idea of a 'bare' fallow; they wanted all the rubbish that the land would grow, and no doubt they got it. The capacity of the farm to carry live-stock was limited to the number for which winter food could be provided.

The introduction, first, of clovers and rotation grasses, and then of the turnip and its many congeners, revolutionized the possibilities of arable farming as an aid to the maintenance and increase of live-stock. Clover and artificial grasses provided additional summer keep, but, what was more important, they added to the farmer's stock of winter fodder, and so they enabled him to winter a greater head of cattle. The turnip and its allies performed a similar function both for sheep and cattle. But as regards the practice of arable farming, these things involved but little change in principle. The rotation grasses added one year to the length of the rotation, by splitting the two years of corn crops, but the turnip crop took its place on the fallow field, and gave the farmer a winter food-supply in the place of the rough summer grazing, and left him with a fair field for his following corn crop instead of a foul one. From the point of view of cultivation, then, these revolutionary changes had done nothing more than convert the three-field rotation—fallow, corn, corn—into a four-field rotation—roots, corn, clover, corn. Farming, as a whole, was intensified, but the cropping system continued as a mixed business, designed to produce consumable corn crops on half the land and fodder crops for live-stock on the other half, and the interactions of the two, by which

the land was rested and its fertility restored, remained unaffected.

The four-course rotation thus evolved is the basis of the arable farming systems of to-day. It has been modified and extended in a great variety of ways in many districts, but nothing has occurred anywhere, nor at any time, to alter the basic conception of its purpose—the systematic production of all sorts of crops, some for direct sale, the others for consumption on the farm by every kind of live-stock. It has survived all the great changes affecting the industry during the past century and a half. The inclosure of the open fields, of course, gave the four-course rotation its chance; root-growing and the practice of temporary leys were impossible under open field farming, when the cornfields were thrown open to common grazing after harvest, and the fallow field was grazed for most of the year. It was unaffected by the application of the discoveries of the great chemists of last century. The work of Liebig, of Lawes, and of Gilbert, on the production and use of artificial fertilizers, by which it was demonstrated that soil fertility and crop production could be maintained without the use of farmyard manure, and that corn crops could be grown continuously on the same land, left the theory and practice of rotation farming quite untouched. Farmers, the country over, were content to use the new fertilizing agents as a means of intensifying their production under the established rotations, and there are only three recorded cases in which men sat down to consider all the implications of the new knowledge with the object of devising a system of arable husbandry which might give to it its fullest effect. Even the shock of the great agricultural depression of the 'eighties and 'nineties left

the position of the mixed-farming rotation unassailed. Arable fields became grass fields in great number, but over the restricted ploughland areas the four-course rotation and its offspring continued to exercise their sway.

The improvements effected in farming during the past century and more by succeeding—if not always successful—generations of farmers, have been immense. This country has led the world in the improvement of livestock; it has shown all Europe the means by which to increase the yield of the soil. Such an achievement may be held to be sufficient justification for the universal acceptance of the mixed-farming rotation as the thing fundamental to arable husbandry, but the position into which the industry has fallen to-day seems to raise a doubt and to ask a question. Must the principle of mixed farming be accepted as the last word in arable husbandry, and if not, what are the alternatives in the face of its uneconomic position in large districts of England to-day?

Dealing with the latter point first, the experience of other days suggests that the arable farmer has one alternative and one only, namely to give up the struggle against low prices, and to put his land down to grass. In the long years of the Victorian agricultural depression, in the shorter period covering the collapse of prices after the war, there was no attempt on his part to modify the traditional system of corn-farming, he could find no other way than to change from ploughland to grassland. The land selected to be thrown out of cultivation was by no means necessarily the worst wheat land. It was usually the strong land, which, while producing, often, the heaviest crops, was expensive to

work, so that the ratio of costs to returns was high, and it was the first to go. Gradually the less profitable fields reverted to grass, and it is towards grass that the farmer's mind is turning to-day if his demand for a subsidy, or for a price guaranteed by the State, should find no favour with an electorate composed mainly of consumers.

But the grassland alternative to-day is a proposition different from that which it was. Corn-growing is much less universal, now, than it was once, and the earlier encroachments of grass-farming have restricted arable cultivation more and more to the drier and lighter lands, where ploughing and other acts of husbandry are most cheaply performed, and it is just these districts, the areas of low rainfall and of easily worked soils, which make indifferent pastures. When tillage ceased on the great Midland clay belt, for instance, the grassland, as it became established, proved well adapted to bullock-feeding and to dairying; on the lighter lands in the drier climate of the Eastern counties, which constitute about five-sixths of the wheat lands of England to-day, it is not possible to establish good pastures, and the type of grass-land farming which would replace the present arable cultivation would be unproductive, relatively, and would mark a backward movement. The value of the land would fall, employment upon it would decline, and the tide of rural life in general would begin to ebb.

Turning, now, to the other point, is it permissible to challenge the mixed-farming rotation of crops on arable land, as representing the only possible manifestation of ploughland farming? Sanctified by the usage of centuries, and unquestioned by all the farmers of England to-day, it seems very improbable, on the face of it, that this system may contain an unsuspected weakness which

makes it applicable no longer to the conditions which control production from the land at this time. On the other hand, there may well be reluctance to believe that farming progress has reached finality in this country and that corn-growing, except in a few small districts and except for the farmer's own purposes, must be abandoned.

It is all a question of prices, and these are determined by the production of farmers in other countries, who look to England for their market. If their systems of farm management be considered, it is apparent at once that they differ fundamentally from those prevailing generally in England, or, for that matter, in Europe as a whole. The farmer for export is always a specialist. The price of wheat was brought down to a level representing ruin to the English arable farmer, not by men who farmed as he did, under some natural advantage of soil or climate, but by those who concentrated all their energies on the production of wheat. English butter has been driven off the market, virtually, by the New Zealander and the Australian, concentrating on the sale of butter-fat to the creameries, and by the Dane, developing a complementary system of milk and pig products. Half the meat supplies of Britain, too, represent the output of specialist graziers in Argentina, Australia, and New Zealand. In this country, those forms of farming least affected by the price position are those which approach most nearly, in their organization for production for the market, to the idea of specialization in one or two products. Thus, the dairying industry, both milk and cheese, is carried on, in the main, by specialists segregated in certain districts; the production of store cattle and sheep is, largely, the monopoly of farmers in the remoter and poorer agricultural regions

doing little else; market-gardening and fruit-growing are run, for the most part, as businesses apart from general farming. It is by the spread of his commitments that the English arable farmer is marked off, to-day, from the competitors for his markets, and it is the English arable farmer whose economic position is most seriously affected at the present time.

Nor is it only in England that this difficulty is felt. The big capitalist farmers of north Germany are similarly affected, and they, too, are followers of a diversified farming system. In the peasant areas of Europe the position would be the same but for the fact of the advantage they enjoy of farming without paid labour, so that while a period of low prices may reduce the standard of living, it is in no danger of putting the balance of income and expenditure on the wrong side of the peasant farmer's account.

Were not the great readjustments made necessary to the British farmer in the closing decades of last century imposed upon him by men who were concentrating all their energies upon the production of one commodity, who, without the distractions of a diversified farming system, were free to devote themselves to the study of the elimination of waste, and to the reduction of the costs incurred in production to the very lowest point? The advantage of this ability to concentrate on the production of one or two commodities apply with equal force to the problem of marketing. Marketing is a business in itself, and the difficulties of the producer in the sale of his output must be intensified in the direct ratio of the number and variety of his products. Nor is this all, for the concentration of one-product farming in districts, or belts, leads to the establishment and growth

of efficiency standards. Without becoming stereotyped or stationary, there is created, as the result of the common endeavour, a certain general ability in farm management to which the majority conform and upon which the minority can draw, a sort of pooling of wisdom and experience which operates, undoubtedly, to raise the average level of performance. On the other hand, nothing is more striking to the overseas visitor than the diversity of standards in the mixed farming districts of England.

To the extent that the British farmer is producing food for consumption, in the main, in the great centres of concentration of population in his own country, he may be said to be farming for export, in the sense of the organization of his business, just so much as is his overseas competitor. That he has not yet organized the machinery of distribution of products to an equal extent is due to the relative ease of disorganized sale in a nearby market, which tends to obscure its weakness. The quesiton must be asked, now, Are there no examples to be found, in England, of men who have set themselves to test this system of specialization in arable production? And the answer is, that there are only three recorded cases.

The first of these experiments was described by its originator nearly fifty years ago, and again, some fourteen years later, by an independent observer. It was entirely successful, it aroused some interest, and it made not a single convert. John Prout farmed in Cornwall for some years, before proceeding to Canada, where he gained experience of the agricultural practice prevailing there in the 'fifties of last century. Returning to

England, he bought two adjacent farms, Blount's Farm and Sweet Dew's Farm, near Sawbridgeworth, in Hertfordshire, extending together to some 450 acres, and he entered into occupation of them in the autumn of the year 1861. From that time onwards the two were managed together as one enterprise. They consisted of what was regarded, at that time, as typical wheat land, that is to say, a strong clay. The ploughland was wet and foul, the grassland wet and poor. It took four years of unremunerative work to drain and clean the farm, but by the end of that time Mr. Prout had the whole of the 450 acres in tillage and in fair order. A firm believer in the teaching of chemical science as applied to agriculture, he took a great interest in the work of Lawes and Gilbert, and particularly in the results of their experiments on continuous corn-growing, with artificial manures. Becoming associated with the late Dr. Augustus Voelcker, he decided, under his advice, to test the new principle upon his farm, and eliminating live-stock as an integral part of the system both as a potential source of profit and as the agent in the maintenance of soil fertility, he cultivated the holding for the production of saleable crops, relying upon artificial manures to restore the plant food thus abstracted, and upon an occasional bare fallow to clean the land. On this strong land, however, much can be accomplished in weed-suppression by the ordinary acts of tillage, performed properly and at the proper time, and the bare fallow was seldom necessary; of the eleven years, 1870–80, Mr. Prout has recorded: 'I have grown [corn] crops on the entire surface of the farm.'[1] The system of cropping established

[1] John Prout, *Profitable Clay Farming* (London: Edward Stanford), 1881.

at this time, and maintained afterwards with little variation, was to have six-sevenths of the land in corn crops and one-seventh in clover. But there was no stereotyped rotation of crops; not only did wheat, oats, barley follow each other or repeat themselves solely as prices and circumstances dictated, but the clover crops or the bare fallow had also no definite place, and they were taken only when the land showed signs of getting out of condition under long continued corn cropping.

BLOUNT'S FARM

Cropping of Three Fields, 1870–80.

Year.	*Home Field.* *60 acres.*	*Cross Field.* *56 acres.*	*Dudley Field.* *40 acres.*
1870	Wheat and Barley	Sainfoin and Lucerne	Beans
1871	Barley	Sainfoin and Lucerne	Wheat
1872	Wheat	Wheat and Oats	Clover
1873	Wheat	Wheat and Oats	Wheat
1874	Wheat	Wheat	Wheat
1875	Oats	Wheat	Wheat
1876	Oats	Clover	Wheat
1877	Oats	Wheat	Wheat
1878	Clover	Barley	Wheat
1879	Wheat	Barley	Wheat
1880	Wheat	Barley	Wheat

Mr. Prout decided early that to work this strong land cheaply and efficiently would be impossible with horses alone, and the bulk of the tillages were performed by steam tackle. Nor did he believe in too much cultivation and scarifying. When once he had got the farm clean, he relied mainly on ploughing, and, with the aid of a judicious system of artificial manuring devised by the late Dr. Voelcker, he went steadily ahead, during the thirty years following 1864, growing corn

continuously and making profits when all the other farmers of England (except one) were seeking salvation from the consequences of low prices in laying ploughland down to grass. All the time, wheat was his most remunerative crop; barley paid him, but at a lower level; oats were grown mostly for the feed required by the half-dozen horses which he kept.

John Prout died at the time when wheat touched the lowest figure recorded for a century and more, but his son, W. A. Prout, continued to farm upon the same system of cropping, with artificial manures and without live-stock. Also, he continued to make profits. In some of the worst years of corn farming, 1900–4, in three of which the price of wheat fell below 27*s*. the quarter, there was a small profit after everything was sold—corn, straw, and clover-hay.[1] The improvement which set in after this period should have been reflected handsomely in the net returns, but for reasons quite unconnected with farming, it was found necessary to sell the holding, and the enterprise was abandoned after justifying itself and Mr. Prout for over fifty years.[2] Under his system of arable farming for crop production, for direct sale, without live-stock, there had been no deterioration of the land, the yield of grain had been increased, and the costs of cultivation of this admittedly intractable soil had been reduced. Moreover, he had kept the plough running during a long period of adversity for the arable farmer.

The second example of success in specialization and in

[1] W. A. Prout and J. Augustus Voelcker, 'Continuous Corn growing in its Practical and Chemical Aspects', *Journal of the Royal Agricultural Society of England*, vol. 66, 1905.

[2] The farm was sold in 1913.

plough farming is one more remarkable still. George Baylis, son of a Berkshire farmer, was born, near Pangbourne, in the year 1845. At the age of 21, five years after John Prout had begun his venture at Sawbridgeworth, Mr. Baylis took a farm of 240 acres, at Bradfield, and farmed it in the orthodox way, for corn and live-stock. After six years, he had lost £600, and dissatisfied with this result and determined to leave no stone unturned in the attempt to make his operations pay, he set himself to reconsider his farming system and to weigh up the possibilities of its revision. In this process he perused all the available literature of the day, and very quickly he came upon the reports of the experiments of Lawes and Gilbert, at Rothamsted, 'which prove that corn can be grown, without dung or sheepfold, by the application of ammonia and phosphates in artificial manures'. Convinced by these experiments, he proceeded to consider their practical application to his own circumstances. He argued that the weak link in the chain of operations making up the traditional Berkshire four-course, sheep and barley, system at that time, with the Downs as a lying-off ground for the flock and for store cattle, was the cost of the maintenance of soil-fertility. The cost of the root crop, and of the consequent sheepfold, of yarding cattle, and of carting and spreading the dung—all of this was incurred, in the main, to replace the extraction of fertility by the corn crops grown for direct sale. 'If the work of Lawes and Gilbert is to be taken at its face value', he argued, 'this process of replacement of plant food in the soil can be short-circuited, to great financial advantage, by the elimination of live-stock and by the evolution of a cropping system designed to utilize the maximum

acreage of the farm in the production of crops for direct sale, while maintaining its fertility by the application of artificial rather than of natural manure.'

This, surely, is another outstanding example of the application of science to practice. The idea of utilizing the results of the Rothamsted work as a means of intensifying the established system of husbandry, or of tinkering with it in any other way in an attempt to maintain profits, was never in his mind; he went right back to first principles, and resolved the situation in the light of this new knowledge.

In 1875, Wyfield Manor, at Boxford, near Newbury, was offered for sale, and Mr. Baylis bought it. The farm extended to 400 acres, lying on the southern slopes of the Berkshire Downs, and on it Mr. Baylis settled down to his great adventure, which has made him the biggest arable farmer in England.

As with Mr. Prout, his interpretation of Lawes and Gilbert's work led him, straightaway, to the decision to abolish all live-stock production. Grassland was to be broken up; fertility was to be maintained by the use of artificials; the land was to be cleaned by the aid of bare fallows; humus was to be retained by ploughing-in the stubbles and clover-root; the total production, grain, straw, and clover hay, was to be turned directly into cash. A six-year course was evolved, as follows:

Corn	Clover
Fallow	Corn
Corn	Fallow

and it has been practised, with only occasional variations dictated by special circumstances, for more than fifty years.

'Corn' is either wheat, barley, or oats as may be con-

venient, but barley accounts for about half the area under grain crops. A good deal of winter barley is grown—peas or beans, never. In exceptional circumstances, two white straw crops may be taken, but, as a general practice, the bare fallow always intervenes. This land, an easy-working loam, is infested with charlock, and is more apt, probably, to weeds of all kinds than was the strong, cold clay with which Mr. Prout had to deal. Thus, the more frequent fallow has been necessary.

By the year 1885, Mr. Baylis was in a position to take on another farm of 500 acres, which was offered to him rent-free for a year. From this time onward to the year 1917, the profits made by his system of corn-growing were invested in the hire or purchase of one farm after another, and to-day there are no less than twenty-two farms in his occupation, extending to more than 12,000 acres, and of half this area he is owner as well as occupier. This vast enterprise, unique in England, which is still being carried on, has been built up entirely under a system of specialization in arable crop production. Dependent as it is, in the main, on the sale of grain crops, nearly all this land was accumulated out of profits made during thirty years of severe depression in the corn trade. Mr. Baylis claims that he has never dispossessed another farmer who was both able and willing to carry on, and several of his farms were taken over from mortgagees in possession or even in a condition actually derelict.

Mr. Prout's work received some advertisement through the publications of the accounts quoted; the greater venture of Mr. Baylis has remained unknown outside his immediate neighbourhood, and unrecorded,

until the issue, recently, of a brief history and description of it.[1] It might be expected that amongst the farmers in their vicinity, if not elsewhere, some would have been found to profit by their enterprise and experience and to imitate their methods. There is nothing in these to call for special skill, either in technique or in organization, but it is true to say that none have followed them, and though Mr. Baylis still goes on, the strongland counterpart to his experiment, initiated by Mr. Prout, itself has faded out.

What is the explanation of this indifference of other farmers, harassed as they were in their efforts to make plough-farming pay, to the demonstration of a successful system patent to their eyes?

'In what other branch of industry', wrote John Prout in 1881,[2] 'would it have been possible for success equal to mine to be left during nineteen years with so few imitators? Had I been as successful an improver in almost any other line of business, I should, years ago, have found my profitable practice introduced far and wide, with modifications adapting it to any number of special circumstances, and myself, defending a patent against parties seeking to deprive me of the benefit and credit of the method. Why is it that, for aught I can perceive, I may go on for another nineteen years without leading hundreds and thousands of farms to a similar pitch of improvement? . . . Unless I am prepared to libel the qualities of Englishmen, and to malign the intelligence of my brother farmers, I am obliged to assert that it is the ill condition of land tenancy in its laws and customs in this country which stands so obstinately in the way of at least one proved mode of reaping profit from the clay soils of whose future many people now despair?'

[1] C. S. Orwin, *A Specialist in Arable Farming* (Oxford: Clarendon Press), 1930.

[2] *Op. cit.*, p. 85.

There is little doubt that in the days of which John Prout was writing restrictive covenants and the want of provision of compensation on quitting, adequate to an improving tenant, were a bar to progress in many cases. But the effects of these conditions were removed, first, in part, and later, fully, almost in John Prout's lifetime, and still he found no imitators. Nor has the system devised by Mr. Baylis for lighter lands exercised any influence on the farming of his district, even though it has continued for nearly a quarter of a century since Parliament enacted that the tenant should enjoy 'freedom of cropping'. Some explanation other than laggard land legislation must be sought.

A hundred years before it might have been by the interest and co-operation of the landlords of England that this new conception of the business of arable farming would have been tested and spread, but by the 'eighties of last century, the enthusiasm of the landowner for agricultural improvement had received a check from which it has never recovered. The fall in prices, followed by wholesale reductions of rents and the abandonment of holdings, particularly in arable-farming districts such as those in which the Prouts, father and son, and George Baylis carried on their successful ventures, at once impoverished and discouraged them to the point at which it would be futile to expect of them that they should embark upon a new venture. Together with their tenants and their humbler neighbours they had been offered as a sacrifice to the monster of England's industrial greatness; why should they give fresh hostages to fortune? Both the will and the means were wanting, and their only course was to play for safety such as was represented by

the tenant able and willing to carry on under any system which involved them in the minimum of expense.

What was true of the landlord's attitude towards experiments in the maintenance of arable farming during a time of declining prices, was applicable, also, to that of the tenant. But apart from the reluctance of either to speculate at such a time, there are causes far deeper operating to prevent the easy adoption by farmers in general of methods so revolutionary, and so different fundamentally from their prevailing practice, as those demonstrated to them by John Prout and George Baylis. And this has no reference to their innate conservatism nor to their shrewd appreciation of the difference between the conditions of work on the farm and those obtaining in the laboratory, or even on the experimental plot. Farmers are slow to learn new tricks. As pointed out already, agriculture is not one industry, it is a collection of many industries, and to suggest that the follower of one branch should turn over, in a time of adversity, to another, is to suggest that the roller of steel rails should take up, in a period of depression, the manufacture of wire netting. The expert in tillage and the sheepfold hesitates to rush into stock-raising and dairy-management; the mixed farmer cannot picture to himself the possibilities of a corn ranch. In neither case, too, is his farm equipment adapted to the change; he must convince his landlord as well as himself.

The great changes that are known to have overtaken farming practice in certain localities have been brought about, in the main, not by the farmers native to them but by immigrants from other districts, who have

brought with them the traditional farming of their own stamping grounds. The best illustration of this fact is afforded by the introduction of the dairying industry into many parts of the south-midland and southern counties, where corn-and-stock farming were once the rule. When the import of prairie wheat and refrigerated meat first knocked the home producers' prices endways, it was the large capitalist corn-and-stock farmers who were most affected, and it was on their farms that rents began to fall away. In the west of England, and in parts of Scotland, where stock-raising, and, more particularly, dairying, on farms relatively small was the prevailing practice, farmers were less affected, rents were less depressed, and soon it became apparent to them that cheaper and larger farms were available to those who cared to move. And so began a great trek, eastward from Cornwall, Devon, and Somerset, southward from the lowlands of Scotland, by hard-working family-farmers, who established their traditional dairy-and-stock farming systems where once the waving cornfields had held undisputed sway. An investigation of the origin of present-day dairy-farmers of many counties comprising the once predominantly arable areas, reveals the fact that many of them are no more than one generation removed from one of the traditional dairying and grass-farming districts. For they, too, have learnt no new tricks; they have brought with them the farming that they knew, and, accustomed to hard work, either alone or alongside their men, they have found on the cheaper land of the broken corn-growing capitalist, and in the expanding milk-market of greater London and the coast towns, an opportunity such as they never knew before. Where the native farmer still hung

on, he did it by reducing his cornlands, increasing his live-stock on the larger grassland area, and by economizing in every possible way on production costs. More rarely, did he learn something from his new neighbours.

So John Prout and George Baylis have found no imitators. Mr. Prout's system of clay-land farming has been abandoned; Mr. Baylis still goes on, but he admits that to-day he is making no profit. By his own interpretation it is the rise in labour costs to a figure disproportionate to the rise in commodity prices which has defeated him. Fifty-five years ago, the problem before him was how to meet falling prices, and he resolved it by the intelligent application of scientific discoveries concerning his business. To-day, the problem is how to counter the effects of rising costs, and Mr. Baylis may well be excused if, at the sunset of a remarkable career, he elects to leave the solution of it to the ingenuity of others. There are no epoch-making discoveries in the realms of physical science, to-day, awaiting translation into farming practice, such as those of which John Prout and George Baylis availed themselves, but is it not possible that it is to the great advance of mechanical science, which has been the outstanding characteristic of the later years, that the seeker should look for aid in the present situation? If the farm-worker is to be remunerated on a scale more nearly approximating to that of the mechanic in industrial occupations—and in a country so small, and so highly developed industrially as Britain is, it is impossible to perpetuate the differences in the reward of rural and urban labour which once obtained—the farmer is faced

with the necessity of organizing labour in a way such as will give it a value approximating to that of the mechanic, the operative, and the miner. Engineering science has given agriculture the oil-engine applied to the operation of barn machinery, the tractor for work on the land, and the lorry for transport; the farmer has long enjoyed the use of the steam-engine for tillage operations and for threshing. But in very few cases has the size of the farming unit and the lay-out of the land within it been adjusted so as to give the maximum effect to the labour economies which are possible through their application. On John Prout's land, steam tackle was in use from the first, but the size of the farm was insufficient to secure the full value from it. Mr. Baylis operates, it is true, on a scale large enough in all conscience to remove this difficulty, and ploughing and cultivation by steam are practised by him to a considerable extent. But, throughout a large part of the year, soil conditions make steam-tackle useless for work on the land, and the steam-engine is not well adapted to the purposes of agricultural transport. The agricultural tractor and the lorry have been introduced too late for adoption by him, with the result that two-horse teams, to the number of a hundred and twenty or more, are engaged in the leisurely performance of ploughing and road haulage all through the winter months.

But if the restoration of Mr. Baylis's achievement in successful arable farming to a profit-earning basis might, conceivably, be accomplished by the further mechanization of his methods, the fact remains that he is losing money now, while the other example of profitable specialization, that of John Prout, no longer exists at all.

It is of interest, therefore, to turn to a third experiment, less valuable, perhaps, by reason of the smallness of its scope, but more so in that its inception is of more recent date, and that it continues in successful operation to-day.

Mr. Frederick Philip Chamberlain was the son of a Wiltshire farmer living in the Marlborough district, and, in the year 1894, he moved across into Oxfordshire and entered upon a tenancy of Crowmarsh Battle farm, in the parish of Benson. The year is one of exceptional importance, for it stands out as a landmark in the economic history of agriculture. The official average price of wheat from the harvest of 1894 was 22*s.* 10*d.*, the lowest of the century, and in many markets individual samples sold below 20*s.* the imperial quarter. The farm had been occupied for upwards of a hundred years by succeeding generations of the same family, which was finally submerged under the wave of depression which swept over the great corn-growing districts at this time. It is 550 acres in extent and entirely arable, except for two fields of permanent grass by the homestead, extending to 40 acres. His predecessor in the farm had cultivated it upon the local system of corn and stock—bullock-feeding and hurdle-sheep—but when Mr. Chamberlain went to Crowmarsh Battle he abolished the sheep and started a milking herd of some 50 or 60 cows. The only other live-stock was a stable of 10 horses.

After an experience of some fifteen years, certain facts concerning his system of farm management began to impress themselves upon Mr. Chamberlain's attention. He came to realize that, in effect, his enterprise had divided itself into two sharply defined parts, the one

having no relation to the other. His homestead lies at one end of the farm, and from it the land slopes away up the hill, and with the consequent difficulty of getting the dung-cart on to the remoter land, he had evolved a system under which the grassland near the buildings and about one-third of the arable land beyond it constituted one unit, farmed in conjunction with the dairy herd. A rotation of crops was pursued, designed mainly for the maintenance of the herd, and the manure from the cow-stable was applied exclusively to this part of the farm. The remaining two-thirds of the arable land constituted another unit, farmed entirely for the production of crops for the market—grain, straw, and hay —the whole of the produce being sold, and the fertility of the soil being maintained exclusively with artificials. Mr. Chamberlain set himself to consider the financial results of these two enterprises. He argued that if it were possible to farm so much of the land without livestock, without cleaning crops, and yet without any apparent deterioration and with satisfactory financial returns, why should he not extend the system to embrace the whole of the farm? Cow-keeping was a harassing business; it locked up a good deal of capital; it required much organization; it involved work on seven days a week and for fifty-two weeks in the year. Were the profits in any way commensurate with this investment of capital and labour when contrasted with the smaller requirements, in these respects, of the simpler system in practice on the rest of the farm? Mr. Chamberlain had been brought up to realize the fundamental importance to the farmer of a record of farm operations and their costs and returns. 'A farmer should be so far as possible a chemist and a botanist, but

above all he should be an accountant.' When, therefore, the question of dairying *versus* crop-production for the market first challenged his attention, he was in a position at once to compare the financial results of the two systems. He found that there was practically nothing in it either way, that the extra return for all the organization involved in the dairying business was practically negligible, and his decision was quickly taken. In 1909 the herd was sold, and from that year onwards to the present time the farm has been managed exclusively for the production of saleable crops, without live-stock of any kind except for the horses required to supplement mechanical cultivation.

Mr. Chamberlain's system of specialist arable farming is identical with that of Mr. George Baylis in its objectives and principles. He aims at the production of arable crops for sale off the farm; he relies upon artificial manures and the turning-in of clover-root to maintain soil fertility and humus; he trusts to a fallow to preserve the cleanliness of the land. But his practice diverges somewhat markedly from that of Mr. Baylis in several important directions. In the first place, he follows no crop rotation. The cropping of any part of the farm (the word 'field' cannot be applied, for practically the whole of the land is without internal fences) is determined solely by the nature of the soil and the cleanliness of the land. Thus, the cultivation of wheat is confined to the stronger land at the foot of the hills, but two white straw crops and even three are taken, commonly enough, in succeeding years on the same land. In the second place, Mr. Chamberlain has never found it necessary to take a complete bare fallow. The

crops grown include, besides wheat, barley, and oats, a few potatoes and a leguminous crop to be made into hay. Cow-grass clover occupies the largest acreage amongst these, but hop trefoil and vetches are also grown, and occasionally sainfoin. After the hay harvest, the land is immediately broken up and fallowed, and although the cleaning effects of this bastard or summer fallow vary in their efficiency according as the late summer is favourable or unfavourable to cleaning operations, they have never failed entirely. After thirty-six years the land is as clean as the requirements of profitable farming—as distinct from so-called 'good' farming—could call for.

In the third place, Mr. Chamberlain relies to a greater extent for the execution of tillage operations upon mechanical power. The horse equipment at Crowmarsh Battle is some 50 per cent. less, *pro rata*, than that of Mr. Baylis. Until the end of the year 1926, Mr. Chamberlain depended upon the hire of steam-tackle for ploughing and cultivation; then two tractors were purchased, two horses were sold, and the hire of cable ploughs was entirely superseded. Tractor implements for all purposes of tillage were purchased, a tractor reaper-and-binder for harvest and a tractor sweep-rake for gathering the hay.

Lastly, Mr. Chamberlain is making profits to-day. They are not sensational, indeed they are inadequate as a fair return on capital and management, but the balance is on the right side.[1] The suggestion is that such greater success as he is enjoying at the time, by contrast with the financial experience of Mr. Baylis, is

[1] C. S. Orwin, *Another Departure in Plough Farming* (Oxford: Clarendon Press), 1930.

due to the greater extent to which the mechanization of his operations has been carried. Not only is his horse-labour force so much less, but his manual labour staff is also materially lower, having regard to the greater degree of intensity of his farming, for Mr. Chamberlain is a potato-grower and a fruit-grower on some parts of his arable land. He himself is convinced of the economies introduced with his tractors and tractor implements, and his opinion is fortified by the evidence of his account books.

To indicate the full possibilities of profit-making under the system of continuous crop-growing for the market, a fourth example may be quoted, drawn from a small-scale experiment which has been in progress in Hampshire for the past fifteen years. In the year 1914, the Trustees of the Lord Wandsworth Agricultural College at Long Sutton, between Basingstoke and Alton, came into possession of a farm, very foul and in poor condition. Two of its fields, Stevens Field, 27 acres, and New Close, 11 acres, which joined each other, were in arable cultivation, and consisted of a strong loam on about five feet of drift clay, overlying the chalk. They had every appearance of being thoroughly farmed out. The only chance of cleaning Stevens Field lay in a bare fallow, and in the summer of 1915 it was thoroughly cleaned by steam cultivation. So good a job was made of it, that weeds were no trouble for the next twelve years, but in 1928 the cleaning process was repeated. New Close was in better condition as regards weeds, and a spring cleaning in 1915, before seeding with barley, was sufficient.

The cropping of these two fields during the past fifteen years has been as follows:

Year.	*Stevens Field.*	*New Close.*
1915	Fallow	Barley
1916	Wheat	Giant Sainfoin—2 cuts taken off
1917	Clover	,, ,,
1918	Wheat	,, ,,
1919	Winter Oats	Oats
1920	Vetches—½fed, ½cut	Oats and Vetches—cut
1921	Wheat	Wheat
1922	Winter Oats	Barley
1923	Seeds	Peas and Oats
1924	Wheat	Winter Oats
1925	Barley	Clover
1926	Seeds	Wheat
1927	Wheat	Oats
1928	Fallow	Seeds
1929	Wheat	Wheat

No farmyard manure has been applied to either field in any year of the period, nor had there been any used for a long time prior to 1914. Small quantities of artificials have been applied—basic slag, kainit, and nitrogenous manures to Stevens Field, and the same, with some superphosphate as well, to New Close. All operations on both fields have been costed and recorded very carefully throughout the period, and during the fourteen years, 1915–28, the following quantities of produce were removed:

Produce.	*Stevens Field. Tons.*	*New Close. Tons.*
Corn	8	7
Straw	8	6½
Hay	7½	14½

According to the accepted theories of good farming the land should have been completely run out by this time, but in the autumn of 1928 both fields were drilled

with wheat, no manure applied, and they yielded at the harvest of 1929—Stevens Field, 296 sacks (11 sacks to the acre), and New Close, 110 sacks (10 sacks to the acre). The corn was described by the miller as 'a very nice lot', and was purchased by him for 44*s.* 6*d.* the quarter. The accounts for the two fields were thus:

LORD WANDSWORTH AGRICULTURAL COLLEGE

Costs and Returns of Wheat, 1929, after 15 years of Continuous Cropping, without Sheep or Farmyard Manure.

	Stevens Field. *27 acres*	*New Close.* *11 acres.*
COSTS:	£ *s.* *d.*	£ *s.* *d.*
Cultivations, seed and sowing	108 15 10	38 10 7
Harvesting, thatching, and threshing	54 0 0	22 0 0
Total Cost	162 15 10	60 10 7
Cost per acre	6 0 7	5 10 1
RETURNS:		
Corn	(148 qr. @ 44/6) 328 6 0	(55 qr. @ 44/6) 122 7 6
Straw and Hulls	110 0 0	33 0 0
Gross Returns	438 6 0	155 7 6
Gross Returns per acre	16 4 8	14 2 6
Net Returns per acre	10 4 1	8 12 5

Nothing has been included in the costs for rent, nor, in the Stevens Field account, for a share of the cost of the bare fallow. But the rental value of arable land of this character, at the 500 ft. level and situated seven miles from a station, cannot be much, nor would the cost of

fallowing the field, spread over a period of thirteen years, add very much to the total expense. In fact, the figures can be taken pretty well at their face value, and they are sufficiently striking, whilst it should be noted that the year 1929 was not exceptional, for profits have been made on each of the fields in every year since 1914.[1]

Do not these experiments, continued over a long series of years in each case, and covering times very difficult for farmers, suggest the need for a new heart in agriculture? In manufacturing industry processes and plant become obsolete, as better are devised, and it is accepted that they must be jettisoned. Is it to be assumed that alone in the age-old agricultural industry finality in progress has been reached at last? Is it certain that all the lessons of natural science have now been learnt and applied; that every possible advantage has been taken of modern invention; that the modern science of industrial organization cannot contribute something to the solution of latter-day difficulties? Can nothing other than State aid, in one form or another, suffice to save the ploughland farmer from extinction? Or is it possible that there are still avenues unexplored which may lead to success along paths hitherto untrodden; that by shaking itself free from the shackles of a great tradition, and by reconstructing itself in the light of new knowledge the English farming industry may rise again from the ashes of a former greatness? These are the questions which must now be considered.

[1] From a Report furnished by the courtesy of Mr. C. M. King, manager of the Lord Wandsworth Agricultural College farms.

VI

THE RECONSTRUCTION OF AGRICULTURE.

I

WHILE it is no more than true to say that there are no serious critics of the technique of English farm management as evolved to-day in the various systems of farming in practice throughout the country, many may be found who are unconvinced of the strength of an economic organization which places the conduct of the industry in the hands of a multitude of small capitalists, operating small units of land with small staffs of hired labour. Criticism follows two lines, the one exactly opposed to the other.

Many people, seeking to diagnose the decline of rural industry and to prescribe the remedy, have turned their eyes abroad and have come face to face with an economic structure conceived on even smaller lines in the peasant farming system, so widely diffused through many continental countries. Arguing from its obvious suitability in the circumstances in which it is manifested, these people conclude that the regeneration of the English countryside is dependent upon the evolution, up and down the country, of an extensive peasant community, and this quite regardless of the limiting factors of soil, climate, and economic environment. These are the exponents of the Small-holdings Policy, and it numbers amongst its adherents social reformers of all classes, and most members of the older political parties. They have been successful in securing a considerable amount of legislation and the expenditure of much public money for the furtherance of their objects.

At the other extreme of those who look for some reconstruction of the present economic order in agriculture, is a much smaller group, which draws its conclusions more from the happenings in the organization of industrial life at home than from manifestations of farming in foreign countries. Its members argue that just as progress in manufacturing industry has been characterized by the continuous expansion of the size of the unit of organization and the steady absorption of the small-scale operator, so progress in farming must follow the same path, and the peasant tilling his plot with a plough team must be reborn as the mechanic handling his tractor or his steam-engine as a member of a 'factory' farm. The advocates of this policy have made few converts; there is too much reason about it, and too little sentiment; too much concentration on economic gain and too little on political advantage.

(a) *Small Holdings. The Family Unit.*

It is important to have a clear understanding of that which is comprised in the term 'small holding'. Too often its application is limited in the minds of users to farms not exceeding a certain acreage, and whilst it is clear that for statistical purposes some size limitation must necessarily be implied, it is obvious, equally, that, in the economic sense, there is no essential connexion between the extent of the farming unit and its organization as a 'small' holding. The classification must be one of the organization for production, not one of acreage, and while the official *Agricultural Statistics* deem all holdings to be 'small' which do not exceed a maximum of fifty acres, the unit for economic study is that which may be encompassed, entirely or in the main, by the labour

of the farmer and his family, and its size will vary, between wide extremes, according to the type of farming pursued. Thus, for statistical purposes, an intensive market-garden enterprise of fifty acres, calling for the investment of much capital, and giving employment to a considerable labour-staff, is a small holding, and an upland sheep farm of several hundred acres, managed by the farmer and his sons, is included in the category of the largest farms; in the economic sense, the former has the character of a large holding, and the latter that of a small holding.

The term 'small holding' is misleading, therefore, as the definition of this unit of agricultural organization, and an impression more accurate is conveyed by the term—'the family-labour holding'; or, more briefly, 'the family farm'.[1]

The family-farmer is manifested mainly in two types. In the older countries of the world he survives as the descendant of the self-sufficing farmer of all time; in many of them, particularly in the Orient, he is still nothing more than a self-sufficing producer, nor have

[1] In the interpretation of the Size of Holdings figures contained in the *Agricultural Statistics*, much care is needed. The figures stand as a record of the number of holdings of fifty acres or less at the given date. But it must not be assumed that these numbers represent the equivalent in small farmers engaged, full-time, in the cultivation of the land. As stated above, they include a certain number of holdings which are in no economic sense 'small', and they exclude many which are; they give no indication of the number of holdings held in one occupation and aggregating in some cases several hundred acres; they include all the holdings occupied by village tradesmen and others, which are entirely subordinate to their main avocations. An investigation of the published returns from a particular district, made by Dr. J. S. King, shows that a correction of the figures to eliminate all holdings other than those occupied by *bona-fide*, full-time family-farmers, resulted in a 66 per cent. reduction of the apparent total. See also E. Thomas, *op. cit.*, pp. 25–30.

his methods of farming undergone much change from earliest times. In the older civilizations of the Western hemisphere, he may have proceeded a little farther; his methods have acquired something from the spread of knowledge; his position may have been improved by the exploitation of a market for some of his produce. But in the essentials, he is the same wherever manifest; he cultivates his holding with a minimum of capital, a minimum of education, a wealth of traditional experience and manual skill, and an utter prodigality of manual labour. In the countries of the East, the reasons for the persistence of the peasant-farmer type are obvious; the absence of education, the lack of money, the slowness of the spread of industrialism, the independence of the foreign market, those things, amongst others, have militated against any drastic change in the traditional land system. In the countries of the West, the peasant type, judged by English social standards, persists as the most striking anachronism in modern civilization, to be explained, in some countries, by the approximation of his status to that of the oriental; in others, by land hunger arising from an expanding population in an inelastic land; in others, again, by the deliberate action of the State arising from a desire to retain an element of the population which is stable and conservative by nature, and frugal and industrious, to an intense degree, from necessity.

The second prevalent type of family-farmer is the product of the new worlds. The farm of the pioneer must always be a one-man enterprise; he takes up as much of the uncharted wilderness as he thinks that he and his can till. But the great extension of new-world farming remained impossible until the advent of labour-aiding

machinery, and the last fifty years has witnessed the evolution of a very different type of family-labour holding—a farm on which labour is lavished as in the old world, but one the bounds of which are set only by the amount of land which one pair of hands can encompass when raised to a power almost inconceivable by harnessing them to the latest mechanical inventions. The introduction of the reaper-and-binder was of no interest to the continental peasant on his thirty acres of mixed cultivation; its cost was as much, probably, as his whole capital equipment, and he could have found useful work for it for about one day in the year. To the prairie farmer it meant the immediate possibility of a profitable extension of his farm; the land lay open all round him, and if the new machine could cut and tie ten times as much corn as he could cut and tie by hand, the area of production under his control could be extended tenfold at a cost of little more than one of these implements. The farm tractor, doing the work of horses at six times the speed, marked another advance for him, and to-day, the invention of the combine-harvester, a machine which drives its way through standing corn leaving sacks of threshed grain, and stubble, in its wake, has raised the extent of the one-man farming unit in the great corn-producing countries to a figure which would have been unbelievable even a few years ago.

So these are the two principal types of family-farmer —the thrifty, frugal peasant-cultivator of the old world, spending himself in a round of endless toil upon a small plot of land, and the pioneer of the new worlds working, probably, at equal pressure, but harnessing to his hand every mechanical device by which he can extend the scope of his operations. There are other types, of course, and

one which is of particular interest in this country will be dealt with presently. The key-note of them all is a standard of life as far removed from everything for which the organized labour movement is striving as could well be imagined, but, this notwithstanding, it is one which engenders, at the same time, qualities and habits which go to build up a character the value of which can never be set off merely by lessened hours of labour or by higher standards of reward.

It is the family-farmer of the continental peasant type whom the exponents of a Small Holdings Policy for England have in mind; no one, neither agricultural politician nor rural sociologist, has ever advocated State aid towards setting up in this country a type of farmer and of farming like those to be found in large numbers amongst the English-speaking pioneers of the Canadian prairies or of the Australian wheat belt. This is curious, for those men are our own kith and kin, speaking our language, reared in our own standards and ideals of life, educated, and apt to apply the lessons they have learned. If there is anything to be gathered from the experience and practice of other countries, it might have been supposed that it would be this type which would commend itself to the reformer rather than that which is represented by alien races still pursuing systems and practices which were discarded generations ago by rural England, as being no longer suited to the trend of her national economic development. But these sturdy sons of empire live and work in regions rather remote from the tourist track; their conditions of life make but little appeal to sentiment and to the imagination; their treeless expanses, wire inclosures and galvanized sheds produce no pictorial effects—nothing, in fact, to suggest

the mythical 'Merry England' which is inseparably united with the idea of 'back to the land' in the subconsciousness of the protagonist of peasant farming.

As regards England, however, the excessive population and the limitation of land rule out of any consideration, at the present time, the prairie type of family farm. It is the continental peasant system with its multiplication of workers and reduction of areas under their control, that the reformers, political and social, are trying to develop, and they have succeeded in getting both legislation and finance for their object. This attempt to re-establish a system long driven out from most parts of England by economic pressure, is an example of the strength of sentimental considerations in all that is connected with the land. The advance of the industrial revolution called for a complementary reorganization of farming to provide food for the growing urban population, and the peasant gave place to the capitalist farmer who, alone of the two, could avail himself of all that science and invention were doing to make possible the increase of production from the land. It is nothing to argue that the peasant persists in other countries; so do other ancient institutions such as polygamy, slavery, and ancestor-worship, and in considering the chances of successful transplantation of the peasant system, all the circumstances of its existence must be considered in relation to those of its contemplated new environment. Any crude comparison is almost certain to be fallacious.

Let us examine the conditions of continental peasant-farming in relation to the economic environment of the English agriculturist. Speaking generally, it may be said that over the greater part of England none of the

conditions under which the continental family-farmer type has been maintained and even fostered are to be found to-day. If we compare the economic history of England with that of the more industrially developed countries of Europe during the past hundred years it is at once apparent that France, Germany, Belgium, and Italy have been participating in a race for industrial expansion and agricultural development in which England had taken a long lead. For many years England had the field entirely to herself, and the exploitation of her unique industrial resources, bringing with it the rapid growth of population, obliterated the English peasant form of farming as being quite unable to furnish the food which the industrial population required. In the more industrialized of the continental countries the food-supply question was never so acute. None of them are so highly industrialized as this small island. There is a marked segregation of industrial and rural areas, and over great districts the sight of a factory chimney or the glare of a blast furnace are things unknown. Two things have resulted naturally, apart from that which may be attributed to State intervention. In the first place, the balance of rural and urban population has nowhere been so violently upset as in England, and nowhere else has the ability of the country to feed the town been taxed to the breaking point. In the second place, the absence of competing industries in the great peasant districts of the Continent has left the people undisturbed in their standard of life, and content with it. In England, comparison of urban and rural standards are inevitable, and they have resulted in a steady increase in the standard of comfort of the rural worker, which long ago reached a pitch higher than that of any

European peasant. Public opinion in this country, which to-day means urban opinion, is not content to allow the workers in an industry so great as agriculture to lag behind their urban neighbours in material wealth; the organizers of the Labour Unions realize the depressing effect of a mass of low-paid labour always seeking to enter a better market. And so, from one cause and another, the remuneration of rural labour on the large, capitalist holdings in England has reached a level by comparison with which the incessant toil of the peasant on a small holding offers no attraction in the alternative.[1] The enthusiasm for the small-holdings movement springs, as a rule, not from the agricultural labourer or the Labour leader, but rather from the politician, thinking of a stable population, and from the doctrinaire land reformer, arguing from false premisses.

The maintenance of the peasant farmer in some continental countries has, however, been deliberately fostered by the State. England, secure in her sovereignty of the seas, could watch the growth of a population parasitic on other countries with equanimity. In France and Germany, with sea routes open to them only with the goodwill of Britain, and with a lively fear of each other, the necessity for self-sufficiency in the matter of food and for the maintenance of man-power called for measures to restrict the free

[1] Last year an investigation of the economic status of the small-holder was made in a district of Germany, where 98 per cent. of the farmers are peasant proprietors. In most cases the farmer was found to earn less than his own paid labourer, and in all cases less than the wage of an ordinary industrial worker. To secure this reward the average farmer and his wife both worked at the rate of over 10 hours a day, Sundays included. (A. Münzinger, *Der Arbeitsertrag der bäuerlichen Familienwirtschaft. Eine bäuerliche Betriebserhebung in Württemberg.* Berlin, Paul Parey, 1929.)

import of food which would have jeopardized both. And so arose the tariff walls which have succeeded in making France self-sufficing and Germany nearly so, at the cost, of course, of the standard of living of their people. But their agriculture has been maintained.

The case of Belgium is different. Here there are two races, the one industrial, the other agricultural, occupying different parts of the country. The impossibility of feeding the one by the other was long ago realized, and Belgium is Free Trade in food just as England is. But this has not affected the life of the Flemish peasants, who live, a race apart, in a district apart, and in a manner apart from industrial Belgium, unmoved by the life that goes on beyond the limits of their own plots of ground.

Denmark, again, presents another aspect of the problem. Here is a country without manufacturing enterprise, with free trade, and composed almost entirely of a race of peasant proprietors. But it is the fact that Denmark has no industrial wealth which enables her to adopt a free trade policy, for she has nothing to protect her agriculture against. It is the home manufacturer for export, changing his goods for food and raw materials, who is the real competitor of the home agriculturist, and Denmark knows nothing of this contest. On the other hand, the absence of mineral wealth brings Denmark into the foreign market as a buyer of industrial goods, and for these she has nothing to barter except the produce of her land. And so she has built up a wonderful system, both of production and marketing, to exploit the English industrial market for certain food commodities, and in so doing she can point to an achievement which is an example to the world of the

application of brains and industry to making the most of very slender natural resources. But that said, all is said, and to suggest that Denmark's achievement may serve as a model for the future development of English farming is to wonder why the efficiency of the camel trains of the desert has never been realized by the directors of English railways.

It is in the production of grain that the severe handicaps of the peasant-farming system are most acutely felt. The family-farmer of the prairies escapes them by the extent of land available for his purposes and by the use of machines; the continental peasant cannot expand the area in his occupation, nor is it large enough to offer scope for labour-aiding machinery. Denmark, a purely agricultural country and one exporting food, has given up all attempts to grow her own cereal supplies, and Holland and Belgium have also recognized the advantage enjoyed by the large-scale operations of the prairie farmer. But nothing is more striking, as evidence of the disabilities of the peasant corn-farmer, than the recent history of Russia and Rumania. Here were two countries in which large districts were devoted to the production of export grain under a patriarchal system of large estates cultivated by wage labour. Operations were on a large scale, facilitating the use of machinery, and there was a large surplus production available for international trade. The seizure of the land by the peasants in Russia, and the expropriation of the landlords by the Government in Rumania, and the partition of their land amongst the peasants, had remarkable results, which deserve careful study by the advocates of an extension of the peasant system in an industrial country. The export of wheat from Russia in the five

pre-war years averaged 41,000,000 quintals, or more than double that of any country in the world; in the five years ending 1925 it had dropped below 2,000,000 quintals. And Rumania, whose pre-war average exceeded 13,000,000 quintals, exported no more than half a million in the same post-war period. In Rumania, too, the reversion to peasant production from cultivation by large estates has led not only to a reduction of average under wheat but also to a decline in yield. From an average, for the five pre-war years, of 16·7 bushels per acre, it had fallen, by 1929, to 12·5 bushels per acre.[1] There are, doubtless, many factors which contributed to these results, besides the break-up of the large farms, but that this has proved one of the most important is demonstrated by the measures now being taken by the Governments of these two countries to remove the disabilities of production under the peasant-holding system. Russia has a bad press, but an unprejudiced reading of the present agrarian situation seems to indicate that the idea behind the communal farms is the need for a higher production, which can be obtained only by large-scale operations. The Rumanian Government, less drastic perhaps in its methods, is seeking the same ends by attempts to organize societies for the co-operative ownership of machinery.

It is no use to argue that the small holder in this country is not expected to grow grain, that his energies should be directed to the production of fruit, vegetables, eggs, &c. Much can be said for this point of view, and if there had been more discrimination shown by the promoters of recent legislation there might have been

[1] David Mitrany, *The Land and the Peasant in Rumania* (London: Humphrey Milford), 1930, p. 343.

less criticism of their objects and achievements. For small holdings can and do succeed in Britain, and if their limitations are recognized, both of scope and of location, a good deal might still be done with them. The object of these remarks is to criticize only the ill-conceived policy, based on misinformed enthusiasm or on political expediency, which has led to the attempt to develop small holdings indiscriminately in every county of England, regardless of social history, farming tradition, and economic possibilities. At a later stage some attempt will be made to show what may be expected to be the future of family-farming in this country.

(b) *Large Holdings. The Factory Farm.*

The experience of the last half-dozen generations has been that social progress and material prosperity have been achieved hand-in-hand with the development of big business, and this is true, notwithstanding the earlier suggestion that industrialism may have developed too fast and too far.

Agriculture in the new worlds and under European management in the tropical countries of the old world, provides many examples of successful application of the principle of scientific management under the capitalist system, whether joint-stock or private. Sheep and cattle ranches on the grand scale, and intensive farming under the plantation industries of the East, suggest themselves at once. There is a marked tendency, particularly in some countries, for these great enterprises to break up into smaller units, and at first sight this might be taken as evidence in support of a differentiation between farming and factory management. But this evidence requires interpretation. In some countries,

Australia for example, the social policy of the State is antagonistic to the occupation of land in large areas, and the disintegration of the big estates is the result of legislative measures to give effect to it. In other countries the break-up of highly-organized capitalist farming is arising from the education of a native population, with a low standard of life, in the cultivation of commercial crops. Thus, it has been foretold by one of the pioneers of the great Malayan rubber industry, that in another generation the whole business will be in the hands of small native producers. Their methods of production may be crude, but their scale of operations depends little upon the services of capital, nothing upon those of management, and their labour costs are determined by the standard of a primitive people.

In England, neither of these conditions prevail Social legislation attempts to promote extension of the family-farmer class at the expense of the small capitalist farmer, but the greatest enthusiast for the small-holding movement does not contemplate the ultimate population of the countryside with this class of farmer, and there is no mass of low-paid wage labourers likely to break in upon a capitalist organization. On the contrary, the greatest problem to-day is that of how to maintain the standard of living of the mass of the population, and this will never be done by a reversion to small scale production.

In the light of past experience, however, it has to be admitted that there is no sign of any movement in this country in the direction of farming on factory lines. It is a most remarkable fact that, taking the country as a whole, there has been practically no change in the effective size of holdings since the days when farms were first

consolidated. In all the counties of England where arable farming predominated, which correspond roughly to the districts enclosed under the Hanoverian inclosure movement, farms were blocked out and equipped, roughly between the years 1750 and 1830, and so they have remained, unchanged for the most part, until the present day. There was a certain range of size, but in few cases did the area under one control extend beyond 1,000 acres of cultivated land. In those parts of England and Wales where the consolidation of holdings was effected in earlier times, when subsistence rather than commercial farming was the object, farms were mostly smaller, and they too have remained with little change up to the present day.

It was natural, perhaps, to find a static condition until comparatively recent times. The application of steam for the generation of mechanical power of all kinds, whilst introducing a revolution in manufacturing industry, had but little effect on farming. The steam-engine appeared in the fields at certain seasons of the year as an aid to cultivation, and the threshing-machine displaced the flail in the farmyard. But, for the most part, the farmer was still dependent on his horse-teams for the bulk of his work, and so the farming unit was based upon a power-unit which has continued unchanged from earliest times right up to the early years of the present century. The idea of large-scale organization, with the departmentalization of management, might have been carried out notwithstanding, but in the absence of any revolution in what may be termed the farmer's manufacturing methods, such as that which had been introduced in urban industry, it was natural for the scale of operations on the land to continue very

much as it was when farming for the market first began to be evolved out of the ancient self-supplying system. Even the great developments in labour-saving machinery, the invention of the reaper-and-binder and of all the machines which have made haymaking a mechanized instead of a manual process, could have no influence on the size of the farm, for all of these were inapplicable, at the time of their introduction, to use with the steam-engine, the only type of mechanical haulage then available, and they were designed essentially as horse-drawn implements. Even the earliest steam-engine used for tillage and threshing operations, the misnamed 'portable' engine, was not designed for self-locomotion, and it had to be drawn from place to place by the farm horse-team. What might have been achieved in the way of the industrialization of farming by the steam-engine, had arable farming continued to prosper, cannot now be conjectured. An eminent French rural economist, Léonce de Lavergne,[1] who made a pilgrimage of British farming in the years 1851 and 1852, when 'le high farming' was approaching its zenith, and beside it the still primitive French farming seemed nowhere in the picture, found reason to believe that steam would bring about another revolution in English agriculture, and would make it more and more industrial:

Tout cela constitue sans doute une immense révolution. La culture change de nature, elle devient de plus en plus industrielle: chaque champ sera désormais une sorte de métier, travaillé dans tous les sens par la main de l'homme, percé en dessous de toute sorte de canaux, les uns pour écouler l'eau, les autres pour apporter l'engrais, et qui sait?

[1] Lavergne, M. Léonce, *Essai sur l'Économie de l'Angleterre, de l'Écosse et de l'Irlande.* Paris, 1845, p. 225.

peut-être aussi pour conduire de l'air chaud ou frais suivant les besoins, et offrant à sa surface les transformations les plus rapides; la vapeur déroule, sur les verts paysages chantés par Thompson, ses noires spirales de fumée; le charme spécial des campagnes anglaises menace de disparaître avec les pâturages et les haies; . . . Il y a là plus qu'une question agricole, l'ensemble de la société anglaise paraît en jeu. Il ne faut pas croire que les Anglais ne fassent pas de révolutions, ils en font beaucoup, au contraire, ils en font toujours, mais à leur manière et sans se presser; ils ne tentent ainsi que ce qui est possible et véritablement utile, et on peut être sûr qu'en fin de compte le présent aura complète satisfaction, sans que le passé soit tout à fait détruit.

But the agricultural depression which set in during the next decade, and the reduction of the arable area which was the consequence of it, prevented the fulfilment of his vision.

The engrossment of farms under conditions determined by the old power unit would hardly have resulted in economies in production such as are associated with large scale operations under the factory system. A pair of horses are required for each fifty acres of arable land, and the addition of a thousand acres to any enterprise would have required an addition of the full equivalent complement. The same is true of manpower, and it is only under the head of management that possible economies might have accrued. Here and there large farming businesses have been developed by individuals, but in few, if any, cases has the organization of control borne any resemblance to that of the big manufacturing business. However big the farming unit may have grown, it has remained a one-man enterprise. There has been no departmentalization under skilled

departmental managers, but everything has been done under the master's eye, with the assistance of a handful of labour overseers, themselves nothing more than promoted labourers. And with the passing of the genius who added farm to farm and collected a big area of land into one business, the enterprise has broken up again more or less into its component parts. Without the division of labour and the collective responsibility for management by a group of trained managers, it is impossible to secure the continuity of a big business.

Unless, however, there is something inherent in agriculture which condemns it for all time to be a one-man business, whether that of the family-farmer who is master and man combined, or that of the small capitalist directing without qualified assistance his larger farm, it seems likely that the time has come when the recent advances made by engineering science have made it possible for the farming industry to carry through a reorganization designed to give it, for the first time, all the material advantages appertaining to large-scale production. The plaint of the farmer in all the districts devoted to farming on the larger scale is that the industry will not bear the rate of wages appointed by law to be paid to his men. These wages, admittedly, are based upon rates obtaining in other industries; farming under the hundred-year-old system of organization which prevails will not stand for them; something is needed, and quickly, to increase the output of the unit of labour and so to make it worth the money.

This can only mean further mechanization. The application of the internal-combustion engine as a source of power for farm operations seems to have altered the whole outlook for labour organization, and

to call for a complete reconsideration of the size of the farming unit in the districts of arable farming. It is calculated that a steam-ploughing and cultivation set cannot be given full-time employment on less than 2,000 acres of arable land, but there are operations which steam-tackle cannot perform, and seasons of the year at which it cannot work, and power-farming in its most economic form requires the addition of the agricultural tractor to the farm equipment. The steam-engine can perform most operations concerned in the tillage of the soil; the agricultural tractor can do all these and it can pull the reaper-and-binder, the combine-harvester, the haymaking machinery, in addition. Even so, its full uses have never been properly exploited, for whereas for tillage operations special implements have been designed for use in connexion with it, the demand for the more expensive machines, such as those for harvesting and haymaking, has never been sufficient to stimulate special designs, and the old horse machines are adapted and hitched up to the tractor as best may be. Again, there is another point, namely the size of fields, for it must be remembered that in most parts of England where arable farming predominates, not only have the farms themselves been laid out on the basis of the horse-labour power unit, but so also have the fields which go to make up the farms. In some places fields of fifty acres upwards, affording full scope for mechanical operations of all kinds, are to be found, but more generally the size and shape of the arable enclosures impose severe handicaps upon the use of machinery. In size, they involve the tractor or the steam-plough in an unnecessary number of turns, and are sometimes so small as to entail journeys, otherwise unnecessary, from

job to job. In shape, they are often so irregular as to leave awkward gores to be finished off with horse-labour at much loss of time. All this is without reference to the immense wastage of land and labour represented by the tens of thousands of miles of superfluous hedge-rows, spoiling productive land, harbouring weeds and vermin, shading the corn crops from the ripening sun, employing men in unproductive labour, and restricting the free movement of implements. Hedges have obvious uses round grass fields for the protection and confinement of stock, but in every county of England hundreds, if not thousands, of acres of arable land are withdrawn from productive use to provide unwanted field divisions.

Even the gateways giving access to the fields remain, as to size, what they were one hundred years ago, or, for that matter, probably a thousand. Some of the more modern horse-drawn machines, such as the manure-drill and the sweep-rake, cannot be taken through them without dismantling, and for the purposes of mechanically-propelled machinery they are merely obstructions.

However, the case for large-scale operations in agriculture does not rest solely upon the arguments for efficiency in production. As has been pointed out, agriculture is more than an alternative business; it affords a life to those engaged in it to an extent which few if any other industries can claim to do. One of the severest disabilities of a farming system organized mainly under small capitalists is that it affords no hope of advancement to the wage worker. The great majority of hired men have reached the summit of their opportunity before they are thirty. Without division of labour, without scope for departmentalizing, what

chance is there for the more able of the men to rise to positions of trust and responsibility in which they can command wages comparable with those paid to foremen, shop-stewards, and the like, which are common in large-scale industrial enterprise? It is that lack of opportunity which accounts for the big migration from farming into the towns of men between the ages of 20 and 40, and which leaves agriculture an industry carried on, in the main, by lads and elderly men. It is this which has led so many land reformers to their advocacy of small holdings, as providing a ladder by which the thrifty working man may rise in the social scale.

It is not only the worker for wages who is handicapped by the small capitalist system. Agriculture is the only great industry offering no chance to the salaried manager; even on the larger farms there is no opportunity for devolution of management, and so there is no encouragement to the farmer's son, or to other young men, to take advantage of educational facilities now available in all parts of the country, and to qualify themselves for paid employment. Only as a working farmer on a small holding, or as the possessor of a few thousand pounds of capital, can a man enter the farming industry in any capacity other than that of a manual worker, so that the industry is closed to all the young men of brains and ambition who are looking for the chance to carve out careers for themselves.[1]

As an argument, the case for the organization of farming on factory lines is a very strong one. The advance of engineering science, the growth of scientific management, suggest the possibility of a reorganization

[1] See A. D. Hall, *Agriculture after the War* (London: John Murray), 1916, p. 49.

of farming that has never yet been tested. Nowhere has a farming unit been laid out to give full scope to mechanical aids to labour, nowhere has the science of specialization in labour and management been applied. Whereas the methods advocated by those desirous of a reversion to small-scale agriculture have been adopted, under State aid, in every county of England, with negligible results, in no instance has the State or the business man attempted to test what might be achieved in farming under the system recognized as best in modern industry. For the few examples which may be found, up and down the country, of large-scale operations are of no value as an index of what could be expected. In no case has there been an attempt at the full equipment of an adequate area with mechanical power; in no case where power is employed has the land been laid out to secure maximum efficiency in its use; in no case have men been trained to be specialists, as agricultural mechanics, in the care and management of agricultural machinery; in no case have farms been equipped with machines designed for the sole purpose of operation by mechanical draught; in no case has there been departmentalizing of technical management; in no case has there been any organization of control under an expert financial manager, reviewing the work of his technical departmental chiefs in the light of the evidence of a complete system of factory, or cost accounts. Big scale farming in England still remains to be tried.

VII

THE RECONSTRUCTION OF AGRICULTURE

II

FOR the uninstructed outsider all the clamour about the depression of the agricultural industry, raised so generally in the last year or two, can have only one significance; there is nothing sound in rural England, farmers the country over are faced with insurmountable difficulties. But those who are aware of the immense diversity of the business, and who realize the impossibility of generalizations concerning it, know that not all branches of farming are affected equally by current economic conditions, that some, in fact, may be said hardly to be affected at all. When we examine the state of the more important farming systems developed in England to-day, the most striking thing disclosed is that the districts in which difficulties are greatest are those in which that which is described as 'mixed farming' prevails, and, on the other hand, those farmers who are putting up the best fight are found in districts where production is more or less specialized, and concentrated on one or two commodities. Thus, in most of the arable districts of England producing barley, wheat, and oats for sale, and green crops for consumption by cattle and sheep for the production of beef and mutton, or of store-stock, the low prices prevailing have produced something of a crisis. On the other hand, throughout the grass counties, where concentration on dairying, whether for the sale of liquid milk, milk for manufacture, or for domestic cheese production, is the farmer's

principal concern, the whole-hearted concentration on the one commodity, in this case a naturally-protected one, seems to have resulted in the maintenance of a sounder position. This is generally admitted, and evidence of it is forthcoming from the way in which men have flocked into milk-production of recent years, to the extent that fears are expressed for the future of the dairying industry through an approaching over-production.

The grazing industry is another branch of farming which has become highly specialized. Over a big district of Northamptonshire and Leicestershire, on Romney Marsh and the adjacent alluvial flats, on many marshland areas all round the coast of the country, the industry of meat production, beef and mutton, is carried on by specialist graziers who have brought their technique to a very high pitch by single-minded concentration.

In another important branch of farming, the raising of store-stock, both cattle and sheep, this tendency to specialization is also seen. It is true that much of the store-stock production is the result of some of the mixed-farming systems, but over wide areas it exists developed as the mainstay of the local agriculture, and from these, as from the dairying districts, come no complaints of serious hardship. The same is true of the market-gardening and of the fruit-growing industries. Here are forms of farming specialized to a high degree, and in general they are holding their own.

With exceptions of the characters above noted, the whole of the farming of England may be said to be conducted on the mixed-farming plan, and farmers, in the main, are convinced that safety lies in the diffusion of their activities over many things. They argue that if

corn prices are depressed, store-cattle or meat may be selling well, and they expect that on balance they may have their reward. In view of the experience of the more successful of their countrymen to-day, in view of the practice of their overseas competitors, has not the time come when they should take stock of their position? Is it not possible that corn-growing at present prices is unprofitable only through the necessity of subordinating it to the necessities of other branches of husbandry, and that if the problem of the production of cereals could be divorced from all other alliances and entanglements, the means might be revealed by which to bring costs and returns once more into a proper ratio? Who can say what is the cost of wheat-growing when it is dependent upon the cost of a previous turnip crop, on the cost of turning straw into manure, and on other incidents of an elaborately interlocking rotation, the economics of the component parts of which can never be disentangled? In the days of low prices for beef cattle, the bullock feeders of Norfolk were complacent in the belief that what they lost on feeding was returned to them in the corn grown by the extra fertility brought into the soil through the yard manure. Was it? Was there one among them who ever attempted to test the theory by ascertaining the cost of this manure and by testing the economics of this elaborate system for the maintenance of fertility against the direct simplicity of the one evolved and practised so successfully by Mr. Prout, by Mr. Baylis, by Mr. Chamberlain, and by the Lord Wandsworth Agricultural College? 'Whatever is, is good', but this is not to say that nothing can be better. One of the wise maxims of the farmer advises him constantly to have his eye over his neigh-

bour's hedge, but if his neighbour is losing money it may be better for him to direct his glance inwards and to review his position, not so much in the light of the experience of ages, but in the light of all that the present has to show him.

There is much that can be said for this theory of specialization. Considering first the question of production, it enables the farmer to concentrate the whole of his attention on the method by which to bring forth the one or two commodities with which he is concerned, at the lowest possible cost. As regards crops, the problem of tillage would present fewer difficulties, for it would be independent of the necessities of other departments of the farm. It is common talk in some parts of the country that barley cannot be grown without the 'golden hoof'. The doctrine is that the land requires the consolidation of the sheepfold on the turnip crop as an essential preparation for barley. But has this theory ever been tested? Is it really to be believed that such consolidation as goes on is not dissipated at once as the plough goes through the soil behind the sheepfold? Does not every barley-grower know the difficulty of securing a proper tilth for the seed-drill following on the ploughing-up of these sticky folds in the late spring? Is it not more probable that the apparent benefits of sheeping are manurial only, and is any one prepared to say that these could not be realized more cheaply by other means? All of these are problems which have never been investigated, indeed it is not too much to say that they have never even been stated.

The suggestion of specialist corn-growing is associated in the minds of some with ranching methods for a low

standard of production, but this is not necessarily involved. The Rothamsted experiments have shown that by continuous corn-growing without manure the yield of the land stabilizes itself, ultimately, at about 16 bushels per acre, and whatever increase may be possible above this natural irreducible minimum is merely a question of prices. The application of fertilizers will increase the yield at a certain cost, and it is the business of the farmer to adjust his expenditure on fertilizers, within practicable limits, to the prevailing price-level. The crops of Mr. Baylis's farms are the best on similar land in his vicinity; Mr. Prout turned farms almost derelict into productive corn land; Mr. Chamberlain's crops are as good as his neighbours'; and the yield from the Lord Wandsworth Agricultural College fields has been more than doubled under this system of concentrated corn-growing.

But this idea of greater specialization is applicable not only to corn-growing. The 'mangold gardens' which are common in some parts of the country provide an example of another direction in which the principle might be extended. A field is given up permanently to the mangold crop; it is laid up by the plough in the autumn after the crop has been lifted, and, mellowed by the winter frosts, needs only to be harrowed down in the spring to be ready for the seed-drill. Cultivating costs are reduced to the bare minimum; the land is always ready at the right season, always clean, always in good heart. It is possible that the practice could be applied with economy to such marketable crops as sugar-beet, so that when the beet-lifter and other labour-saving machines have been perfected, specialist sugar-beet farms might be organized in the neighbour-

hood of sugar-beet factories. In many districts of mixed farming it may be questioned whether corn should be grown at all, and whether the land should not revert almost entirely to grass for specialization in dairying, stock-raising, or stock-feeding. On the farms where the nature of the soil makes corn-growing expensive and uncertain, is it wise or necessary to cultivate it? Would not there be an elimination of waste, or an economy of cost, by concentration on grass husbandry of one form or another, relying for the supplies of such straw as might be needed upon the specialist corn-growers of other districts?

There are other directions, also, in which the idea of specialized production calls for consideration, but these may be left to suggest themselves. An examination of the *Agricultural Statistics* shows that every crop enumerated, with the exception of lucerne, hops, and sugar-beet, is grown in every county of England and Wales. If there be any virtue in the specialist idea, there is ample scope, clearly, for its application.

But it is not only in production that the case for specialization can be argued. The advantages of concentration on the output of one or two commodities must apply with equal force to distribution. The inefficiency of the farmer in the marketing of his produce is an accusation frequently made. However this may be, and there is certainly some evidence for the charge, his inefficiency must be intensified as the number and variety of his products increase. The producer of one commodity has only one market to study; the organization of production, by districts, on a commodity basis should facilitate combination for bulking and grading such as is practised in all the countries exporting

farm produce, and such as has proved so impossible to organize amongst the mixed farmers of Britain.

Again, specialization in farming might be expected to reduce the cost of working capital. The sale of Mr. Chamberlain's dairy herd, and the complete concentration by him on crop production, liberated some £1,300 of capital without any loss of profit, and on many mixed farms, even on those relatively large, there must be much money locked up in implements and plant which is not full-time employed. On the smaller holdings it is notorious that the weight of capital invested in this way is heavy.

Nor is the problem one which concerns only the farmer. The work of those engaged in scientific and economic research into farming problems would be applied more efficiently, in fact it is already, to systems of farming limited in the range of their products. In economic study, particularly, the isolation of efficiency factors from the tangle of interlocking operations is always difficult and often impossible, so that the ordinary tests and controls furnished by accountancy and statistical examination, which are the life-blood of factory management, can be applied in mixed farming only with reservations and safeguards. In scientific research it is amongst specialists, such as fruit-growers, hop-growers, flockmasters, and the like, that the most satisfactory fields for investigation are found.

Specialization is well worth careful consideration by British farmers. Wherever one finds a really successful man there is a big element of specialization, and one does in general get the impression that he has succeeded because of this, and that he might have done even better had he lopped off his half-dozen other activities. There is no question that

the specialist can make far better use of the experimental station than the non-specialist; he knows exactly what he wants and research workers are able to try and give it to him.[1]

The general argument for an extension of specialization in agricultural production is independent of the size of the farming unit. Some forms of specialist agriculture are particularly adapted to the circumstances of the family-farmer, or may be practised by him at least without handicaps imposed by the small scale of his operations. Other forms call essentially for large scale organization. And although it will be apparent that under the development of the scheme the tendency will be towards the elimination of the medium-sized farmer, who to-day forms the largest class as regards acreage occupied, room could be found in the production of certain specialities for the preservation of representatives of this class, if desirable, in numbers more or less limited.

The Farming Unit under Specialization.

(a) *The Family Farm.*

Whatever the force of the arguments in favour of large-scale production for agriculture in a country so highly industrialized as England, the fact cannot be overlooked that the type of farmer represented by the man working upon his holding together with his relatives and without the assistance of hired labour, or at most with the bare minimum of it, is one of the most successful amongst the farming community to-day. In spite of bad times, the family-farmer is still able to adjust himself to the

[1] Letter from Sir John Russell.

conditions by cutting down his expenditure and by working longer hours; if necessary, he can come right down to the subsistence level, and his competitors overseas can do no more than this. Moreover, he is in many districts already a specialist, concentrating his attention upon the production of dairy products, of store-stock, or upon truck-farming, with all the advantages already indicated as attaching to a one-commodity business. In many parts of the country large communities of family-farmers are to be found, and amongst them there is a genuine land hunger in spite of prevailing difficulties. These are, for the most part, districts more remote from industrial centres, and consequently from opportunities for alternative employment, districts in which a consolidation of holdings was effected long before the Hanoverian enclosure era, dictated by the necessity for commercial farming. The relative isolation from industry has operated to retard the tendency towards commercialization and farming for a distant market, and this, together with the need for a maximum number of farms to provide for a growing population, has militated against the engrossment of holdings. To this class of farmer especially, amongst the British agricultural classes, farming is as much a life as a living, and the slow progress of commercialization of production has in no way loosened the strength of their hold on the soil.

Much has been made by advocates of an active small-holdings policy amongst politicians and agrarian reformers, of the demand for family farms, which is said to be universal and unsatisfied. As a statement this may be true, and believers in it have been successful in building up an administrative machine, operated by the State through the County Councils, to meet the demand

equally and indiscriminately all over the country. But this scheme is based upon a fundamental error, in that the will to farm does not make a farmer. Men may be born fools or poets, but farmers, never. Only by a long process of education, combined with long experience, can the knowledge be accumulated which goes to make up the successful small farmer. He must acquire manual dexterity in every farm operation, a knowledge of live-stock and an instinct for their well-being, a habit of frugality of life, running almost to parsimony, and, above all, a capacity for continuous hard work. Habits and experience of this character are not to be acquired by the townsman reading books on winter evenings, or working on an allotment in summer time. They are not necessarily an attribute of the wage-worker on the large commercial farms of half England. As at present distributed, such *bona fide* family-farmers as may be met with in the districts consisting mainly of large commercial farms, whether on old holdings or whether on the new creations of the County Councils, comprise no considerable class. So they are without standards of comparison, often without friends, and always trading at a disadvantage under a market organization designed for a larger farming system. A better regulated enthusiasm would have taken stock of the circumstances making for success in small-scale production, and legislation enacted for the provision of small holdings would have been administered so as to secure the multiplication of farms of the family-farmer type in those districts, mainly, where this class has long been established. The failure of the movement for the statutory multiplication of the smaller class of farmer throughout the country generally may be attributed

almost entirely to a lack of imagination and historical sense in those responsible for land settlement legislation from 1907 onwards.

Nor is it any answer to say that the land hunger admitted to exist in the districts of family-farming is evidence of the absurdity of the suggestion put forward here that the extension of the number of holdings of the 'small' type should have been restricted to such parts of the country. It is true that, so far as general knowledge goes, there is not much room for extension, but the survey of farm management and rural conditions which should have preceded any administrative action would have disclosed the fact that methods of land reclamation and improvement have long been evolved, though remaining until recently unhonoured and unsung, by which land to the extent of hundreds of thousands of acres could be brought into use under one of the most profitable and safest systems of family-farming, namely, that of raising store-stock. It is now more than thirty-five years since Mr. Stanley Bligh began the remarkable series of experiments on his Cilmery Park estate, in mid-Wales, by which he has now proved the aptitude of great areas of upland grazings to economic improvement. Without lavish expenditure, and without technical advice until recent years, when he secured the collaboration of Professor R. G. Stapledon, of the Welsh Plant Breeding Station, Mr. Bligh set to work upon the fundamental problem of how to increase the live-stock-carrying capacity of these poor grazings, realizing the far-reaching applications of results which could be shown to have economic value.

So far as demonstration goes his work is complete. He estimates that there are more than a million acres

of unimproved grass of the type that he has reclaimed at a 'profit', this being represented by an increase in rent which more than covers the interest and depreciation on the cost of the improvement. The typical farmer of the neighbourhood is a stock-raiser, whether cattle or sheep, and the basis of his farming is the sale of live-stock and wool. Around his homestead are small enclosures of land, generally of good quality and mostly under pasture, offering little scope for improvement, but on the hillsides above and below it are found the great areas which provide the rough grazings—land laid out in enclosures too large for close grazing; wet in places through want of drainage, or, on the other hand, without access to water; covered to a large extent with rushes, bracken, gorse, and scrub-timber. It is here where Mr. Bligh's work has been done, by cutting bracken and scrub, by watering, by phosphating to bring up wild white clover, by ploughing, sometimes, and re-seeding, and always by enclosing for close-grazing. An economic survey of national agriculture would have discovered his work and his success long since; under a wise administrative policy its great potentialities as an agent for promoting the closer settlement movement would have been realized and applied.[1]

The recognition of the place of the family-farmer in national agriculture economy, then, is no way incompatible with the suggestion that the reconstruction of agriculture called for, not only at this crisis in the history of the industry but also as a step in the march of progress, should follow the lines of greater specialization. On the contrary, he has his definite place in the scheme, and the

[1] Stanley M. Bligh and F. J. Prewett, *The Improvement of Upland Grazings* (Oxford: Clarendon Press), 1930.

methods by which it should be secured to him, methods definitely opposed to the haphazard and general multiplication of small holdings which has been the policy of the State hitherto, will be discussed in a future chapter.

(b) *The Factory Farm.*

Although the family-farmer exists in large numbers as an economic anachronism in an industrial country, not one example can be found of farming on factory lines, for which all the portents should be favourable. The case for an industrialized agriculture under existing farming systems has already been argued; under systems of greater specialization this process would be inevitable for certain farm products. The mechanization of agriculture is applicable almost exclusively to arable farming, and so it follows that specialization in corn-growing, potato-growing, the cultivation of sugar-beet, &c., can only be achieved on units large enough to give full effect to mechanization. The technical processes of cultivation, the means to increase the efficiency of labour and the opportunity for the worker's advancement, the application of scientific management and the provision of openings for men of education and ability, all of which can only be realized under large scale organization, would operate to peculiar advantage applied to systems of specialist production. The joint-stock company in tropical agriculture, concentrating on the production of one crop, knows nothing of the shifts to which the small-scale capitalist farmer is put to finance his operations; it makes the ordinary appeal to the investing public or to financial institutions. It can give scope to skilled

management and can afford to pay for it; it can buy its requisites in bulk at wholesale prices, instead of in detail on retailers' terms; it can short-circuit many of the processes of marketing and secure for itself much of the profit which finds its way into the hands of a distributing class, essential only where small and irregular consignments of produce are handled. Many of the manufacturing processes, or of the first stages of them, can be carried out by the agricultural joint-stock company, but they call for an equipment impossible for the small-scale producer. The organization of co-operative selling, which is proceeding so fast in many countries, and which has proved so difficult of realization in England, is a small-producer's need, and the whole machinery of it is designed only to remove the obstacles which surround him in his endeavour to reach his market. The specialist enterprise upon the large scale can departmentalize finance, the technique of production, the technique of manufacture, and the technique of marketing. Not only is the enterprise specialized, but, when carried on on factory lines, every process within it becomes the study of specialists, and the ultimate product is placed on the market in a form in which the consumer wants it, in quantities which he can absorb, and at a cost reduced to the lowest possible level. The English climate makes it impossible, in most seasons, to deliver corn on the market straight out of the field; in the absence of an elevator system the rick must serve the purpose of the grain silo; threshing and preparation for the market provide the obvious opportunity of winter employment for a labour staff which must be carried the year through. And so there need be no fear that the life of the prairie farmer, with

his combine-harvester and his six months winter idleness, would find a counterpart in English specialist corn-growing, whilst the machines adapted to home conditions, which are to make the labourer worthy of his hire, can find full scope for employment only on the factory farm.

(c) *The Small Capitalist Farm.*

Large-scale agriculture is applicable, probably, to every branch of the industry, but whilst there are certain forms of farming, such as the production of arable crops referred to above, which can only be carried on with the maximum of efficiency under a factory organization, there are other branches which may lend themselves to a middle-scale system, and others again which may be followed without loss of economy under this, or even under a family-farmer system. It must be stated quite definitely, however, that in no case and under no system can an economic gain be expected by a departure from the factory scale; the most that can be claimed is that, granted any social advantages or the chance of satisfying the desires of individuals under an organization of production by smaller units, these can be provided in certain branches of farming without much actual loss. Whilst the possibility of raising store-stock under a family-farmer system has been admitted, there are no technical or economic difficulties in the way of carrying on this branch of agriculture on the grand scale, but so long as there are men who want the life of the family-farmer, there is no reason why they should not be satisfied in this way, and there are of course other directions in which their demands could be met. What is true of the family-farmer in specialized agriculture is true, equally, of the small capitalist managing his holding

with a hired labour staff. To take the dairying industry as an example, there is no economic gain, so far as production is concerned, in a farming unit larger than that which can provide for the maximum use of one milking machine. If this limit be set at 40 or 50 cows, we have here a unit well adapted to the capacity of a small capitalist farmer. His men will be remunerated at skilled workers' rates as mechanics and stockmen, which, together with the opportunities for overtime, will secure to them an adequate living, whilst the mechanical equipment which he will have to instal will earn a full return on cost. It might be difficult to argue that, regarded as manager, this type of farmer is fully employed in controlling a dairy of 50 cows, and when the next process following production is considered, namely marketing, the weakness of his position alongside a producer of the scale of Mr. Hosier, with his 400 cows, cannot be denied. On the assumption, however, that a small demand by individualists, in search of an independent life, may always have to be met, in the face of the opportunities for greater reward in salaried employment under a large-scale organization, this is one of the directions in which the middle class of farmer might be accommodated. No one can say how far the land hunger in the districts of small-scale farming, and the demand for small holdings which is said to exist in other districts, arises from lack of opportunity to the farm-worker for advancement in his calling; both might disappear, to a large extent, with the opening up of new avenues towards a life and a living which the factory would provide. In the same way, with specialist farming developed on the large scale, no one can foresee how long the small capitalist would wish to

continue in business in the face of the alternative of the salaried manager's position. All that is intended here is to point out that it is not suggested that the country could be covered completely with great factory farms managed on the joint-stock principle, and that there is nothing incompatible in the idea of specialist production in certain lines and farming in small units of one kind or another. In the long run the greater will probably absorb the less, but in the meantime specialization can afford scope for every class of producer.

VIII

PRACTICAL MEASURES

THE criticism of the present attitude alike of farmers in the depressed areas and of their friends amongst the general public, which this forecast of the future implies, is based on their acquiescence in their own helplessness in the present crisis. As has been said, all seem to be agreed that it is impossible for the farming industry in these districts, which embrace, broadly, the areas of arable farming, to resolve their own difficulties. The suggestion offered here is that finality in farming progress has not and can never be reached, that whatever the economic circumstances, the producer has before him a way to adjust himself to them if only he can find it. In the past, the remedy for low prices for the produce of arable land has been found in the contraction of the ploughland area, but the position has now been reached when this remedy is applicable only to the accompaniment of a serious decline in production from the land. Whereas much of the old tillage area, in the districts of relatively high rainfall and on the stronger lands, was capable in the alternative of carrying a good herbage, and the development of the dairying and live-stock industries, the tillage area of to-day is defined to a large extent by the lighter lands and the districts of low rainfall, which can be converted only into indifferent pasturage.

The further suggestion is offered that, even were it otherwise, the diffusion of the farmer's energies over a diversity of products militates against the economic production of any one of them, and that a great

reorganization is now the need, based on the idea of specialization in the production of commodities in districts ascertained to be most favourable to them, and in the mechanization of processes of production.

(a) *The National Survey.*

The essential preliminary to reconstruction is a national survey of agriculture designed to determine the soil, climatic, and economic conditions most favourable, not to this or that system of farming as now pursued, but to the production of this or that agricultural commodity. To illustrate the idea it may be suggested that there are great areas of light land, consisting mainly of tillage intermixed with a varying proportion of grass, upon which systems of mixed husbandry for the production of corn and meat, corn and milk, corn and store-stock, are practised. The chalk lands of England, stretching from Dorset eastwards into Kent and northwards to the Yorkshire Wolds, carry much farming of this description, and no large area of England is suffering more than this one from the effect of low prices to-day. A delineation, by a survey, of this area would indicate those parts of it adapted to corn-growing, both grassland and ploughland alike, having regard, of course, not merely to the possibility of growing corn, but to the aptitude of the soil to mechanical cultivation, as being the only means by which labour efficiency on tillage land can be secured. It is not a matter of controversy that tens of thousands of acres of the light grassland of this area is unproductive, and remains only in grass because of the needs of the prevailing mixed farming systems, and in the absence of farming units large enough for the application of mechanical power to its cultivation.

To take another illustration, the national survey would locate other large areas of mixed farming, where, owing to the nature of the soil or to economic factors, farmers would be well advised to give up all attempts at tillage, except in so far as the requirements of live-stock in forage crops had to be met, and to concentrate the whole of their energies on one branch or another of the live-stock industry—dairying, grazing, or the raising of store-stock. Much land of this character, farmed under a variety of systems of mixed husbandry, exists throughout the Midland counties.

As a third example, all those areas would be defined which are devoted already to specialist farming, such as milk-production, stock-raising and market-gardening, and the question of their extension into areas equally suitable, or their reduction where the success of individuals has encouraged others, less favourably situated, to imitate them, would be examined, as would also the question of the consolidation of groups of farms into single units. And overriding these and similar objects of the survey would be the question, dealt with in a former chapter, of the circumstances favourable to the closer settlement of the land, a question which must be determined if the aspirations of the would-be family-farmer are ever to be satisfied upon a basis which will give him some hope in the life he wants, without the imposition of a heavy charge upon the national exchequer for financing the futilities of faddists.

Let there be no misunderstanding as to what is proposed. In a country such as England, where the variations of soil, climate, and season are so sudden and so great, the impossibility of laying out the land in farming 'belts', like the Wheat Belt, the Cotton Belt,

the Corn-and-Hog Belt of the United States, to take a few examples of specialization, is fully recognized, but this is not to say that if there be any economic advantage in specialization in agricultural production, opportunities for its practice are not to be found in this country. Specialization has already been developed here and there, and it should be capable of a great extension into other districts and to other commodities.

Many surveys of the agricultural industry have been undertaken since the compilation of Domesday Book. In their day, Daniel Defoe, Arthur Young, and William Cobbett perambulated the country to find out what they could, and to indicate reforms which seemed to them necessary. In more recent days, many groups and persons have surveyed the industry, or branches of it, both by investigations in the field and by the examination of the statistical data available. In the former category fall all the political investigations of recent years, most of them undertaken to prove a case; also the scientific and impartial farm-management surveys directed towards an analysis rather than a criticism of prevailing practice. In the latter category is the investigation made by the *Agricultural Tribunal.* None of these, in either category, have been undertaken to consider the reorganization of the industry or of branches of it, as dictated by changed circumstances, in the way that Arthur Young set out to consider the effects of inclosure, or that Mr. Prout and Mr. Baylis applied themselves to the reconstruction of the methods for corn production. With those exceptions, all of them seem to have proceeded rather on the line that English farming systems, as practised, were immutable in their fundamental conception, and that the need was only

for the application of methods to remove certain disabilities attaching to these systems.

Under the agricultural policy of the present Government it is clear that a survey of the agricultural industry is regarded as essential, but no indication has been given of the form which this survey should take. It is desirable, however, if any far-reaching attempt is to be made to set agriculture on its feet again in the depressed areas, that action should be separated from all considerations of party, and, as a first step towards the formulation of a national policy, common ground might be found by the three parties of the State in a national survey undertaken 'to examine the farming systems of England and Wales, and the soil, climatic, and economic factors controlling them, in relation to (i) the further development of specialization in the production of crops and livestock, (ii) the improvement of the standard of labour by the extended mechanization of agriculture, (iii) the rationalization of land settlement'.

(b) *Land Tenure.*

As regards the possibility of developing specialization in agricultural production under a system of large units, as disclosed by the survey, it must be obvious at once that certain readjustments of field, farm, and estate boundaries would be involved. Granted an area delineated as suitable, for example, for corn production, it will be found at once that existing field boundaries in many cases impose handicaps upon the economic use of machinery, being at once too small and too irregular. In the same direction, farms of 400, 500, even of 1,000 acres would not be large enough to give scope either for machinery or management. And not infrequently it

would be found that there was no agreement between the bounds of an estate in one ownership and of the groups of farms which the survey would disclose as going to make up the efficient farming unit.

How can this situation be met? As regards fields, it would be necessary to set about hedge-grubbing on an extensive scale. It is not suggested that this would be called for everywhere. Much of the light corn lands of England, where mechanized arable farming would certainly be indicated, is already laid out in fields large enough to give full scope for the tractor and the steam plough; in some areas, indeed, hedgerows are almost non-existent to-day. The process of eradicating hedges is a perfectly simple one and clearly understood. Recent experience in the construction of aerodromes has shown what can be done, and speedily, with the aid of the steam-engine and machinery operated by it, to pull up hedgerows and to prepare the ground occupied by them for subsequent cultivation. At Dry Sandford, in Berkshire, the Air Ministry has recently removed the hedgerows and hedgerow timber on 432 acres for such a purpose, and by the courtesy of the Ministry and of the contractors, Messrs. John Allen & Sons, Ltd., particulars of the procedure and of the cost are available. As regards hedges and hedgerow timber, everything up to nine inches in diameter was pulled up by chains operated by a steam-engine. Larger trees were felled, and the stumps blown up with gelignite. All saleable timber was disposed of and the smaller stuff, brushwood, and roots, were burnt.

The next step was to plough up the sites of the hedgerows and ditches to level them. For this purpose a six-furrow steam-plough was made into a three-furrow

plough, and the ground ploughed once with an attachment of only three coulters. Subsequently three great mould-boards were attached, able to turn a furrow-slice of 2 feet, and the ground was ploughed again with the plough set 6 inches, 12 inches, or 18 inches deep according to the depth of the soil. By this means the sites of the hedgerows were levelled out and the ditches filled in. There was some levelling up of hollow places in some of the fields to allow of safe landing for an aeroplane, which would not have been necessary for agricultural purposes.

In all, nearly 10,000 yards of hedges were removed, and the total cost of the work, which was completed in nine weeks, amounted to 5*s.* 7*d.* per yard run.

These details are only an indication of what is possible, and cannot serve for generalization, as every case will differ in the amount and the conditions of the work involved. At Dry Sandford, for example, the cost was increased by reason of a lane over a mile long crossing the area, which added some 2,000 yards to the hedge-grubbing, through the double hedge. But the results achieved here show that there is no mechanical difficulty in the way of throwing fields together. Incidentally, the removal of the hedgerows added about 10 acres to the effective area of the land, and this gain must be set against the cost of the work.

Coming now to the farming unit, only in rare cases in arable farming districts, where individualist farmers have already collected a number of farms into one large area both sufficient and convenient for a mechanical farming enterprise, would it be possible to adopt the present delineation of boundaries. Almost universally would it be necessary to have a complete

regrouping, designed to provide a stretch of country large enough to give full scope to the economic application of machinery and management. In the case of corn lands this would mean areas varying, according to circumstances, from 2,000 to 5,000 acres, the lower limit being the least on which full-time employment could be found for a set of steam-tackle, the higher limit being suggested as that set by the capacity of the managing director, the actual area in every case being determined by varying physical circumstances. As regards the dairying industry, the smallest unit would be that which would justify the installation of a milking machine, whilst here, too, the upper limit would be fixed by considerations of efficiency of management. In the pastoral business again, whether for meat or stock-raising, considerations of management would be the determining factor in the size of the enterprise, but in both these cases, dairying and pastoral farming, opportunities would be provided for giving recognition, at all events temporarily, to the desire for individualism and to local land-hunger. In the corn-growing business it is suggested that any such recognition would be quite incompatible with profitable agriculture.

In passing, it may be remarked that nothing destructive of the amenities of the countryside need be involved in this work. It is only necessary to look at the great sweeps of open land, much of it still under tillage, on the slopes of the downlands and wolds of England, to realize the beauty of open country. The Cotswolds with their great enclosures bounded by low stone walls, the fen lands of Lincolnshire and its neighbouring counties, all of them present prospects which no hedgerows would enhance, and nothing need be feared by the lovers of rural

England from the reconstruction of field and farm-boundaries in the manner proposed. There need be no interference with the existing homesteads, which would remain to accommodate the departmental managers of the factory-farms and the workers engaged upon them, and to house the farming equipment; the villages and the hamlets, with their gardens and enclosures of accommodation land for the cottager's live-stock, would remain, with the added value of an air of prosperity and well-being which would accrue from the improved standard of living resulting from the higher industrial status of their inhabitants under the new conditions of employment.

The removal of field-boundaries obstructive to the course of the tractor and the steam-plough presents no practical difficulties; the grouping of small farms to form one large unit is easily arranged—on paper. It is when we come to consider how to deal with tenants in occupation and, what is even more difficult, with landlords, where the boundaries of the new farming areas do not fall within the confines of one estate, that the introduction of mechanized farming assumes a more serious aspect. The problem of the sitting tenant will be dealt with at a later stage; the problem of the boundaries of estates in private ownership raises at once the whole question of rights of property, and this issue must be faced. It is obvious that the economic use of the land is independent of anything so artificial as the boundaries of a private estate, particularly where mechanization on a factory scale is indicated. In some cases the area of the farming unit might be adjusted to meet considerations of this kind, for within the limits set by the opportunity for the *optimum* use of machinery and the

maximum scope for management, the actual size of the large-scale farming unit is elastic. But there is no solution of the difficulty here; such cases will be relatively few, and there still remains the owner-occupier—a class representative to-day of one-third of the acreage of the cultivated area of England—whose farm must often fall, in whole or in part, within the unit. A hundred and fifty years ago, when agriculture was the concern of the country and the landlords of England had still the spirit and the means to undertake a great scheme of reconstruction on their own initiative, when, in fact, they did actually set on foot a movement beset with far greater difficulties and more revolutionary in its scope than anything suggested here, the rectification of boundaries might safely have been left to private enterprise. Under the conditions of to-day, procedure so desirable as this must be dismissed without further consideration; neither the incentive, nor the will, nor the means remain, and the assumption of ownership of the land by the State offers the only solution.

No fair-minded person subscribes to-day to the doctrine of the iniquity of private property in land. Equally it may be said that State-ownership, or nationalization, is no longer a matter of party controversy. Discussion of the principle is based not, on the one hand, on the immorality of private ownership, nor, on the other hand, on the rights of property, but only upon the need for action of some kind arising out of the state of the landowning industry created by the operation of economic forces, which are driving landlords irresistibly out of the business. Apart from all consideration of what would be involved under systems of specialization and mechanization, public opinion is moving steadily

in the direction of the expropriation of the agricultural landlord by the State. Proposals to this end put forward some five years ago, based solely upon the economic needs of rural industry and without any political bias, have received support from all parties. The Labour Party have been consistent advocates of nationalization; the Liberals propose to achieve the same end with variations as regards the position of the sitting tenant; the Conservatives, as a party, whilst still asserting the doctrine of no interference with private enterprise, are clamant by individuals for the right to surrender land in satisfaction of certain obligations to the State.

This is not the place in which to develop the case for land nationalization, still less for the formulation of a scheme to bring it into being. It may be convenient, however, to summarize the arguments which seem to make it the only means to the solution of a very pressing difficulty.

In the first place, the days have long gone by since the principle upon which the English land system is based, the principle of dual responsibility of landlord and tenant, has been effective in the development of the resources of the soil. Year by year the impossibility of the landlord's task, arising out of the depression of his industry and the more attractive alternatives available to him, has led to the withdrawal both of his interest and of his financial support, and has thrown upon the tenant an increasing responsibility for the conduct of the business. Many causes have contributed to the derogation of the landlord's position in the last two generations. Since about the year 1870, more than half the capital invested by him has been wiped out by the decline in the value of agricultural produce reflected in rent.

Many people do not realize that land in the raw state has no value for agricultural purposes, that such value which it will command represents nothing more, and generally a great deal less, than capital put into it by successive improvers to drain and fence it, to give access to it, and to equip it with the houses and buildings necessary for the workers and the farming equipment. And the fall in gross income, a large part of which had to be returned to the land if it were to be maintained in a productive state, is only a part of the story of the landlord's difficulties. The rise in national and local taxation, both of which represent charges falling upon the landlord at first or second hand, during the time that rents have fallen, has reduced his available surplus still further. On the great estates the margin between the landlord's subsistence and the gross income may still be sufficient to meet the necessary expenditure; on the smaller properties the position has become impossible except in those cases where the amenities of ownership are the first consideration, and the business can be subsidized from revenue derived from outside sources. The operation of the death duties is to exercise a further depressing effect. They are a tax on capital, and, in the absence of capital invested outside the land, they can be paid, on the passing of an estate, only by the sale of portions of it, and in this way even a considerable property is dispersed, and the owners are driven out of the landowning business in two or three generations.

Lastly, the cost of maintenance, like the cost of central and local administration, has exhibited a great advance, and the effect of all these things collectively, which was to shake the foundations of the landlord-and-tenant system in the 'eighties and 'nineties of last century, has been to

cut them away altogether in the 'twenties of the present century. The position has been recognized by the legislature, and the effect of successive Agricultural Holdings Acts has been to strengthen and consolidate the position of the tenant as the leader of enterprise, and to reduce the landlord more and more to the state of a mere receiver of rent. Time was, when the landlord supplied not only the fixed capital of the business and assumed responsibility for its maintenance in a state of efficiency, but even the course of cropping and the methods by which the fertility of the farm could best be maintained were dictated by him. To-day, the tenant is free of all control in the use of his land, and further, should the landlord fail to maintain the permanent equipment of his farm, he may execute the necessary works himself and recover from the landlord. This condition of affairs cannot continue. A State that has gone so far towards recognition of the breakdown of a great tradition of partnership, has no choice left to it but to go the whole way. 'If there is to be a statutory rent collector and receiver, this party should be the Government or some public authority rather than a private person; for it undoubtedly does a great deal of harm to divorce a landlord's interest and independent conduct from the management of his estate.'[1]

The crying need of the land is for fresh capital for land drainage, for rural housing, for water-supply, for all the equipment and improvements which the landlord in the golden age of farming was able and ready to supply. If the arguments for the reconstruction of agriculture in the ways indicated in the foregoing chapters should find favour, it is clear that an even greater influx of capital

[1] Duke of Montrose, in *The Times*, 22 July 1929.

into the land will be called for, and how is it to be provided? A century and a half ago, the landlords of England would readily have faced the cost of reconstruction on lines even so far-reaching as these. In fact, over just that area of England which is now most depressed, and to which the proposals for the engrossment of farms and the mechanization of agriculture would apply most particularly, they undertook a reconstruction scheme at once more drastic and more costly than that which is contemplated under the present proposals. Between the years 1750 and 1810, no fewer than 2,921 Inclosure Acts were passed, altering the face of approximately 2,500,000 acres of common fields, and bringing under cultivation and settlement about 1,750,000 acres of waste. The idea of State-aid was never in their minds, but all the incentives to action of those days have gone, and even the lesser revolution involved in specialization in production and in the rationalization of the agricultural industry as contemplated here, could only be brought about with the assistance of the national exchequer. For this reason, apart from those already given, the resumption of ownership of agricultural land by the State would seem to be inevitable in the future of farming as predicted in previous pages.

(c) *Finance.*

The final issue in all proposals for the reconstruction of agriculture is the problem of finance. In those suggested here it resolves itself into three parts (i) land purchase; (ii) equipment of the land; (iii) farm finance.

(i) In all those districts where the national survey may indicate the desirability of the introduction of one of the new systems of agriculture, whether it be by the

creation of factory-farms or the extension of family-farms—and in course of time it is probable that these two types will come to cover the whole country—the acquisition of the landlord's interest by the State has been indicated as a preliminary, which is essential in the interests of the schemes. As these proposals are put forward as arising out of sheer economic necessity and concerned in no way with any political theory, it follows that the purchase of the land from its existing owners is reduced to an ordinary business transaction, in which the only need is to ascertain the value of the property changing hands. Land in this case means agricultural land, so that the difficulties presented by the valuation of urban areas are eliminated at once. As to agricultural land, the annual value of the landlord's interest is assessed, from time to time, for purposes of the Income Tax (Schedule A), and the capital value would be such a sum as would produce this income at the rate of interest at which the State could borrow money at the moment. If this be taken as being $4\frac{1}{2}$ per cent. at the present time, then the value of the landlord's interest would be $22\frac{1}{2}$ years purchase of the net Income Tax (Schedule A) assessment. There would be exceptional cases of various types to which this simple calculation would not apply—the question of mansion houses and parks, woodlands, undeveloped land, minerals, and so forth. These do not call for discussion on this occasion, but they present no insuperable difficulties, and methods for dealing with them have been proposed already.[1]

The acquisition of the land, preparatory to its equipment for factory-farming or land settlement, is not the

[1] See C. S. Orwin and W. R. Peel, *The Tenure of Agricultural Land*, 2nd ed. (Cambridge University Press), 1926.

only financial problem involved. There is the question of getting possession of the land for occupation for either of these purposes. There is very little waste land in England, and not much of it is likely to be disclosed by the national survey as being fit for cultivation. But neither of the purposes in view could be fulfilled without the expropriation of the occupier as well as of the landlord, and the question of ways and means must be considered. Two solutions suggest themselves. In the first place, it might be held desirable not to disturb the occupier but to formulate the new scheme for dealing with the area of which his holding forms a part and to bring it into being, bit by bit, as farms were given up. In the case of land settlement by family-farmers this procedure might involve no handicaps. The tendency would be, in every case, to reduce the area of land in one occupation, and settlement would proceed, bit by bit, as the larger holdings were vacated. In the case of factory farming, it is clear that the economic development to its fullest extent of a block of land extending, say, to 5,000 acres, would be impeded if it had to proceed piecemeal by the recognition of the right of individual farmers, occupying the units of which it was composed, to remain in possession at will. The issue is a simple one; either these handicaps must be endured and the larger venture must develop as best it can during the period of transition, or, alternatively, they must be removed by the extinction of the sitting tenants' interest by purchase. All the advantages seem to lie in the direction of the latter scheme. It is difficult to contemplate a joint-stock enterprise organized to take over a large area of land for mechanized farming under all the handicaps of only partial possession at the outset,

and complete possession by piecemeal at uncertain dates in the future. The State would have to give a clear title, and to do this it would have to displace the sitting tenants under an arrangement for compensation. The sum payable is a matter which can be left for future consideration. Suffice it to say here that the private landowner to-day is in a position similar to that in which the State would be, for he can resume possession of his land only by payment of compensation to his tenant of a sum not exceeding two years' rent, and this provision of the Agricultural Holdings Act with which all farmers are familiar, might form the basis of any discussion of the amount of compensation to be paid by the State in the circumstances contemplated. The redistribution of holdings could only proceed slowly; there would be no question of wholesale evictions of reluctant tenants at any given moment; many of them would be glad enough to have the chance of getting out well, if times are as bad as they are painted, and some of them would find places as departmental managers on the factory-farms into which their holdings had been absorbed.

(ii) Land purchase and any cost involved to secure vacant possession are not the only financial considerations prior to the occupation of the land for specialist farming, whether in large or small units. Dealing, first, with the factory-farms, these will be located mainly in the light land districts of the counties of lower rainfall—to anticipate the findings of the national survey—and the removal of redundant field boundaries, hedgerow timber, the piping and filling, possibly, of ditches, will be necessary on a greater or a lesser scale, according to the conditions prevailing in different localities, to give full

scope to the machinery equipment. In fact, this would represent, probably, the only outlay of what may be regarded as landlord's capital likely to be called for, for whilst there is no reason to suppose that arable farming on the grand scale cannot maintain the level of production from the land at the same high figure to which the English farmer has attained, it is certain that it will not increase employment. Its justification, apart from the question of the probable substitution of profits on capital invested in it for the losses which the arable farmers now claim to be sustaining, rests upon the opportunities for economic and social advancement which it will offer to the workers and others engaged in it. And so it may be assumed that the existing complement of farm-houses and cottages will suffice for the accommodation of the managerial and labour staffs required. Equally, with the concentration on crop production, the farm-building equipment now existing should be more than adequate for the purposes of specialist arable farming, and the only further expenditure of landlord capital needed might be an outlay on the reparation and improvement of homesteads on certain estates where the impoverishment of their former owners may have resulted in dilapidation.

The equipment of the land, then, should not be a matter involving a heavy outlay. From the figures given in connexion with the equipment of the aerodrome at Dry Sandford, a basis may be obtained for the calculation of cost in any given case, but no unit figure can be given, owing to the great variations which will be encountered from farm to farm. In the country occupied by Mr. Baylis, for example, fields are for the most part already large enough to allow full scope to

the tractor and the steam-plough, and many other districts will suggest themselves where mechanized farming could be pursued at once merely by throwing together a certain number of holdings now in separate occupation. But in other districts the removal of field boundaries will have to be undertaken, and the work could be financed in one of two ways. Either the State would do the work through its administrative officers, and the big farm ready for occupation would be offered to the new tenant ready for him to step into, or the principle followed in the new worlds could be adopted by the State, and the preparatory work of clearing the land for occupation could devolve upon the tenant. It is doubtful which way the balance of advantage would lie; the cost would be the same in either case and would fall upon the State as landlord, whether in the form of interest on the capital outlay or by the necessity of accepting a lower rent. The gain to the nation would be represented by the substitution of a flourishing for a moribund industry.

The equipment of large-scale farms for purposes other than those of arable farming is different. In the first place, the matter would not be one of immediate urgency. The agricultural revolution involved in all the proposals here set forth, could only slowly be carried through. It would start, naturally, in those parts of England most seriously depressed under the conditions of to-day, and so it follows that in the grass districts, where dairying, grazing, and stock-raising are carried on with some degree of success under the small capitalist system, changes designed to give effect to the idea of scientific management would not call for consideration as a pressing problem. It will suffice to indicate that the

equipment question in these cases may be one rather of building adaptation than of engrossment of fields. The control of grazing and the provision of shelter for live-stock impose limits upon the theoretical advantages of large fields. On the other hand, it might well be found impossible to make economic use of a large number of small homesteads where, say, a number of individual dairy-farms were to be thrown together in the formation of a big milk-producing enterprise, and some outlay on the reconstruction of old buildings, or on the erection of new ones, at certain centres might be needed.

The extension of the family-farmer unit, regarded from the point of view of the cost of equipment, is an entirely different problem. Anticipating once more the verdict of the national survey, it is suggested that the areas likely to be indicated as adapted to this type of farming are those where the soil, climatic and economic environment are favourable to the market-gardening and fruit-growing industries, where the intensive cultivation of small holdings could be pursued, and those where stock-raising is the industry best suited to the locality, to be carried on extensively by units limited only by the capacity of the farmer and his family. In either case the work of equipment would involve the provision of houses and buildings.

Dealing, first, with the intensively farmed small holding, a good example of the work and outlay in which the State would be involved is provided in the Evesham district, where County Council and private enterprise have equipped many small parcels of land to provide homes and livelihoods for manual workers. There is no question here of any option to the State to do the work or to leave it to its tenants; these men clearly cannot be

left to finance it in the way that the joint-stock company might be left to finance the equipment of a five-thousand-acre factory-farm. On the other hand, there is no question, either, of unremunerative outlay, for the bulk of the expense is represented by the cost of a cottage, and in all these cases a rent-charge representing interest on the capital could be recovered from the tenant. The same would be true of the more extensive holdings to be provided for the stock-raising farmers under Mr. Bligh's system for the improvement of upland grazing. Here the equipment cost would be represented by the cost of land reclamation and the cost of a home and a homestead, and the interest charge on the capital cost of all this work would be recoverable as rent. It may be repeated that in neither of these cases is any economic advantage to be anticipated from the equipment of farms, whether for intensive or for extensive farming, on the family-farmer basis, but the suggestion of their provision is the outcome of an attempt to meet a definite demand from the small cultivator and to recognize his place in the social scheme, whilst avoiding the pitfalls of the present system of promiscuous provision of this type of holding throughout the country generally.

(iii) State ownership of the soil in no way involves State control of agriculture. The arguments for State ownership set out here and elsewhere seem unanswerable, but the necessity for the assumption of the landlord's functions granted, no interference is contemplated with the principle of tenant farming. The objections to State trading are deep-rooted, and they are probably well founded; certainly an industry such as agriculture seems ill-adapted for an experiment in this direction. And so it is proposed that the land acquired and equipped by

the State, should be let out to tenants great and small for occupation under the conditions long established in this country.

The problem of the provision of working capital for the farmer has received much attention in recent years. Under the proposals for tenancy, under the State, of small and great farms, it will be certainly no less pressing. Dealing, first of all, with the family-farmer, the opportunity might be taken for tackling the old problem in a new way. By reason of the small scale of his operations he is cut off, very largely, from access to bank credit, and he is dependent, almost exclusively, upon merchant credit. Although many a farmer's debt to the tradesmen and dealers with whom his business is transacted is, in the best sense, a heavy one, this is an unsatisfactory way by which to finance his work. The facilities afforded by the Agricultural Credits Act, 1927, empowering the farmer to mortgage his stock and crops to his bank as security for an overdraft, have made no appeal to farmers in general, and they must be merely illusory to a small man, for where is there a bank prepared to go through the routine of taking a charge on the stock-in-trade of a smallholder living, say, in mid-Wales, and having it registered in London, to secure an advance of five-and-twenty pounds? Co-operation for the supply of requisites has always been pointed out as one of the elements of success in the organization of communities of small farmers. One of the difficulties in achieving it has been that such communities are to seek. Under the scheme proposed here, by which family-farmers would be segregated in districts most favourable to their operations, the co-operative supply society might become more or less universal, and by a system of credit to

members it could finance approved persons at ordinary commercial rates. Thus, the small farmer would continue to finance himself by the principle of merchant credit, a way that he understands and uses, without paying exorbitantly to merchant creditors for the accommodation. The co-operative trading society could obtain its credit from the banks, against the security of the uncalled capital of its members.

The financing of the family-farmer, then, should present no difficulty, and by the means suggested, the principle of co-operation would be inculcated. It is when we have to consider the financing of the factory-farm that the problem becomes more difficult, for there is no analogy for it in the agriculture of the country to-day. Although examples of great farming enterprises are to be found, they differ fundamentally in their conception from that which is contemplated here. Not only is the principle of specialization almost entirely absent, but in no case have they been organized upon the principles of modern scientific management—there is no departmentalization of control, no specialization of labour, no application of the lessons of scientific book-keeping—applied to an enterprise planned from the first on the factory scale. All the great farming businesses of the country have been built up by the ability of one man from a small initial unit; most of them consist of a group of holdings, often severed more or less widely one from another; none of them are making full use of machinery and implements specially designed for their purpose and operated by a labour staff specially trained in the handling; above all, their management is always a one-man affair.

It is improbable that the few big private enterprises

in the districts likely to be indicated by the national survey as suitable for large-scale operations could serve as beginnings in a general organization of agriculture of this character. The weaknesses just enumerated would be fatal, and few, if any of them, have been developed with that degree of specialization which is fundamental in the proposals for agricultural reconstruction put forward here. The conception of 'big business' must be realized in all its aspects, and in British farming as conducted to-day there is probably no example of it. But it is manifest, commonly enough, in the agriculture of the Empire, and it is in the ranching and plantation industries of the Dominions and Britain's tropical dependencies that analogies for these suggestions must be sought. There, private enterprise has built up successfully many great farming units, but the joint-stock company is equally, and in some countries even more common, and the British investor, who has never contemplated the possibility of financing farming in his own country, has given many millions of money to develop the production of tea, coffee, rubber, cocoa, cotton, meat, and wool, and other specialities abroad. That big farms are rare in England, that scientific management under the system of joint-stock finance is unrepresented, that specialization in production is applied only to certain commodities and not at all to those suffering most from the prevailing depression, are difficulties in the way of an appeal to the private investor to finance the new farming which must be recognized.

In the days of the reclamation of wastes, the drainage of the fens, and embanking the salt marshes, when the Duke of Bedford and Coke of Norfolk drew their

brother landlords and the yeoman farmers to the Woburn and Holkham sheep-shearings, both the organization and the finance of schemes of the magnitude of those contemplated here would have been simple. To-day, when the arable farmers of England complain that the dice are loaded against them and that agriculture as a whole is the Cinderella of British industries, it may call for too much faith in the future of farming to expect an inflow of private capital into a new and untried channel of investment. With the principle of specialization under a large-scale organization accepted, with the national survey of opportunities completed, with the passing of the land from the private owner to the nation, is there not a clear case for the financing of the new agriculture, anyhow in its initial and experimental stages, by the State? All the remedies for agricultural depression suggested from within the industry—control of imports, the subsidy of products, of wages, of ploughland—all of them would cost the country money and they are based on the idea of protection, against which the nation has pronounced time and time again. The sugar subsidy, which has brought relief to hundreds of arable farmers, and may have established the cultivation of a new crop, has cost the country many millions. Is it unreasonable to suggest that the State might finance corporations of responsible persons formed to undertake the management of factory farms organized to test the possibilities of the application to agriculture of all the principles that have gone to build up British industry?

The principle of public assistance by way of 'loans to be applied towards the carrying out of capital undertakings' has been accepted already in the Trade

Facilities Acts, 1921–6, and very large sums have been guaranteed under the provisions of them, by the Treasury, to corporations and other bodies of persons for objects 'calculated to promote employment in the United Kingdom'. Could any object be conceived worthier of financial assistance than a scheme calculated to regenerate in some of its most important branches our oldest and greatest national industry,—one, moreover, which would raise the status of the agricultural labourer more nearly to that of the industrial workers of the country? It is unlikely that the guarantee of very large sums would be necessary. The delineation, the acquisition, and the permanent equipment of factory farms could proceed only slowly, and so soon as a few examples of successful organization were available, there is no reason to suppose that the private investor would not come in to finance this class of enterprise, just as he has shown himself so willing to do in the case of the plantation industries, concerned with the cultivation of crops about which he knows nothing, grown in countries which he has never seen.

IX

SUMMARY AND CONCLUSIONS

THE forecast of the future of farming in these islands contained in the foregoing pages has been prompted solely by the present condition of agriculture and by the attitude generally adopted towards it alike by those within and without the industry. It is not claimed for it that it will do much to start that 'back to the land' movement which has been the popular political cry, or that it will result in a great increase of production from the land. There is no policy which will put more men on the land except a reduction in the standard of living or an artificial improvement in prices, either of which would increase the margin between costs and returns and so make it possible once more to cultivate marginal and sub-marginal land. By means of specialization and mechanization, it is suggested, the decline of agriculture might be arrested, and with this, the decline of the rural population also, whilst preserving or even improving the standard of life. By the rationalization of land settlement, too, the prospects of family farming would be brighter, and the reclamation and settlement of the great areas of 'rough grazings' would absorb a certain additional number of aspirants for this mode of life. But nothing is claimed for the policy outlined here as a contribution to the unemployment problem, except in so far as it might stay the rural exodus and improve the absorptive power of the rural home market.

Although the complaint of a depression in all branches of farming cannot be substantiated, and is

not, indeed, advanced by the more responsible leaders, it is beyond question that the ploughland farmer is in a serious plight, and it seems to be accepted that the situation which has developed is beyond his control, that there is nothing he himself can do, whether by reorganization or reconstruction, to adjust his methods to his altered circumstances. This is not to say that nothing is being attempted, but the fundamental principle underlying every effort to bring about an amelioration of the position rests upon the assumption that present-day farming systems are sound, that in their essentials they cannot be improved, that all that the old garment needs is new patches. The resources of science, the propaganda of the administrative departments of the State, are applied, all of them, to the repair of established processes for production and distribution, and though they may succeed in mending some of the rents, they can do but little to temper the cold wind which beats upon the farmer.

But the problem of how once more to speed the plough is not the only one which the suggestions in the foregoing chapters are designed to solve. In those which may be described as the more sheltered systems of farming, which are still under the influence of a more or less watery sunshine, there lies a risk of danger, in a future possibly not very distant, arising from the very sense of security which they enjoy by comparison. The failure of arable husbandry has driven men more and more into grass-farming of various kinds, until there are already prophets arising, here and there, who foretell that the fate which tends to overwhelm the former will be meted out before long to the latter likewise. Secure in his present position, the grass-farmer is taking no

thought for the morrow, and it is to anticipate the day when he too, like the arable farmer, may protest that his economic evolution has reached finality and that the resuscitation of his industry is beyond his own capacity, that the proposals here contained are put forward for serious consideration.

Let us draw together the threads of the argument, and summarize the conclusions. In the first place, the attempt has been made to show that the preservation of a balance between rural and urban industry is essential to the well-being of the State. What this balance should be cannot, of course, be stated in figures. In France, which is largely self-sufficing in food, the latest available census returns (1921) show that 41 per cent. of the occupied population is engaged in agriculture. But France is largely a country of peasant producers, working without the advantages of the resources of modern engineering science, and living at a low standard. In the United States of America, another self-sufficing country, where the standard of living is relatively high, and where the mechanization of farming has proceeded to considerable lengths, 33 per cent. of the population sufficed at the same date to feed the nation. In England and Wales, again at the same date, no more than 7 per cent. of the occupied population followed agriculture for their living, and the country has aptly been described as feeding itself only over the week-end. The suggestion made is that a State which has become parasitic to this extent for vital necessities, is in a condition of the gravest economic danger.

But the emphasis laid upon this position in the earlier chapters amounts to little more than a lament over the

economic policy of the country during the past hundred and fifty years, for it must be admitted that the proposals put forward here for the amelioration of the position of agriculture offer no solution of the problem of how to secure the greater economic stability of the nation. Unless the case for a better balanced population can be demonstrated to be wrong—in other words, unless England's lost foreign markets can be recaptured and its two millions of unemployed industrial workers can be reabsorbed into urban enterprise—the ultimate remedy can be sought only in a substantial reduction of the industrial population. But whatever answer the future may give to this proposition, no one will deny the economic advantages derived by any State from a flourishing rural industry. Even though the soundness of our industrial development be triumphantly vindicated, and agriculture should continue to take its place not as something vital but merely as an alternative activity in which some part of the population is engaged, no argument is needed as a justification for taking steps to secure that their enterprise should flourish. Whatever view, then, the reader may hold upon the national economic policy of the last century and its consequences, the consideration of the proposals put forward for the reconstruction of agriculture are in no way prejudiced. (Chs. I—III.)

In the second place, and turning now to agricultural rather than to national economy, it is pointed out that many remedies for the present plight, particularly of the ploughland farmer, are proposed. It is suggested that some of these are impracticable in an industrial country, others of them highly questionable in their economic effects, others again mere palliatives which, at best,

could serve only to bolster up a system that has served its day. (Ch. IV.)

In the third place, the age-long supremacy of mixed husbandry and rotation farming is challenged. In the districts of arable farming no one has ever questioned the soundness of systems of diversified crop production, of the interdependence of live-stock and crop husbandry. It is pointed out that all the great discoveries of agricultural science have been applied to the stimulation of these systems, that only in the rarest instances have farmers been found who were prepared to consider the situation created for them by the chemists and the biologists, with a view to the reconstruction of their methods in a manner designed to take the fullest advantage of it. It is suggested that principles of farming under which the cultivation of one crop is dependent upon that of another, under which the production of all crops rests largely upon a soil fertility maintained by a laborious process of conversion of feeding stuffs into manure through the agency of farm live-stock, go back to the days of antiquity, and that the farmer, over head-and-ears in tradition, has never yet realized all the implications of the new knowledge at his disposal. It is pointed out that the forms of farming most successful in this country to-day, that those practised in almost every case by the farmer's overseas competitors, are specialist forms, under which the producer is free to concentrate his whole attention on the raising and distribution of one or two commodities. The suggestion follows that progress in English farming systems must take the form of the most economic production of commodities by specialization, and the gradual elimination of the diversified types of agriculture which have held the field so long.

Nor is this all. If the farmer has realized only partially the application of scientific discovery to the evolution of farm management, what can be said for his appreciation of the potentialities of mechanical invention? It is admitted that much has been done to mechanize many of the old manual processes, but just as the farmer has confined his utilization of the discoveries of natural science to the intensification of his established practice, so his application of engineering invention has been limited by the established size of his farm. It is pointed out that in a highly industrialized country, where the standard of living of the preponderant urban population is continually forcing up the standard of the rural worker also, the question of how to increase the output of agricultural labour is one of extreme urgency. But the organization of the farm to-day differs very little from that of a hundred years ago, when the unit of farm management was based upon a plentiful supply of cheap labour, when the horse was the only form of power at the farmer's command, and the human machine was the only one. The rise in wages has outstripped the rise in prices, and on the holdings of the little farmer-capitalists which make up the great bulk of English farming, the margin between costs and returns is no longer sufficient to maintain their host of farmer-managers. The suggestion is that the time has come when over large areas of the country, more particularly, perhaps, in the arable-farming districts, aggregations of these small farms must be made, to give scope for the maximum employment of machinery, and to justify the higher remuneration of labour by the increase in the amount of unit output.

The problem of the regeneration of the capitalist

farmer working with wage labour is not the only one considered. Recognition, on social if not on economic grounds, has been given, also, to the problem of the family-farmer, arising out of his continued existence in the face of the steady industrialization of England, and the genuine land-hunger prevailing, particularly in certain parts of the country. It is pointed out that the economic disadvantages of the occupation of the land in small units are associated especially with certain types of farming, that other systems suffer less from the handicaps of small scale organization. So the State policy, aimed at an indiscriminate creation of family-farms in all parts of the country, regardless of local tradition and farming systems, is criticized, and suggestions are made for the regulation of attempts at closer settlement, designed to infuse new life into the small-holdings movement, and to give the small holder a better chance. (Chs. V, VI, and VII.)

In the last chapter, an attempt is made to devise a scheme for the practical accomplishment of the transformations proposed in this forecast of the future of farming, and it is desired to emphasize the importance attached to the execution of the proposed national survey. It is pointed out that nothing of the kind has been attempted since the days of Arthur Young and his collaborators. In the middle of last century, by the enterprise of the Royal Agricultural Society, a series of county surveys were undertaken, and, in more recent years, a few private persons have recorded the state of agriculture, more particularly in its technical aspects. The time seems ripe, it is suggested, for the State to undertake an economic review of the farming systems of England and Wales, 'in relation to (i) the further

development of specialization in the production of crops and live-stock; (ii) the improvement of the standard of labour by the extended mechanization of agriculture; (iii) the rationalization of land settlement.' Only in this way will it be possible to define the areas in which to develop the modifications in farming practice which have been indicated as essential.

Methods by which the great changes in land tenure and farm management could be financed have been indicated also. At this stage it has not been thought necessary to elaborate them in any detail, but particular attention may be directed to the passing of the agricultural landlord, and to the proposal for the assumption of his functions by the State. The financial aspects of the suggestions for agricultural reconstruction, however, should not present any serious difficulty. It took a hundred years to complete the enclosure of the open fields and commons; it might take five-and-twenty to rationalize the industry as it is to-day. Dr. Addison has stated that it would cost the country nearly three millions of money to pay the British farmer the difference between current prices and the price of fifty-five shillings for his wheat-harvest of 1929, and the money would earn the country nothing. Would not Mr. Baldwin be well advised to consider the allocation of such a sum annually to a scheme of reconstruction, calculated to earn interest, rather than to one to sustain a system under which, by the farmer's own admission, he can no longer live? (Ch. VIII.)

It was remarked by a reader of Bishop Berkeley's proof of the non-existence of matter, that though 'he was not able to answer his subtle premisses, he did not

believe his absurd conclusion'. No one, probably, will attempt to answer the case which has been argued here, for action of some kind, designed to put British agriculture on a sounder foundation, though many people may have some difficulty in believing the conclusions which have been drawn in the foregoing chapters. But it is suggested that, as opposed to the policy of patching an old garment upon which are based all the attempts and proposals for reorganization—whether of marketing, of purchase of requisites, or by advertising British produce, by the stabilization of prices by purchasing boards or guarantees, by subsidizing the farmer's wages bill—the alternatives here proposed would clothe the countryside in a new vestment. Agriculture must follow the lead of other industries; it must be bound no longer by worn-out conventions but must shake itself free. Only when rehabilitated in all the adornments of discovery and invention may it hope to take its proper place, once more, in the social and industrial life of the country.

It is not expected that the changes indicated as being necessary can be brought about in a day. On the contrary, it is essential that they should proceed slowly, so that they may be developed in the light of experience. It is not suggested that the industry itself can be asked to set about them unaided. There was a time when this might have been possible. When, as Lord Ernle writes, 'the Duke of Bedford at Woburn, Lord Rockingham at Wentworth, Lord Egremont at Petworth, Coke at Holkham, and numerous other landlords, headed the reforming movement'; when 'Fox, even in the Louvre, was lost in consideration whether the weather was favourable to his turnips at St. Anne's Hill'; when 'Burke experimented in carrots as a field crop on his

farm at Beaconsfield'; when 'Lord Althorp's first question to John Grey of Dilston, who called on him during a serious crisis of affairs, when he was Chancellor of the Exchequer, was "have you been at Wiseton on your way up? Have you seen the cows?" '—in those days it might have been through the interest and co-operation of the landlords of England that this new conception of farming would have been tested and spread. Then, it was the necessity of the urban industrial worker that supplied the incentive to farming reform; now, it is his necessity that has killed it. There is neither the heart nor the money for a big adventure on the land, and the State must step in to help, or it must be prepared to accept the consequences of inaction.

But whatever may be done, let it be in the direction of action, not of reaction: let it be for the reconstruction of agriculture, not for the stabilization of the industry in its present unprofitable position.

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